

School of Health Sciences
Science, Engineering and Health College
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Candidate’s Declaration

Except where due acknowledgement has been made, the work is that of the candidate alone. The work has not been submitted previously, in whole or in part, to qualify for any other academic award. The content of the thesis is the result of work which has been carried out since the official commencement date of the approved research program. Any editorial work, paid or unpaid, carried out by a third party is acknowledged and ethics procedures and guidelines have been followed.

Guinevere Gilbert
December 2010
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In memory of the late Mrs. Winnifred May Midgelow.
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Summary

The construction industry is labour intensive and characterised by features such as temporary project teams, a unique end product and a transient labour force (Jaafari, 1996). The industry is also dominated by a few large construction organisations and many small organisations.

Evidence from various sources suggests that large firms are more likely to implement formal graduate development programs than small firms where the training is more likely to be ad hoc, informal and sourced when required (ABS, 2003). Benefits of graduate development programs include increased commitment, job satisfaction and motivation and decreased intention to leave (Arnold & Mackenzie Davey, 1994a; Arnold & Mackenzie Davey, 1999; Sturges, Guest & Mackenzie Davey 2000). The benefits of informal training have not been identified.

There is no evidence to suggest construction organisations evaluate the outcomes of either graduate development programs or informal training, therefore it is not known how the two experiences compare with each other. This research set out to explore these issues by evaluating graduate development programs implemented by some construction organisations and comparing them with informal training activities implemented in other construction organisations.

The thesis adopted a sequential exploratory mixed methods approach which was reflected in the program evaluation methodology. The first phase collected qualitative data from construction organisations through semi-structured interviews. The aim of Phase 1 was to identify what graduate training activities were implemented, and to define the intended outcomes of this training. The second phase of the research asked the graduates what training they undertook and measured the presence of the intended outcome identified from Phase 1.

The results of phase one showed very similar forms of training implemented by construction organisations with and without GDPs. All organisations implemented external seminars and workshops; in-house seminars and workshops were the next most
popular training activity. Organisations that implemented a GDP noted career
counselling as the third most frequently implemented training activity. Organisations
that did not implement a GDP indicated the use of computer software training as the
third most frequently implemented training activity. The most desirable outcomes of
training were skill acquisition and improved retention of graduates within the
organisation. The conclusion to Phase 1 discussed the measurement of skill acquisition
and it was decided to retain this aspect of the research for future investigation. This was
due to the lack of historical data held by construction organisations, and difficulties
associated with reliable measurement of skill acquisition within the scope of this study.
It was recommended that skill acquisition should be investigated as a separate study
which would enable a control group and longitudinal data collection to be implemented.

Phase 2 of the research focussed on the relationship between training activities
undertaken by graduates in construction organisations and their level of retention. A
literature search identified the measurement of organisational commitment as a reliable
indicator of intention to leave and therefore retention. The three components model of
commitment was developed by Allen and Meyer (1990) and validated by others (Arnold
& Bosley, 2000; Cohen, 2007; Smeenk, Eisinga, Teelken & Doorewaard, 2006).
Further, the TCM provided an instrument to measure commitment which has been
accepted globally. Graduates were interviewed and their commitment measured. The
relationship between commitment and graduate development programs was found to be
statistically insignificant, although a trend towards higher affective commitment was
found amongst the sample that undertook a graduate development program. The
research suggests that the trend is partially attributable to the relatively small sample
and that a larger sample might find this relationship to be significant. As a result, the
research hesitates to support the hypothesis that construction graduates participating in a
GDP are more committed to their employer than construction graduates who are not
participating in a GDP. However the hypothesis is partly supported.

Of the individual training activities, job rotation was found to be significantly positively
related to affective commitment across the whole sample. Where there was no graduate
development program, multiple job interviews were found to have a statistically
significant and negative association with continuance commitment. Other findings were
interpreted as trends, suggesting a potential relationship, and warrant further
investigation. Among them, external seminars were found to be linked to an increase in affective commitment when included as part of a GDP. Documented career planning information was linked to a lower affective commitment score for those graduates not in a GDP.

The findings of the research suggest the psychological contract has a significant role to play in early career commitment. The study paves the way for a number of potential research projects in this field, such as if construction graduates increase the variety of skills or if they improve current skills as a result of training and development activities.

The research recommends that construction organisations would benefit from conducting multiple job interviews prior to offering employment to a graduate, and that effective management of job rotation will lead to increased commitment, noting that there are risks such as uncertainty, variety, stress if managed poorly. The potential benefits from these two activities include increased organisational commitment.
Chapter 1  Introduction

1.1 Introduction

This chapter provides a context for the research. It explains the typical early career prospects for a graduate with a degree in construction management, through initial employment in an industry dominated by a few large organisations yet characterised by many small organisations. The difference in approach to training and the potential effect of this difference on graduates is introduced. The research question and the methodological framework are presented, and the structure of the thesis is described.

1.2 Researcher’s background

For the purposes of transparency (given the use of qualitative research), the background of the researcher and her experience in the construction industry is briefly explained.

The researcher graduated with a Bachelor of Building in 1993 in the UK. She was supported through her degree by a large multi-disciplinary construction organisation. This provided her with a range of site based experiences. Post graduation, the same organisation enrolled the researcher into a graduate development program which required three years of rotation through different roles, on different projects in different disciplines. Thus, experience was gained on commercial, heavy industrial and residential construction projects.

The advantages of such a program to the long term career were clear: a mental map of the organisation and its internal relations, strategies and of the management approaches within the different disciplines, and identification of a preference for the long term career. However the negative aspects of the program included the need to travel great distances frequently and with little or no notice, not seeing a project through its entirety from design to completion, not building a long term professional relationship with colleagues, not being able to establish an effective mentor relationship, and generally feeling like a dogsbody to fill temporary vacancies created by the annual leave of other staff. Within months of completing the program, the researcher left the organisation to join an academic institution. Whilst this experience may not be the same for all
graduates, it does demonstrate that personal needs and expectations are often not aligned with, and in fact can contradict, organisational needs and expectations, and thus create an unsatisfactory outcome.

The researcher is now an academic and has the opportunity to talk to construction students and graduates daily. Although there are a myriad of experiences, many graduates are able to recall experiences that reveal a less than satisfactory transition from student to employee. The experiences are diverse, with support ranging from hands-on to non existent, and roles varying from mundane to challenging. Sited somewhere within this scale, there is a tendency in large construction organisations to design and implement formal development programs which pre-determine and document the experiences and training a graduate undertakes during their employment. Such programs are known as Graduate Development Programs or GDPs. This thesis examines the effects and success of GDPs implemented by construction organisations in Melbourne, Australia.

1.3 Research Background

1.3.1 The construction industry context

The output of the construction industry is the built environment in which people conduct their daily lives. Products of the industry include infrastructure, residential, commercial and industrial buildings. De Valence (2001) notes that industry definitions are characterised by product homogeneity, an approach not suited to construction because of the range of products that the construction industry manufactures. However in Australia the industry is analysed according to the output of three sectors: engineering construction, residential construction and non-residential construction, as demonstrated by the Australian Bureau of Statistics (ABS) (2008). Hager, Garrick, Crowley and Risgalla (2000) suggest that the fragmentation of the construction industry reflects specialisation in these areas. In 2005-06 the construction industry, excluding the engineering sector, contributed 6.4% to Australia’s GDP and employed 876,000 people (ABS, 2008). This figure is close to the average GDP contribution from construction industries in developed countries of 6.47% in 2006 (OECD, 2010).
De Valence states that “some analysts” compare the construction industry to manufacturing (2001) but Jaafari (1996) argues that this comparison is not valid as construction is characterised by features such as project teams comprising many consultants and suppliers; the product is always unique in some way, and the labour force is largely transient. In an industry where the product is still the result of a labour intensive process, this lack of permanent skilled labour was thought to be a barrier to advances in the industry such as quality assurance (Jaafari, 1996). Total Quality Management, sustainable construction and other industry advances have been made as a result of client demands.

Perhaps because of the labour intensive nature of the industry, it’s economic performance and significance is recognised as volatile. The ABS (2010) report that the New Tax System and the Building the Education Revolution program had and are expected to have positive impacts on Gross Value Added by the construction industry. There are also strong trends in private residential building associated with global economic conditions. The construction industry also reflects the health of other industries that require infrastructure and building facilities in which to conduct business (OECD, 2010).

The construction industry is known to be dominated by a few large organisations. This is demonstrated by the treatment of construction industry data by the ABS. Firstly, in the 1996-97 survey of residential construction and trade firms, 182,000 of the 194,300 registered businesses employed fewer than five people (93%) (ABS, 1999). Later, the Construction Industry Survey carried out by the ABS in 2002-03 and published in 2004 shows small businesses account for 72% of all “working proprietors/partnerships” but only 6.2% of all construction industry employees (ABS, 2004). For most reports published by the ABS, small means fewer than 20 employees, and medium means between 20 and 99 employees. However for ABS construction industry reports these boundaries change and data are presented in categories represented by firms of fewer than five employees, between five and 19 employees, from 20 to 99 employees and firms employing 100 or more employees. This reflects the high proportion of construction industry personnel employed in firms of fewer than five people.
The industry is well known for its high proportion of male employees. In 2004, 87% of construction industry employees were male (ABS, 2004) and the resultant construction site culture is very masculine in aspects such as communication and conflict (Loosemore & Galea, 2008). However the ability to contribute to the creation of a tangible product that will have a long term impact on individual lives through the built environment is known to be a motivating factor for those that work in the industry, regardless of their gender (Smithers & Walker, 2000).

A construction organisation that recruits graduates with a degree in construction management will have a need for a young employee who is not yet able to work without supervision, due to a lack of experience, but who can learn quickly and carry out simple tasks unaided. It would be unwise to expect a graduate recruit to manage a construction project unsupported; although a degree gives the graduate background knowledge of the construction industry, the soft skills acquired through experience such as management and communication have not yet been refined. Given graduates require at least intermittent supervision, they are not likely to be recruited by small family firms located in suburban areas. Anecdotal evidence suggests that the needs of a graduate are more likely to be met by organisations with sufficient volume of people to provide proper supervision. It is suggested that such organisations will be located within or close to the centre of major cities where the majority of construction work is carried out, and access to transport and amenities is good. This does not mean that graduates do not work for small construction organisations outside of central business district (CBD) areas, but that they are less likely to find work in construction organisations of less than 5 people. Graduates recruited by small construction organisations may have an informal association with that organisation, created prior to or during the tertiary studies, for example being part of the family that runs the business.

It is also argued that the density, value and size of construction projects increases with proximity to the CBD and this also creates a demand for young employees who can fulfil minor roles such as joining a contract administration team, on major projects. Again, this is not to say that projects of considerable value are not undertaken outside of cities, but that they are less frequent. The lack of appropriate work for graduates outside of cities as a result of the nature of work that graduates
can do, and where that work is located, suggests that the majority of graduates will find employment in medium and large construction organisations, within, or relatively close to a central business district.

### 1.3.2 Training in the construction industry

The provision of training for employees depends upon and reflects a number of factors and organisational characteristics. For example, the Australian Bureau of Statistics found that larger employers were more likely than smaller employers to provide structured training to the employees (ABS, 2003). “During 2001-02, 98% of employers with 100 or more employees provided structured training, compared with 70% of medium sized employers (those with 20 – 99 employees) and 39% of small employers (those with less than 20 employees)” (ABS, 2003). The same survey revealed the lowest levels of net expenditure per employee were in the construction industry ($208), compared to mining ($1,643). Bearing in mind the reliance of the construction industry on labour intensive techniques, the fact that only cultural and recreational services spent less per employee than construction raises questions about employer regard for employee skills.

Across the construction industry, 73.4% of employees received some unstructured training while 39.6% received a combination of structured and unstructured training (ABS, 2003); in 2009, only 19% of construction employees reported undertaking work related courses (ABS, 2010). Combined with the previous findings, it is possible to infer that in the construction industry many people receive a small amount of training, and that there is a preference for unstructured training. In a heavily regulated industry, it is no surprise to see that legislative requirements were the most popular driver of training (reported by 56.4% of employers), followed by maintaining professional status (43.9%) and staff development (36.4%) (ABS, 2003). These results suggest that training in the construction industry is largely only that which is necessitated by legislation and that additional training is much less frequently implemented. The current induction card (known as the Red Card) is an example of minimal training required by law before an individual can work on a construction site.
Given the large number of organisations in the construction industry which employ less than five people and the preference for small organisations to undertake unstructured training, it would be reasonable to infer that unstructured training is the most frequently implemented form of training in the construction industry. This could be expected to pose a problem for construction management graduates. Having completed a tertiary qualification, graduates expect further development opportunities as part of their employment (Arnold & Mackenzie Davey, 1994a; Brown & Scase, 1994; Hesketh, 1993; Keenan & Newton, 1986; Pitcher & Purcell, 1997; Tannenbaum, Mathieu, Salas & Cannon-Bowers, 1991). In response, organisations expect graduates to have completed a tertiary qualification in a field related to the building industry thus giving them some knowledge of the technology and specific management needs of a construction project and therefore some basic skills which make the graduates useful and employable. Given the ABS findings, do graduates employed by small construction organisations receive unstructured training, and graduates employed by large construction organisations receive structured training, such as a Graduate Development Program?

The Australian Association of Graduate Employers defines a Graduate Development Program (GDP) as the formal opportunities provided to the graduate employee to support their development both professionally, personally and technically (AAGE, 2010) where the opportunities are the same as those included in informal training, for example courses, mentoring, work rotations and external qualifications. The difference between a GDP and informal training is the holistic and long term nature of the outcomes: professional, personal and technical development, as opposed to the very specific, short term outcomes realised by informal training such as meeting minimum safety requirements and acquiring the skills required to complete a task. Jacobs and Park (2009) agree with this distinction, noting that formal training (such as that proposed by the current research to constitute a GDP) and informal learning are the defining features of workplace learning, and that formal training is planned whereas informal learning occurs where learning is triggered by an expected problem that will require resolution; it occurs as needed. The thesis will argue that this form of learning in the construction industry focuses on safety as a serious risk in the workplace. The suggested benefits of GDPs run by large organisations include increased organisational commitment, job satisfaction, motivation and decreased
intention to leave (Arnold & Mackenzie Davey, 1994a; Arnold & Mackenzie Davey, 1999; Sturges, Guest & Mackenzie Davey, 2000) but measurement of the extent to which graduate development programs achieve such objectives does not appear to have been carried out; it certainly is not documented by organisations such as Graduate Careers Australia (B Guthrie, Acting Executive Director GCA, personal communication, November 17, 2010) or by the Australian Human Resources Institute.

Research has been conducted on the informal experiences of graduates in a variety of industries in the UK, including for example the longitudinal study carried out by Arnold and Mackenzie Davey (1992, 1994a, 1994b, 1999). Experiences of these programs have been identified as being variable but suggested outcomes have been increased commitment, satisfaction and motivation and decreased intention to leave (Arnold & Mackenzie Davey, 1994; Arnold & Mackenzie Davey, 1999; Sturges, Guest and Mackenzie Davey, 2000). Further research sought only graduates in small organisations as the population (Arnold & Bosley, 2000). Whilst these projects are of interest, they highlight a shortcoming that will be covered by this research. They have not included graduates entering the construction industry; no work has been done which specifically evaluates graduate training within the construction industry. It is not known how the two training and development experiences compare with each other. It is possible that an informal training experience is as positively correlated with the realisation of desirable outcomes as formal training activities, but no reliable evidence exists to confirm this.

Other industries have recognised the particular development needs of graduates in small organisations, and have implemented programs to assist employers in graduate development. For example, the professional body for engineers, Engineers Australia, set up Engineering Education Australia to develop and manage an industry-wide Graduate Program in Engineering to assist in the qualification of graduates to member status of their organisation. The program has been well received and adopted by large organisations (P Parr, IEAust Director of Education and Assessment, personal communication, August 1, 2001). Small engineering organisations are supported by Engineers Australia through the provision of professional development activities in conjunction with on the job experience and incentives (often monetary) provided by
the employer to the graduate engineer (J Lynch, Engineers Australia Coordinator of Professional Development Program, personal communication, April 28, 2009). Lynch views the relationship between small engineering organisations and Engineers Australia as a partnership which is documented in the form of a contract which is unique to each organisation and therefore meets the different needs of each SME. That Engineers Australia recognises the needs of graduates in SMEs are different to the needs of graduates in large organisations implies that the current experience of engineering graduates in small organisations is of lower quality than the experience of graduates in large organisations and therefore that graduates in small engineering organisations would benefit from a more structured program. The Australian Institute of Building (AIB) initiated meetings to propose a similar program in the construction industry but it has so far been unsuccessful in going beyond the discussion phase (R Hunt, AIB President, personal communication, April 28, 2009).

This background information has now highlighted two potential areas of research: firstly, what type of graduate training occurs in the construction industry? Secondly, which form of graduate training is the most successful? The first question is raised because it has been identified that both structured and unstructured training and development occurs in the construction industry. However as the industry has a large number of SMEs, is there a preference amongst small construction organisations to deliver unstructured graduate training, whereas large construction organisations prefer to deliver a formal graduate development program? Although it was suggested earlier that graduates tend to find employment in medium and large construction organisations, this research cannot exclude graduates who do find employment within construction organisations of less than five employees. Investigating what type of graduate training occurs is the necessary first stage to answering the second question which forms the core investigation of this research: is one form of graduate training more successful than the other? The relationship between these two areas of investigation is further developed in the next section of this chapter.

This research will benefit the industry through identification of those elements of GDPs that correlate positively with desirable outcomes, whilst allowing an individual sufficient autonomy to manage their own career paths. Small organisations will benefit from having the relationship between elements of GDPs and their outcomes
clearly defined. They will be able to use their limited resources in more cost effective ways. Larger organisations will be able to modify their GDPs and avoid spending time and money on ineffective activities. The construction industry stands to gain from better use of resources and an increase in graduate employee capabilities.

1.4 Research Aim

The aim of this research is to compare the success of GDPs and informal graduate training activities.

This aim will be achieved through measured work towards the following objectives:

- identify the format of training implemented in construction organisations as either formal or informal,
- evaluate graduate development programs implemented by some construction organisations,
- evaluate graduate training activities implemented by some construction organisations, and
- to identify individual training activities that are significantly associated with positive outcomes.

Make sure this matches chapter 4 and 5.

1.5 Research Question

The research background highlighted the lack of objective evidence that graduate development programs implemented by construction organisations are effective. Thus the main research question is:

Are graduate development programs as successful as informal training activities offered by construction organisations?

The difficulty with answering such a question is the presence of undefined factors such as the success of GDPs, and what graduate experiences actually comprise. Therefore the research needs to define both of these terms before arriving at a
conclusion. Subsidiary questions that structure the research and define these terms are therefore:

RQ1. What graduate training and development activities are implemented by construction organisations?
RQ2. What training and development activities are undertaken by graduates in construction organisations?
RQ3. What is the intended outcome of graduate training and development activities implemented by construction organisations?
RQ4. Is the intended outcome achieved?

The research question deliberately excludes any reference to organisation size. Although anecdotal evidence and literature has identified small and large construction organisations as being likely to have different preferred training methods, there has not been a definitive conclusion. It is not possible to say that all small and medium construction organisations will definitely adopt informal graduate training practices, and it is even less likely that all large construction organisations will definitely adopt a formal graduate development program. It is therefore necessary to allow the research to experience training methods adopted by construction organisations as found during the data collection, without any predictions which may impose limitations on the research. Such a limitation might require exclusion of an organisation from the research because they do not fit the model suggested. However it is expected that the empirical primary research conducted here may reflect the relationship between the size of the organisation and the training activities implemented, and this finding may offer opportunity for discussion later in the thesis.

1.6 Research Method

The research processes are guided by the principles of evaluating training programs recommended by Stufflebeam (2000a). The research process includes two Phases. In Phase 1, following a review of the literature interviews with construction organisations with offices in Melbourne, Australia, will be carried out. The data collected from these interviews will be qualitatively factual, to establish what training
and development activities are implemented and what are the desired outcomes. These data will enable definition of a successful GDP and an instrument measuring the appropriate consequence will be sought. It is important not to bias the “story”, so the research makes no assumptions regarding what the intended outcomes of training might be until qualitative data collected from organisations have been analysed. For Phase 2, available graduates within the organisations that participated in Phase 1 will be interviewed to establish what training and development activities they have attended, to confirm the information given by the organisation in Phase 1, and whether or not the desired outcome has been achieved.

The mixed methods sequential research approach is a natural methodological framework for this research. Tashakkori and Creswell (2008) note that program evaluators have most effectively integrated qualitative and quantitative methods for some time. The sequential nature of the methodology, plus its flexibility to allow a pragmatic approach to follow the development of a story is well suited to the exploratory aspect of this work. The emphasis of this work, as with sequential mixed methods, is on the journey of discovery and interpretation of all the data that is revealed, rather than relying on the pure analysis of primary data. Situating this research in the construction industry requires interpretation of the both the primary data and the secondary data provided by the industry.

The research is also exploratory; there is no model or theory to be tested since research of this nature in the context of the construction industry has not been conducted previously. The purpose of the research is to establish current practice and identify potential consequences. The establishment of significant causal relationships is not expected and neither are the findings expected to be generalizable to the construction population. The three methods of exploratory research, sequential mixed methods and program evaluation are very successfully aligned with each other.

1.7 Structure of thesis

Two characteristics of this research affect the structure of this thesis. Firstly, the principle of sequential mixed methods is that the findings of Phase 1 inform Phase 2. No expectations of Phase 2 should be developed until Phase 1 is complete.
Secondly, the exploratory nature of the research requires that no assumptions are made so that the research is not biased towards expected findings. The thesis, as a vehicle to document the research story, should also not create reader expectations and care has been taken during writing to avoid making predictions until analysis is complete. To remain truthful to the methodology, the thesis has two parts each of which reflects a Phase of the research.

Part one begins with the second chapter of the thesis which reviews the literature relevant to the research. In particular, the many different formats of training and development activities implemented across all industries will be discussed, as will the nature of formal graduate development programs – their benefits, design, implementation and evaluation. The presence of training and development activities in the construction industry is considered. Having established current knowledge and interests in the field of training and development, Chapter 3 describes the theoretical framework that underpins the methodology used to conduct this research. Literature relating to the development of program evaluation and its similarities to sequential mixed methods research is discussed as well as exploration of good research practice. Chapter 4 collates information on program evaluation and sequential mixed methods with the research questions and argues that a survey previously tested and administered by Gutteridge, Liebowitz and Shore (1993) provides a good foundation on which to build interview questions. The procedure for collecting data for Phase 1 is also presented here. Qualitative analysis of the data produced from Phase 1 is undertaken in Chapter 5. Initial analysis of the presence and form of training is carried out; data arising from the interview questions are analysed to identify outcomes of GDPs that organisations find desirable. Chapter 6 concludes Phase 1 of the research and at this point an unexpected but necessary shift occurs in the research process; two major findings result from Phase 1 and it is argued that one of these requires much more rigorous investigation than can be accomplished within the constraints of research for a PhD. As should be expected with research labelled as exploratory, more than one avenue of investigation may arise and some of these may be temporarily reserved for future, in-depth analysis. Chapter 6 discusses how the two major findings should be investigated, and arrives at the decision that only one finding can be thoroughly investigated during Phase 2. The thesis recognises that both findings are of equal importance, and that by focusing on only one finding, the
The original research question cannot be answered completely but that the conclusion of the research still has the potential to be original and invaluable to the research and industrial communities.

Chapter 7 establishes current knowledge relating to the finding in Phase 1 which is to undergo further investigation. Literature on the development of the theory is presented, as well as a review of the measurement tool to be adopted. This chapter also describes the process of data collection. The quantitative data and its analysis is presented in Chapter 8. Statistically significant results are highlighted in addition to interesting trends. Discussion of the results occurs in Chapter 9, where the findings are divided into those which were significant and those which raise further questions. Each result discussed follows the same order: presentation of the objective result from statistical analysis, proposed explanations for the result, exploration of the validity of each explanation and conclusion that one explanation is most likely. Strong emphasis is placed on the construction context from which the data was drawn during this discussion, although some experiences in other industries provide useful comparison.

Chapter 10 reflects upon the research carried out and the limitations of the research, not least the decision to narrow the focus of Phase 2 and the impact this has on the research outcomes. It is asserted that the statistically significant findings of the quantitative data in Phase 2 are valuable and add to the body of knowledge around training and development in the construction industry while recognising that this investigation is not entirely complete and should continue. The research questions are answered and recommendations are made.
Chapter 2  Literature Review

2.1 Introduction

The previous chapter described the structure of the construction industry as one of specialisation and fragmentation. An interpretation of the literature has shown a general trend for small organisations to favour informal ad hoc training whereas large organisations are more likely to implement formal, structured developmental training. However ABS data shows the construction industry in particular spends very little, relatively, on training. Although prior research has been conducted evaluating graduate training, the construction industry has not been specifically investigated and so it is not known how the two experiences of informal and formal training for graduates in the construction industry compare.

In this chapter the current literature on human resource development including the design, practices, benefits and evaluation of GDPs is explored. The nature of training and development in small and medium enterprises (SMEs) is discussed with particular reference to barriers that prevent training and development being implemented in generic small organisations. Training and development practices in the construction industry are reviewed.

2.2 Definitions

The research question focuses on the use of GDPs in the construction industry. However limiting the literature review to GDPs would be too restrictive as it would result in other generic but relevant training and development literature being ignored. It is important to include in the literature search such terms as “graduate training programs”, “employee development programs”, “human resource development” (HRD) and “career management systems”. Jacobs and Washington (2003) insist that before research begins it is necessary to clarify such terms as development, program, training and performance.
2.2.1 Career development

A career is broadly defined as the long term movement of an individual through a series of employment roles. Usually this movement coincides with stages of the individual’s adult life, and as the individual gains in experience, the movement is progressively more senior. The progression is ongoing, may be within a professional field, and may offer stability to the individual. Greenhaus, Callanan and Godshalk (2000) describe the different perspectives of a career; an individual may perceive their career to have similar characteristics to that of a tangible item, it can be possessed, desired or valued or it may be a necessity. On the other hand, a career may be perceived by an organisation as the intra-organisational path followed over a period of time.

A number of models of career development have been proposed and they are not profoundly different. Similarities include the career stages, typically early, mid and late (Super, 1980) with variation in the number of middle stages; the relatedness of each stage to phases of adult life and associated circumstances; age and experience (Erickson, 1950; Levinson, 1986). Some models demonstrate that an individual advances from one stage to the next, whereas Super (1980) argues that each stage is temporary and individuals may move backwards within the model as well as forwards. The ages associated with each stage vary considerably with Super’s estimation of the exploration stage beginning at 15 years followed by establishment at 25; Miller and Form associate the trial stage at 18 years (Greenhause et al., 2000), Hall and Nougaim (1968) link establishment to 25 years while Schein (1978) who identified the most number of stages, begins early career at 17. Clearly it is not a case of one size fits all, since pathways to employment may take in tertiary education. Recent trends in the field of career research show an interest in the influence of the multiculturalism on the career (Khapova, Vinkenburg & Arnold, 2009).

A source of ongoing debate is who is responsible for career development; both the organisation and employee (Boudreaux, 2001), or is the individual responsible for their own career development. It is argued that the individual should be supported by the organisation but should not have, as their core purpose, achievement of organisation objectives (for example Cummings & Worley, 2005; Simonsen, 1997).
Jacobs and Washington (2003) defined employee development from two perspectives: as either a “…mechanism for helping individuals achieve their own self-development and self-enrichment goals…” (p. 347) in which the emphasis is on the employee being responsible for their own development (see also Tansky & Miceli, 1991) or as an organisational strategy in which employees’ learning needs depend on organisational goals. Which perspective is preferred might coincide with the organisation’s philosophy towards career management. Some authors (such as Limerick & Cunnington, 1993) suggest that when organisations become unstable and move from being paternal life-long employers to nothing more than a loosely coupled network, careers also become unstable and responsibility for careers rests with the individual employee. Longenecker, Simonetti and LaHote (1998), on the other hand, point out that there are worldwide growing demands of modern managers and ask if it is the sole responsibility of individuals to speed up the learning curve in order to keep up? Preskill and Donaldson (2008) reviewed the literature and identified specific events that have “…become a catalyst for shifting the burden of career development from the organisation to the individual…” (p.105) including high turnover, the population of the generation known as Baby Boomers, rising retirement ages and the value of knowledge over skills. In the field of engineering, Gibson, Davis-Blake, Dickson and Mentel (2003) found a high proportion of engineers nearing retirement and predicted that the transfer of knowledge to younger engineers will be a critical success factor. Skills Canada recognised the skills shortage in the Canadian construction industry which leaves a high proportion of vacancies unfilled (Spinks and Moore, 2007); it is expected that this will encourage organisations to adopt proactive behaviour towards managing the careers of their employees. Tucker et al. (1999) go further, calling on construction organisations in the US to actively find ways to retain older, qualified workers employed whilst taking into consideration their age, in response to a predicted rise in the number of baby boomers and the difficulties posed on society by such a large number of retirees.

A more cautious stand is that career management is the responsibility of both employer and employee (Clark, 1992; Gutteridge, Leibowitz & Shore, 1993; Herriot, 1992; Stevens, 1993 and 1996) although Gutteridge et al., Herriot and Clark all use the term “Career Development” instead of career management. McDonald and Hite (2005) also structure their discussion of career development from the perspective of
the individual or organisation being responsible. The argument that both individual and organisation are responsible is also posited by Gilley, Eggland and Gilley (2002) who point out that both parties stand to gain from career development. Gutteridge et al. describe the focus of career development as shifting from individual career goals, to organisational need, and finally in the 1990s to a balance which aims to achieve alignment between individual and organisational needs. In an unstable environment where organisations are forced to restructure to survive, thus leading to fewer opportunities for promotion, instead of reducing the human resource (HR) function, Gutteridge et al. suggest using HR facilities to train employees and assist in developing careers so that lateral career moves are possible. This would have the added benefit of increasing job satisfaction and having organisational change accepted. Hirsh and Jackson (1996) proposed a career development continuum which shows who is responsible for career development and with what type of job. They propose that a “job for now” with little regard for the long term benefits to the individual or the organisation would only warrant enough training for the individual to perform the task for which they are responsible. The other end of the scale is organisational career development in which the organisation is responsible for a comprehensively individually planned development. The debate about responsibility for career development continues with Greenhaus, Callanan and Godshalk (2000) suggesting that the balance pictured by Gutteridge et al. (1993) has not transpired. Lips-Wiersma and Hall (2007) found the balance can exist through adoption of different career development practices which individually focus on one or other partner, but which, when combined, ensure both the organisation and the employee play a role in development.

2.2.1.1 Early stage career development and socialization

The stage with which this research is concerned is the early career, noted as dominated by the desire to become established and “making it” (Greenhaus et al., 2000). This stage is characterised by ambiguity, networking (de Vos, de Clippeleer & Dewilde, 2009; Rode, Arthaud-Day, Mooney, Near & Baldwin, 2008), a need to become accepted, the activities of goal setting, career planning (de Vos et al., 2009) and socialization. Socialization is accepted as an intervention to facilitate the
adjustment of new employees to an organisation (Ashforth & Saks, 1996). Ashforth and Saks also note that socialization is known to affect the commitment levels of new employees. If the early career, or more specifically the transition to early career from senior or tertiary education, is characterised by ambiguity, uncertainty, low commitment and an associated decrease in productivity, then assisting new employees to understand and adopt an organisation’s values, culture and behaviours (Van Maanen, 1976) will reduce this period of ambiguity and begin the useful employment period sooner. But how does socialization occur and what empirical evidence exists regarding its success?

The “fathers” of socialization as a concept and a field of research, Van Maanen and Schein (1979) initially proposed that socialization took place using continuums of six tactics. These describe whether the socialization process took place in groups or individually; if it had clearly defined activities expected to occur in a set order and taking a predictable duration, or if the activities were random and with no time frame; if the role that the individual was expected to take on was a new one or previously occupied and therefore providing a role model, and if the organisation acknowledged and built upon the individual’s experience or attempted to disregard and even undermine the individual’s experience. Broadly these tactics were, and still are, grouped into either institutionalized (custodial) or individualized (innovative) socialization; the former imparting the organisation onto the individual and encouraging conformity, the latter accepting the individual and allowing development (Jones, 1986; Tuttle, 2002).

Socialization into an organisation has multiple documented benefits: individual and collective needs are fulfilled (Van Maanen & Schein, 1979), organisational knowledge is disseminated and the professional relationships required for success are initiated (Cohen & Veled-Hecht, 2010). Successful socialization results in the individual newcomer being integrated into the social, functional, and hierarchical characteristics of an organisation while retaining a balance of innovation and compliance (Tuttle, 2002). “Strong” socialization (as described by Cohen & Veled-Hecht, 2010) is related to organisational commitment, job commitment and work group commitment.
Institutionalised socialization where it occurs successfully specifically induces newcomers to conform to established goals and methods and maintain the status quo. It reduces the uncertainty and anxiety that impairs newcomer adjustment and is positively associated with job satisfaction, organisational commitment and reduced intention to quit (Ashforth & Saks, 1996; Bauer, Morrison & Callister, 1998; Jones, 1986). However Cooper-Thomas and Anderson (2006) are critical of the claims about these outcomes as they are largely self-reported. They propose a model that combines learning sources and learning domains (both of which are internal to the organisation). The effect of combining different sources of information with application to various workplace venues allows a number of success indicators to be measured, including role performance, social cohesion, internal stability and external representation. This is a comprehensive model that offers increased reliability of assessment.

More recently, research into socialization and its outcomes has tended to be penetrative, such as the work of Cohen and Veled-Hecht (2010) which found not only that socialization has a positive impact on different forms of commitment, but that the outcomes of socialization are likely to remain, regardless of the organisational experiences of individuals later on. The fact that socialization has such a permanent impact makes the activities undertaken even more important to get right.

2.2.2 Human Resource Development

Human Resource Development (HRD) is a relative newcomer to the field of organisational development (Bierema, 2009; Sambrook, 2009), the term having been recognised in the USA for 30 years (Sambrook, 2009). Garavan, Costine and Noreen (1995) say that the initial objective of HRD was to form an alliance between human resources and organisational strategy. This is given a different perspective but a similar end result by Sambrook who suggests that the term HRD was created by academics to differentiate between strategic learning and development that is implemented to benefit both business and employee, and “old style” training and development (Sambrook, 2009). Jacobs (2000) traces the development of HRD from training and instruction design through training and development and then employee
development, to HRD. It is accepted that the roots of HRD are embedded in the human aspect of organisational development.

McGoldrick, Stewart and Watson (2001) present a detailed argument around the philosophical foundations of HRD but conclude that, as little attention has been paid to the foundations of HRD, there is no dominant paradigm of HRD research and that this is a “healthy” position to be in as it allows many opinions to be heard. Weinberger (1998) attributed this lack of a singular definition to the inter-disciplinary nature of the field of human resource development, citing systems, economics and performance as key fields of interest but by no means exclusive. Nearly a decade has passed and there is still no agreement on the most appropriate philosophical foundations of the field. In fact, authors are now moving towards evolving the theory as if the foundations were irrelevant anyway. Jacobs and Park (2009) and Sambrook (2009) provide two examples of this revolution. Sambrook writes about the development of what she calls “critical” HRD which, she says, addresses the failings of the “old” HRD concept such as social inequalities. It is argued that critical HRD challenges contemporary practices, although what those contemporary practices are is not established, again indicating that researchers concerned with HRD are now looking to the future, not the past. Within the term HRD are the concepts of learning as informal or formal. Jacobs and Park (2009) argue that these terms will constrain future HRD theory. They offer instead a framework for workplace learning which includes three variables: the role of the trainer, the location of the training and the degree of planning that goes into the training.

Additional evolution of the field of HRD includes consideration of the applicability of the original American theory to the international context (Woodall, 2005), reflecting Sambrook’s comments that the field originated in the USA. Weinberger (1998) adds weight to the considerable impact the American’s have had on this field, reviewing specifically American journals in her attempt to construct a single definition.

Two points relating to the development of HRD as a field are clear: the potential for polarisation of the field to either American or European context, and the ongoing lack of an unequivocal definition. This last point does not seem to have prevented researchers advancing new frameworks.
In Australia, HRD has changed dramatically since the publication of the report “Australia Reconstructed” in 1987 (ACTU/TDC, 1987) which addressed skill shortages. Hutchings and Holland (2007) describe training and development prior to the report as fragmented and focussed on the occupational skills of immigrants. They identified post 1987 HRD as moving towards developing internal labour resources and recognising the competitive advantage that employees with knowledge can give an organisation.

It is easy to picture the activity of HRD as a function of Human Resource Management (HRM), and HRD has been defined as being integrated with HRM (eg Stewart & McGoldrick, 1996). However, others argue that HRD is a separate function (although related) to HRM (Mankin, 2003; Sleezer & Sleezer, 1997). Mankin developed his own HRD model which graphically presents HRD in a lattice design showing HRD is influenced by and influences many aspects of an organisation, and hence is a distinct profession and field of study that comprises a variety of activities and processes (Rohmetra, 2006).

Mankin (2003) goes on to argue that organisations should use HRD to align their business strategies with human resource processes within the organisation and that if HRD does not take place then neither can learning or improvement or change. This is an important statement because the current research questions the role of HRD for a particular demographic of employee (graduates) in organisations who may not be looking for learning, improvement or change; perhaps small organisations that are at the beginning of the lifecycle of a firm. If this were the case, they would have short term goals such as survival and establishment before venturing into the need for improvement or change.

The potential benefits of HRD are numerous and the relationship between the concept of development, and outcomes is the subject of empirical research facilitating clarity and agreement. Some research attempts to quantify the positive impact of HRD on specific aspects such as soft skills, hard skills and job satisfaction (Rowold, 2008). Other work is more holistic, such as that by Gilbreath and Montesino (2006) and Shuck and Wollard (2010) who suggest that HRD can transform the workplace from
a somewhat grim and tedious environment into one conducive to productivity, innovation and associated competitive advantages for the organisation.

Several authors have described HRD as assisting achievement of the organisation’s strategic goals and as meeting the developmental needs of individual employees (Garavan, Costine & Heraty 1995; Holton, 2002; Sambrook, 2009). Holton (2002) describes the debate about the purpose of HRD as focusing on two objectives: learning (the benefit of the individual) or performance (benefit of the organisation). This is reflective of the argument about who is responsible for career development: the individual or the organisation. It seems that the division between employee and organisation is repetitive in a number of fields and it encourages conflict rather than collaboration. Jacobs and Park, though, define workplace learning (ie. A combination of informal learning and formal training) as meeting current and future requirements which, they say, is specifically worded so as to provide some balance in the beneficiary argument (Jacobs & Park, 2009).

2.3 Graduate Development Programs

Hirsh and Jackson (1996) explore the difference between training and development. According to them training activities are undertaken by most employees with the aim of skill acquisition. Such activities are not restricted to potential managers. Development however is reserved for employees who are recognised as high flyers in an organisation (such as graduate recruits), and has the aim of producing employees with broader organisational knowledge and management skills. Training activities are sometimes included as part of a development program; as graduate recruits identified as potential managers and therefore being developed should not be excluded from skill acquisition, the inclusion of training as a development activity is logical. However many authors still use the terms “training” and “development” interchangeably; Goldstein and Ford (2002) define training as a traditional way to develop individuals identified as potential future leaders in the organisation. A different point of view would be that graduate recruits are usually taken on because they have already been identified as potential leaders.
Greenhaus, Callanan and Godshalk (2000) suggest career management is a process by which individuals develop, implement and monitor career goals and strategies. Career management is practiced through a set of activities designed to promote a number of attributes including employee awareness. Such activities might include individual learning and development, on the job experiences, performance feedback and coaching and mentoring. These activities are remarkably similar to documented GDP practices. Again, this points to GDPs being a career development program for graduates, or a part of career development programs as when graduates cease to be graduates they may well progress from specialised training and development activities to others more applicable to a wider range of employees.

Other similarities between career development and graduate development can be seen in Patton and McMahon’s (1997) systems theory of career development which involves internal elements such as knowledge, skills, age, gender, personality and self concept interacting with external elements such as community groups, family, employers, peers and so on. Clearly an individual’s experiences before and during initial employment will influence their early development, whether it be short term or long term.

The placement of GDPs within career development in its many forms is relatively simple; GDPs are a part of career management or development programs, specific to the early stage of a new employee’s career where that employee has commenced work immediately after completing a tertiary degree. At this stage the new employee is not likely to be capable of or interested in career self-management, relying more on the organisation to decide which skills are required and to facilitate the opportunity to develop these skills. This also allows the organisation to build skills that match its strategic plans. Hall and Nougaim (1968), Schein (1978) and Super (1980) all agree on five stages of career development: growth, exploration, establishment, maintenance and decline (Super, 1980). But the recognition of these models is limited; these five stage models assume the individual’s career is linear (Wiener, 2003) and sustained by employment with only one or two organisations, a situation uncommon in the 21st century. Which of these is the most appropriate stage of career development for graduate development programs to be accommodated is unclear.
Throughout this research, GDPs are defined as a documented series of development activities arranged by the employing organisation, specifically for graduates to undertake and may result in organisational aims being achieved.

A number of authors (Brown & Scase, 1994; Hesketh, 1993; Keenan & Newton, 1986; Pitcher & Purcell, 1997; Tannenbaum et al., 1991) describe graduates’ traditional expectations as including challenging work and training and development opportunities. Arnold and Mackenzie Davey (1994a) agree, finding that training is one of the top three reasons graduates join an organisation. It is also noted that Arnold and Mackenzie Davey found that early responsibility is ranked the fifth reason for targeting a prospective employer. Keenan and Newton (1986) found that amongst engineering graduates there was an expectation to receive skill development (ie. training). Perryman and Pearson (2001) found that the expectations of graduates were often realised with half of new graduates experiencing training in some form during the three months prior to Perryman and Pearson collecting data.

### 2.3.1 Design

The content of GDPs varies from one organisation to another depending on many factors. But the process of deciding on the most appropriate structure and content (program design) is discussed in the literature and there is general agreement (for example, Brinkerhoff, 1987; Goldstein & Ford, 2002; Moorby, 1991).

The first stage in designing a development program is deciding that one is necessary. Moorby (1991) calls this the “vision” stage. Brinkerhoff (1987) has a similar idea but lists possible catalysts as: the problem beginning - the cause of the problem is analysed and defined; the change beginning - forecasting problems and impending change; the opportunity beginning – identify potential goals and benefit to the organisation; the strength beginning – identify desirable organisation characteristics and strengths; the new direction beginning – assess potential HRD goals and investments and benefit to organisation; the HRD beginning – because someone said so (Brinkerhoff, 1987).
Gutteridge et al., (1993) asked Australian organisations what prompted the implementation of their career development systems. The resultant empirical list bears little resemblance to Brinkerhoff’s (1987) theoretical contribution: organisational commitment to career development (29.1%); development of organisation’s strategic plan (18.4%); desire to develop or promote from within (16.2%); desire to increase productivity (6.7%); motivation of employees (3.9%); retention of employees (2.8%) (Gutteridge et al., 1993, p.63).

After the decision is made to design a program, the content must be justified. It is important, according to Brinkerhoff (1987), Stevens (1993) and Goldstein and Ford (2002) that an organisation should develop the content of a career development program based on a needs analysis. The literature describes the importance and the process of carrying out a needs analysis before the program content is determined, on the basis that this prevents financial investment in a development program being misdirected. The emphasis is on identification of where the organisation would benefit from development of its employees, taking into account its long term business strategy.

Goldstein and Ford (2002) suggest that the needs assessment will reveal the requirements and expectations of the organisation from the program, the knowledge, skills and attributes the participants should have, and the instructional objectives. This is the first stage of their four stage model.

Brinkerhoff (1987) developed a six stage model to guide organisations in effective program evaluation, but these stages of evaluation reflect the stages of design and then implementation. The first two stages of Brinkerhoff’s model are similar to the model proposed by Goldstein and Ford (2002) (see Table 2.1 for comparison). Brinkerhoff remarks about the first stage: “Stage 1 is not complete until it has developed a definitive answer to the question How will we tell if the HRD has been worthwhile?” (p.51). The procedure of a needs analysis can include the following: action research, assessment centres, attitude surveys, expert reviews, front-end analysis, interviews, knowledge tests, performance audits and work sample tests.
Brinkerhoff (1987) and Goldstein and Ford (2002) both arrive at a program design with what they indicate are best practice activities, although Brinkerhoff has a more detailed approach. The three authors now include implementation of the program as the next stage of their models.

Table 2.1

*Comparison of Program Design Models.*

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<th>Stage:</th>
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As might be expected, the work of Brinkerhoff (1987), Moorby (1991), Gutteridge et al. (1993), and Goldstein and Ford (2002) overlaps at several of the program design and implementation stages. Table 2.1 indicates where the overlap occurs. Although all these authors agree on the importance and principal stages of needs analysis, organisations vary enormously in how much effort should be put into this process. Despite the benefits of careful design, Meigs-Burkhart (1986) argues that less than half of all HRD programs are preceded by a needs analysis. A lack of needs analysis is not ideal, but it results from time and resource limitations.

### 2.3.2 Practices

As each organisation is likely to have different needs, it follows that the activities implemented to meet these needs will also be different. Since GDP activities may include training in order to acquire new skills or update old skills, activities identified
by the literature as training activities are included in this section on the content of GDPs.

Program practices most frequently encountered in the literature include: in-house development activities: courses, mentoring, job rotation, on the job instruction and counselling; external seminars and workshops, either arranged by the organisation or at the instigation of the employee where tuition reimbursement is available. Goldstein and Ford (2002) include as training activities employee orientation, on the job training, performance support systems and enterprise training.

The results of a survey of 245 Australian organisations, sanctioned by the Australian Institute of Training and Development and executed by Rylatt and Moy (1992), reveal that the most common interventions implemented were: in-house development, external seminars or workshops, counselling by supervisor, tuition reimbursement and counselling by personnel staff. They report that just over half (52.7%) of organisations that responded had career development programs. Baker and Wooden (1995) present data from three other surveys in Australia: the Survey of Training and Education (SOTE, 1993), the Training Expenditure Survey (TES, 1993) and the Training Practices Survey (TPS, 1994). The SOTE administered by the Australian Bureau of Statistics classifies training into fields of which “management and professional” is the most frequent field of training carried out, followed by “technical and para-professional”, “sales and personal service”, “general computing skills” and “general health and safety”. Aside from the topic of training, Baker and Wooden found from their analysis that large firms use a greater variety of training methods and favour in-house over external training, while small firms place more importance on use of knowledge within the organisation and prefer external training. However Baker and Wooden’s report does not classify training activities beyond in-house or external, and formal or informal and is therefore of limited use in this summary of GDP content.

Korte (2007) discusses the role of socialisation as part of a training program. The initial introduction of a newcomer to an organisation as part of their education regarding organisational mission and values, as well as explaining work tasks and roles often takes place through a kind of training called socialisation in which an
individual is introduced to a workgroup. During this process the responsibility for learning to fit into the group belongs to the individual and often occurs informally through trial and error. However teaching the organisation’s mission and values along with policies and procedures has been found to be of little value to newcomers (Bauer, Morrison & Callister, 1998). Korte suggested that socialisation may be more effective if the process is developed by a mentor, and says that the training of newcomers into an organisation may be delegated to the more informal instruction of the immediate work group members. However there may be some contradiction between the work group and the organisation.

The question of who implements the developmental activities is also addressed in the literature by Moorby (1991) and by Baker and Wooden (1995), as it is recognised that many organisations out-source the provision of some activities to those better equipped or more experienced in this field. Moorby (1991) argues that, in addition to internal functions such as mentoring and career planning, organisations can consider the use of consultants, tertiary and management institutions, private providers and distance and open learning courses. Moorby also argues that learner driven development brings additional flexibility and options to the content and packaging of development programs. Baker and Wooden report that most frequently it is the manager who determines what training is needed.

### 2.3.3 Benefits

If the evidence gathered from the literature shows that many Australian companies are not carrying out a needs analysis before designing their development programs, then why are development programs being implemented? Research has indicated that even without a needs analysis, positive outcomes can be expected from a developmental program (Arnold, 1997; Arnold & Mackenzie Davey, 1994a; Australian Institute of Training and Development, 1991; Baker & Wooden, 1995; Goldstein & Ford, 2002; Guest & Mackenzie Davey 1996; Gutteridge et al., 1993; Jacobs & Washington, 2003; Lee & Bruvold, 2003; London & Stumpf, 1982; Moorby, 1991; Sturges, Guest & Mackenzie Davey, 2000).
Benefits of GDPs are summarised in Table 2.2. It is important to remember that GDPs offer potential benefits to both the organisation and to the individual. The first six benefits are those found to affect the organisation as a whole; the remainder are those benefits which influence individual behaviour, and by implication, result in benefits to the organisation such as increased commitment and therefore reduced staff turnover. Jacobs and Washington (2003) argue that the relationship between individual benefits and organisational benefits is not supported by empirical evidence because of the difficulty in measuring the correlation between development programs and subsequent improvements to the exclusion of other causes.

One of the less well defined benefits to the organisation, but in various forms appears in multiple references, is the ability of the organisation, through observing individuals participating in a development program, to determine who is best suited for a particular job (Arnold, 1997; Guest & Mackenzie Davey 1996; Moorby, 1991). The opportunity to observe is certainly a recognised advantage of GDPs, since the graduate is seen as young and more easily influenced during this early stage after joining an organisation.

An ongoing benefit of the person-job fit is the ability of the organisation to identify the potential of individual employees (Arnold, 1997) and subsequently to promote employees from within the organisation (Guest & Mackenzie Davey, 1996).

A term frequently used to define desirable outcomes of development programs is competencies. Goldstein and Ford (2002) discuss competencies in terms of core and global. Meister (1994) describes core competencies as individual characteristics, skills and know-how. Organisations such as Prudential Healthcare specifically name desirable core competencies as communication, personal and work management, teamwork and customer focus (Bina & Newkirk, 1999). Global competencies are those which are valid across the organisation and distinguish one company from another. Intel’s global competencies are listed as: taking risks and innovation; continuous learning and goal setting leading to quality; properly planned projects; competitive products leads to customers; results orientated, and mutual respect and teamwork (Meister, 1994).
Table 2.2

Benefits of development programs.

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Global competencies reflect the culture of an organisation more than core competencies. In addition to core and global competencies, specific competencies can be defined as those required by different jobs (Goldstein & Ford, 2002); Prudential Healthcare have six specific competencies which are sought simultaneously with their core competencies (Bina & Newkirk, 1999). Arnold and Mackenzie Davey (1999) question whether development of core competencies is worthwhile, suggesting that self-development by employees would be more useful.
Some literature agrees on the benefits of GDPs that influence individual behaviours and indirectly benefit the organisation, possibly because individual behaviours are easier to measure (Arnold, 1997; Arnold & Mackenzie Davey, 1994a; Gutteridge et al., 1993; Sturges, Guest & Mackenzie Davey, 2000). Organisational commitment, motivation, job satisfaction and productivity are all listed as benefits arising from development programs. Lee and Bruvold (2003) established that amongst nurses in America and Singapore, the presence of employee development programs indirectly led to improvements in affective commitment (that caused by emotional attachment) and job satisfaction. They concluded that this has further benefits: employees working harder and with a reduced intention to leave which also avoids costs incurred by a high staff turnover. This perception is called high commitment behaviour by the organisation (Youndt, Snell, Dean & Lepak, 1996) and is thought to be reciprocated by the employees. Naumann (1993) found that training leads to both increased commitment and job satisfaction.

Some authors also present benefits of development programs to individuals (AITD, 1991; Guest & Mackenzie Davey, 1996; Gutteridge et al., 1993). Examples of individual benefits include self-development skills (Guest & Mackenzie Davey, 1996); personal and professional growth and self-direction (Gutteridge et al., 1993); enhanced self-determination and growth (AITD, 1991). Increased employability is thought to be an individual benefit (Gutteridge et al., 1993) but Moorby (1991) pointed out this was a negative outcome for the organisation as graduates with increased confidence, skills and experience seek to increase their responsibilities in different environments, often leading them to work overseas and hence the investment in their development is not returned.

### 2.3.4 Evaluation of Graduate Development Programs

In its simplest form, evaluation is the measurement of an intended outcome as a result of an intervention such as a training program. However evaluation as a process has evolved over time to become a multi-disciplinary research method in its own right. This application of the process to a variety of contexts has resulted in complex perceptions of evaluation best practice. A contemporary definition reflects this:

> The systematic use of substantive knowledge about the phenomena under investigation and scientific methods to improve, to produce knowledge and
feedback about, and to determine the merit, worth and significance of evaluands such as social, educational, health, community and organisational programs. (Preskill & Donaldson, 2008, p.110).

This definition covers the need for evaluation to have a number of potential outcomes (usually established with the aid of the program stakeholders), both quantitative and qualitative methodologies and it applies to programs in a number of environments.

The need for evaluation of a training program is not debated in the literature, but despite the tacit agreement that evaluation is essential, Brinkerhoff (2005) states that most organisations fail to carry out training evaluation. Reasons for this include the belief that evaluation is not necessary (Swanson, 2005) and fear that the results may reveal the training is not successful (Spitzer, 1999). This lack of implementation disregards the potential benefits to be gained. Grove and Ostroff (1991) suggest that evaluation leads to a revised program, a cost-benefit analysis and satisfying the need of the organisation to a return on investment. Campbell (1988) argues that evaluation helps to establish which training method is the most effective. Campbell suggests that what works in one organisation may not work in another. There is little evidence that evaluation benefits individuals; this is a secondary goal of a typical development program where the primary goal is benefits to the organisation achieved through changing the knowledge, skills or behaviour of the individual. However Stevens (1993) suggests that outputs of evaluation include benefits to organisations and individuals, and improving current programs. A more pragmatic suggestion is that while large organisations should be thorough and evaluate both the training program, the resultant skills and improvements across company performance, SMEs and organisations with limited HRM facilities, should carry out basic evaluation of the training itself (such as that evaluated by the first step in Kirkpatrick’s model) (Giangreco, Carugati & Sebastiano, 2010).

The first evaluation model to be widely adopted was Kirkpatrick’s (1959) four level evaluation model; summative in nature, it was designed to measure four potential outcomes of training including reaction (how participants feel about various aspects of the program), learning (knowledge, skills or attitudes improved or changed), behaviour (the extent to which on the job behaviour is changed) and results (indirect changes to the organisation) (Kirkpatrick, 1998). Some authors criticise Kirkpatrick’s four level evaluation model for its
isolation from the environment in which the evaluated program operates; segregation of the evaluation process from the organisational environment specifically ignores the politics of the organisation, ethical concerns, lack of consultation with stakeholders and reporting of the results are not considered in Kirkpatrick’s model (Preskill & Donaldson, 2008; Russ-Eft & Preskill, 2005; Wang & Spitzer, 2005). These omissions form threats to the evaluation process (Steensma & Groenveld, 2010). Despite this, Kirkpatrick’s model was easy to comprehend and implement and was widely adopted for five decades (Preskill & Donaldson, 2008). Bearing in mind the model originated in 1959, and the changes in organisational environments that have occurred since then, is Kirkpatrick’s model still appropriate? Major changes to the ways in which organisations employ and develop staff include the focus on who is responsible for an individual’s career, alongside the obsoleteness of the one company career. The individual is a much more autonomous player. However it has been argued that criticism of Kirkpatrick’s model is not relevant in the early 21st century (Giangreco et al., 2010), not least, they argue, because assessing how training contributes to company performance is more important that assessing the training itself.

There is no consistent approach to training evaluation. Different variables are measured, at different times relative to the training taking place. This makes comparison of training programs difficult and identification of best practice in evaluation techniques needs to consider many factors. Early models which emphasise the evaluation of the process are presented by Stufflebeam (1971), summarised by Brinkerhoff (1987) as being the first of two phases in the development of evaluation theory, the second phase being those models which evaluate the results of the training, including Hamblin (1974), Phillips (1983), and Mager (1984). It is no coincidence that references to those evaluation techniques that examine the results are dated later than evaluation techniques that examine the process; this is the trend of evaluation over the decades that evaluation was a fashionable area of research.

In debating the wisdom of evaluating the process or the results, Brinkerhoff (1987) argued that there are two reasons why evaluation must focus on the development program process: first, the pressure of accountability both within the organisation and externally, that data about development activities and transactions be transparent, and second, if a program is not achieving its goals, improvements cannot be made without first understanding the current process and where it might be failing.
Whereas Kirkpatrick’s model advocates measuring four potential outcomes of training and appears to disregard the initial reason for implementing the training, Brinkerhoff’s (1987) much later model incorporates six stages of which the first four relate to the design, implementation and completion of the program. Stages five and six relate to the use of the new knowledge and the benefits accruing to the organisation. Thus Brinkerhoff’s program evaluation model reflects the integration of both process and results of the program.

Owen and Rogers (1999) describe a model that recommends assessing a program at three stages to determine if it is effective; pre-program, during implementation and post completion. These stages of a program that are best suited to evaluation also require different evaluation strategies. For example where the goals of the program are being defined, the aim of the evaluation is to clarify what the goals are. This questions what activities should be implemented and how, but its interest in the process ends here. According to Owen and Rogers, subsequent evaluation stages use an interactive evaluation strategy to continuously monitor factors that might be indicative of the success of the program and finally an impact strategy to evaluate the level of attainment of the program objectives.

Although the trend in evaluation is towards evaluating the whole process from design to results, some still propose a process based approach. Lingham, Richley and Rezania (2006) suggest a double-loop evaluation. The training program is evaluated during its implementation by the participants and the training program is evaluated at its conclusion by organisational senior management. Although there is no measurement of the success of the program, the content is evaluated by different stakeholders and amendments proceed from the outcomes of this feedback.

Wang and Spitzer (2005) describe the development of evaluation theory as having a third phase after process and results oriented evaluation: development of a model that is research oriented and practice based, where organisations are implementing evaluation as a complete methodology. Models that embody this comprehensive approach include Brinkerhoff’s (2005) success case method in which all members of an organisation are influential in transferring training knowledge into organisational improvement; Preskill and Donaldson (2008) propose an evaluation which reflects the positive psychology movement
in which constructive behaviour such as creativity and performance are sought and maximised. Mattson (2005) proposes the Critical Outcome Technique (COT). Mattson first investigated the effect of evaluation on support for human resource development programs and found “…managers preferred concrete business results as opposed to anecdotal or story-telling approaches to program evaluation” (Mattson, 2005 p. 103). He then developed the COT in which outcomes measured are either business results or financial results. The COT requires five steps:

1. Determine the original intended outcomes of the program
2. Measure attainment of intended outcomes
3. Validate this measurement
4. Determine a performance value of each outcome

Russ-Eft and Preskill (2005) also note the preference of organisations to evaluate development interventions in terms of return on investment (ROI) and argue that this is an unrealistic expectation because linking some training outcomes to the financial success of an organisation is “…difficult if not impossible” (p.72). Within a systems framework for evaluation, which takes into account the external environment in conjunction with the organisation’s mission, vision and strategic plan, infrastructure, political context, stakeholders and evaluator’s characteristics, five evaluation steps are carried out: focussing, methodology, collecting data, analysing data and reporting results. Using this evaluation method in a case study, Russ-Eft and Preskill found issues that were hindering the successful completion of projects such as personnel changes within a project team, and were able to recommend changes that subsequently improved the ROI. For example, changing personnel within a project team hindered the successful completion of the project simultaneously with reduced ROI. When the organisation reduced project team size and supported more stable teams the result was successful project completion and increased ROI.

Although these later models and frameworks evaluate much more than the outcome of the classroom, and take into account varied factors, the measurement of the correct criteria is identified by Stevens (1993). He claims that one of the processes in any evaluation must be defining the criteria used to measure program success. Goldstein and Ford (2002) expand
upon the definition of appropriate criteria. In order to achieve internal validity, it is essential for the criteria that is selected to interpret the success of a development program to be directly and reliably related to the organisational objectives. Goldstein and Ford (2002) argue that the criteria should be related to objectives through accurate determination of the knowledge, skills and attributes required to achieve the desired outcomes of the program. In other words, the participant in a program acquires new knowledge, skills and attributes and the acquisition of these is measured through appropriate criteria. This enables acceptable measurement of the acquisition of the new skills, but not the transfer or application of these skills to the workplace; this is a limitation of some criteria, caused partly by the nature of the objectives of the training. Other limitations occur with selecting inappropriate criteria to measure. Goldstein and Ford (2002) describe defective criteria as either contaminated (including criteria that measure knowledge, skills and attributes not identified as objectives of the program) or as deficient (failing to measure knowledge skills and attributes identified by the needs assessment as indicative of program success). Perhaps this over-complicates the measurement of the presence of some desirable outcomes of development programs.

For example a common objective of training and development programs is increased levels of commitment from employees; several authors relate commitment to levels of staff turnover which can be measured through organisational records (Mathieu & Zajac, 1990), through employees’ intention to leave (Mathieu & Zajac, 1990; Sturges, Guest & Mackenzie Davey, 2000) or commitment (Arnold & Mackenzie Davey, 1999; Cook & Wall, 1980; Mowday, Porter & Steers, 1982). Brinkerhoff (1987) recommends asking at the very beginning of his program evaluation method if the criteria to measure success are available.

This review of literature on evaluating training and development has found ongoing debate as to the best evaluation technique; should the training itself be evaluated or should the outcome of the training be evaluated? The latter requires that a variable changes as a result of the training being implemented, and that that variable is identified, is found to be indicative of the initial desirable need, and an appropriate measurement tool is adopted. As the debate continues, it has become clear that whilst not many training programs are evaluated thoroughly, whatever evaluation is carried out should not be taken out of context. Rather than admonishing small organisations for inadequate evaluation, they should be applauded for implementing and evaluating any training at all. After all, as Giangreco et al.
(2010) point out, whilst evaluation should strive to supply the most complete picture, an incomplete picture is better than no picture at all.

### 2.4 Small and Medium Enterprises

#### 2.4.1 Definition

There are a variety of definitions of small or medium-sized enterprises (SMEs). The Bolton Committee (1971) decided that there were nine definitions of small depending on the industry concerned. The accepted European Union definition of micro-SME is an organisation comprising fewer than ten people (Commission of European Communities, 1996). For most reports published by the Australian Bureau of Statistics (ABS), small means fewer than 20 employees, and medium means between 20 and 99 employees. However for ABS construction industry reports these boundaries change and data are presented in categories represented by firms of fewer than five employees, between five and 19 employees, from 20 to 99 employees and firms employing 100 or more employees. This reflects the high proportion of construction industry personnel employed in firms of fewer than five people. For instance, in the 1996-97 survey of residential construction and trade firms, 182,000 of the 194,300 registered businesses employed fewer than five people (93%) (ABS, 1999). The current research, cited within the construction industry, will use the definition of SMEs within construction provided by the ABS.

#### 2.4.2 Barriers to training and development in SMEs

In the 21st century, small and medium organisations are reportedly facing additional challenges to those faced by larger organisations, such as limited financial resources, administrative burdens, the constant struggle to keep on top of ICT and difficulties finding qualified staff and providing them with training and education. The advent of the internet as added increased global competition to this list (European Union, 2009). Human resource management has not been recognised as the solution to these problems; indeed De Grip and Siegen (2009) find that formal HRM is less important to a small organisation than the personal relationship between the employer and employees. However whilst SMEs are dealing with these challenges, they are even less likely to spend time on HRM or related activities such as training and development. Human resource management in SMEs is
described as informal (De Grip & Sieben, 2009; Kotev and Folker, 2007) and less inclined to be innovative than large firms or firms that are seeking rapid growth (Barrett & Mayson, 2007). Where HRM is formalized in SMEs, it is likely to be restricted to basic continuing education and remuneration, neither of which are positively related to staff retention (Giauque, Resenterra & Siggen, 2010) or productivity (De Grip & Siegen, 2009).

The informal nature of HRM in SMEs is attributed to a lack of HR expertise and being ill-informed about potential benefits of formal HRM (De Grip & Siegen, 2009), limited financial resources and a greater emphasis on efficiency (Kotev & Folker, 2007). Similar factors are blamed for the lack of training and development undertaken by the owner of small businesses. Employers have identified training as costly (OECD, 2002) irrelevant, taking time away from the real work, and self-development is simply not necessary (Dewhurst, Dewhurst & Livesey, 2007). The OECD report also found employers to be uninformed (OECD, 2002) although no recommendation was made to reverse this situation. This is despite more than one author finding that ineffective management leading to the failure of small businesses (OECD, 2002; Walker, Redmond, Webster & Le Clus, 2007) although Walker et al. did note that SME owners are interested in skill development provided it enhances the business and is delivered at a convenient time.

Anecdotal and empirical barriers to employee development in SMEs are well documented. Barriers discussed frequently include the cost of training (Baker & Wooden, 1995; European Union, 2009; OECD, 2002; Skinner, Pownall & Cross, 2003), insufficient benefits (Hill & Stewart, 1999; Lussier & Bailey, 1999; Rauch & Frese, 2000; Skinner et al., 2003) and the demographic of employee not being suitable for training (Gallagher, 1990).

The cost of training or the overheads of employing a human resource manager are frequently too great for small firms (Skinner et al., 2003) although if a firm were really keen they could still practise informal training (Baker & Wooden, 1995) and document it. Cost is a factor offered as a barrier to training in SMES by a number of authors. In simple terms, the cost of training is relatively greater in small firms than in large firms. Baker and Wooden (1995) specifically indicate that cost considerations will cause small firms to favour informal training methods. In order to remain financially competitive, small firms may operate with smaller profit margins than larger enterprises; this then puts pressure on
employees to maximise productive time and consequently the time available for training is reduced (Skinner et al., 2003). Small firms prefer to employ individuals who already have the required skills and therefore training is not needed (Gallagher, 1991). Part time employees or females are regarded as high turnover staff and are not attractive training participants for SMEs (Gallagher, 1990).

Other barriers raised in the literature include the lack of obvious and immediate benefits (Lussier & Bailey, 1999; Skinner et al., 2003; Walker et al., 2007); a lack of specific off the shelf training packages, a lack of engagement with the training environment and no incentives (Skinner et al., 2003); dominance of reactive strategies, adverse economic conditions, locating relevant training, lack of a basis upon which to judge potential training programs (Matlay, 1999; Matlay & Hyland, 1997); uncertain return on investment (Hill & Stewart, 1999) and long lead time for return on investment (Rauch & Frese, 2000); operational approach to training (Cushion, 1996); entrepreneurial attitude (Hill & Stewart, 1999); low management commitment and lack of access to suitable training and resistance as training takes up productive time (Employment and Skills Formation Council, 1989; Walker et al., 2007). Any concentration of low skilled jobs and increased likelihood of business failure is a disincentive to invest in training and limits the use of advanced technology (Baker & Wooden, 1995).

In some industries, low rates of unionisation mean that the demand for training is lower (DWRSB, 1990). This is validated by Rigby (2004) who found that in Spain, as a result of a transient labour force, training activities were few and far between. Rigby reports that union involvement led to improved training in Spanish SMEs but within limited circumstances: training has been offered based only on supply, not demand, partly because SMEs have difficulty in identifying what their needs are and the groups of small companies which seek funding and run the training are deciding what programs shall be offered. Kennedy, Drago, Sloan and Wooden (1994) reported on the role of the union in providing training specifically in Australia. They established a positive relationship between investment in training and trade union involvement but only where the union was an active part of the workplace. The Construction Forestry Mining and Energy Union plays a significant role in the Australian construction industry, but this is limited to the welfare (including training) of tradespeople with an emphasis on apprenticeships and occupational health and safety, and is not aimed at graduate employees (CFMEU, 2009). SMEs are often
reluctant to directly employ tradespeople, as reflected by Baker and Woodens’ assertion that SMEs have a higher concentration of low skilled jobs (Baker & Wooden, 1995).

It is apparent that individuals responsible for implementing HRD programs are not well informed and it could be this lack of best practice documentation which is severely inhibiting the implementation of effective career development practices in Australia. If a small firm identifies a gap in the skill basis then the personal communication network (PCN) often comes into use to fill the gap (Skinner et al., 2003). A PCN satisfies the short term focus of the SME through being able to provide skills and knowledge when they are required to address skill deficiencies.

Skinner et al. (2003) argue that human resource development activities are inappropriate in SMEs because a program in a large organisation uses resources available to that organisation internally or through external training agencies. Such resources are not likely to be available to smaller organisations.

Gutteridge et al. (1993) cite the four most common reasons for not having a career development program as planning communication and attitudinal factors; organisational and systems factors (lack of organisational commitment - insufficient management support); implementation factors and additional factors such as lack of HR capability or interest in the public sector. In fact from a survey of 245 Australian organisations, 80% of respondents (Senior HR decision makers) agreed that career development disrupts an organisation (Rylatt, 1993).

With the economic rationalisation of the 1990s, many organisations down sized and it became apparent that it is no longer possible to expect to remain an employee of one organisation for the duration of a career (Bridges, 1995; Handy, 1989; Mirvis & Hall, 1994). Nor could organisations afford to run continuous professional development programs for their employees. Instead, the responsibility for development and career management began to fall upon the individual employee. There was an ongoing shift from organisational career management to career self-management (Hall & Mirvis, 1996). Investigate literature on sociology of professions where responsibility for training and development lays with the profession, not the employer (esp. where sole practitioner - gets training from profession). As the thesis will show later, in the construction industry there
are signs that large organisations are interested in retaining staff through economic downturns, suggesting a possible return to adoption of organisation career management.

2.4.3 Training and development practices in SMEs

Rather than concluding that SMEs simply do not implement training and development activities, more in-depth analysis from Smith and Hayton (1999) and Jones (2005) concluded that the size of the organisation affects the diversity and the volume of development carried out. However Smith, Oczkowski, Noble and Macklin (2003) found that size was not related to any training practices, with the exception of the existence of a training manager. Smith and Hayton found the main driver of training in SMEs was organisational change or the adoption of strategic management behaviours such as Total Quality Management. Indeed, Jones (2005) found where training does occur, the SME is in a position to grow.

Empirical data relating to training in SMEs in Australia is relatively old; the Employer Training and Expenditure Practices survey conducted in 2001-02 provides the most comprehensive information (ABS, 2003). This shows that 100% of large organisations (100 or more employees) provided some form of training, that is informal or formal, compared to 72.4% of organisations with less than five employees; a significant increase from 44.8% in 1997. Only 28.3% of SMEs provided any structured training, of which external workshops and lectures were the most frequently implemented form of training, in this way the organisation is able to reduce the financial burden - by paying only for what is used, whereas unstructured training was mostly on-the-job as the need arose. Tellingly, 27.6% of SMEs with fewer than five employees provided no training at all, compared to 0% of large organisations.

Small and medium enterprises are more likely to undertake training if the result of the exercise will satisfy an organisational need; Hill and Stewart (1999) suggest that human resource development operations in SMEs will be driven by business needs. Baker and Wooden (1995) indicate SMEs are likely to train in the fields of trades and sales, whilst large firms will train in the areas of management and computing. The TPS and TES found that in many SMEs there was a low need for skill – SMEs are production based and therefore have a high proportion of low skilled positions, hence there is less demand for
formal training (Baker & Wooden, 1995). Further, training needs in a small firm are usually determined autocratically by the manager who may not know or understand how to determine training needs (Baker & Wooden, 1995). Westhead and Storey (1996) state that a small firm is not just a scaled-down version of a large firm. Storey’s principal difference between large and small firms is the uncertainty experienced; internally in large firms through slow dissemination of information and inability of the senior manager to ensure his instructions are followed; externally in small firms as a result of a lack of power and influence in the market along with in many cases single customer reliance – hence the necessity for training in sales (1994; Westhead & Storey, 1996). This uncertainty in the small firm environment results in the firm only being able to operate in the short term, making few plans for the long term including future human resource needs. A successful small organisation will not remain small for long and the needs and training may become formalized over time (Tarabishy, 2000), although Mankin (2001) says that rather than the organisation changing and thus changing needs resulting in different training, human resource development is in itself a change agent. Hatcher (2000) blames the lack of HRD implementation on the inadequacy of HRD theory, which is a valid argument reflected in the ongoing debate around the gap between research and practice.

Rather than present a picture of doom and gloom for SMEs, there does exist some literature which demonstrates the areas in which SMEs have advantages over large organisations. One of these areas is the value of a learning organisation. An accepted definition of a learning organisation is one that is “skilled at creating, acquiring and transferring knowledge and at modifying its behaviour to reflect new knowledge and insights” (Garvin, 1993). Whilst this definition hints at the important role that training (and therefore HRD) has to play in a learning organisation culture, Watkins and Marsick identify seven actions found in learning organisations some of which are more explicit. For example, “create continuous learning opportunities”, “use leaders who support learning at the individual team and organisation levels” and “encourage collaboration and team learning” (Watkins & Marsick, 1997). These and other behaviours in learning organisations emphasise the need for knowledge to be shared across an organisation and this is where SMEs have an advantage over large organisations. Small organisations with fewer than 20 people tend to be more flexible, the employees have the necessary skills to fill more than one role, and they have the ability to adapt relatively quickly to changes in their environment and in customer demands (Aharoni, 1994). This flexibility inherent in the structure of SMEs also
facilitates knowledge to be shared with colleagues. Aharoni argues that the characteristics of competitive small organisations are similar to the culture in which a learning organisation can exist.

In addition to the structure of SMEs and learning organisations mirroring each other, the tendency of SMEs to prefer informal, ad hoc training also assists a learning culture where the learning process is integrated in the work tasks of employees. (Drummond & Stone, 2007). A learning culture has been found to have positive outcomes such as organisational commitment and career satisfaction (Joo & Shim, 2010) and knowledge acquisition and subsequent innovation performance (Wang, Wang & Horng, 2010). Since the ideal structure of learning organisations is similar to the typical structure of SMEs, and since learning is central to both learning organisations and to HRD (Stewart, 2005), then it might be said that most SMEs are actually implementing their own unique and informal form of HRD.

2.5 Graduate Development Programs in the Construction Industry

2.5.1 HRM in the construction industry

The construction industry comprises both unit production organisations and service organisations. Since the industrial revolution of the 19th century, buildings have become increasingly complex and require a great number of skills in their construction. It is this requirement for many skills that creates what are known as temporary multi-organisations (Shirazi, Langford & Rowlinson, 1996), reflecting a project organisation consisting of several organisations brought together by a contract. In addition to the difficulties of numerous organisations endeavouring to work as a project team with shared goals, they are often geographically situated remotely from the central office (Raiden & Dainty, 2006) which would house much of the project information and senior decision makers.

In the mid 1990s it was generally thought that the construction industry failed to keep up with modern human resource management trends (Druker, White, Hegewisch & Mayne, 1996) particularly one so reliant on labour resources. HRD techniques, in particular, lagged. Dainty, Bagilhole and Neale (2000) summarised the issues preventing the
construction industry from fully implementing HRD as: economic fluctuations not facilitating long term return on investment in HRD; issues associated with creating a unique product in situ, geographically dispersed and outside; and labour commonly recruited externally to the organisation, reducing the need for human resource management functions and delegating the role to relatively unqualified project managers. This is despite the industry being labour intensive; demand is high for both blue collar trades people and for white collar managers, since the skills required to assemble the components of a building are not the kind of skills a machine can be programmed to carry out.

Recent data is unavailable, but Bilbo, Fetters, Burt and Avant reported in 2000 that in the USA, there was a high demand for construction management graduates. They go on to find that the rate of recruitment was expected to maintain a steady increase between 1995 – 2005. However this study asked employers simply to assume a “steady growth” in the construction industry and the results may be over optimistic. Bodapati and Kay (1999) offer a rather more negative interpretation of data, noting the US Department of Commerce predicted “only” modest growth of 2% per year between 1996-2001. Although the industry is labour intensive, employing about 9% of the Australian workforce, it is heavily influenced by economic cycles (SkillsInfo, 2010) and it is reasonable to expect graduate recruitment to reflect industry downturns.

### 2.5.2 Training in the construction industry

Some aspects of training in the construction industry in Australia have been implemented by legislation rather than people understanding the benefits of continuous learning. Two areas that come under this category are registration and safety.

The construction industry in Australia is regulated so that “most” people who work in building are registered (Building Commission, 2010). To achieve registration an individual must have a minimum qualification and experience which allows them to apply for registration. Individuals may seek registration of different classes, from demolition to limited domestic construction to unlimited commercial construction. Once registered, the individual is legally permitted to submit plans to councils seeking approval to build. This individual is not required to attend continuing professional development and this is reflective of the attitude to training throughout the construction industry. Further, as the
Building Practitioners Board registers individuals, not companies, a construction organisation only needs to have one registered builder (of the appropriate class) in order to carry out the process of having plans approved and construction taking place. Although a minimum qualification is required for the registered individual, this does not apply to other organisation employees. Effectively, registration has resulted in the potential for small and large organisations to each employ only one qualified and registered builder and with no compulsory continuing professional development; however a minimum level of technical competence is achieved across the industry.

The only other legally required training that takes place is the safety induction that individuals are required to complete before working on a construction site; working may also include visiting or undertaking work experience. This course is managed by Worksafe, but is delivered by registered training organisations (RTOs) nationwide. It culminates in the successful completion of a module of study recognised by the National Training Information Service and the awarding of what is known in the construction industry as a Red Card which permits the individual access to construction sites. The construction industry has a culture that encourages safe work, at least partially a result of legislative changes making people responsible for safety around them rather than passing the responsibility to someone else. This culture, whatever the root cause, means that safety training is the most frequently implemented form of training in the industry.

However, for an industry that requires such a high proportion of human resources, the construction industry still implements mostly informal training. The literature reports that excuses for not implementing formal training include line managers being reluctant to allow their staff the necessary time away from work (Dainty et al., 2000), employees being viewed as a factor of production whose cost should be minimised (Drucker et al., 1996), the reduction in direct labour employed by large construction firms (Drucker et al., 1996) and the emphasis on productivity, not the people engaged (Dainty et al., 2000). The industry as a whole has a short term approach to management of employees. Mphake (1989) found only 17% of large construction companies have a formal management development policy.

This is not restricted to experienced management employees: construction companies have a particularly low graduate retention rate (Young, 1991). Conversely in their survey of UK construction employees, Dainty et al. (2000) found that participants in Graduate
Development Programs in the 20–26 age group were satisfied that their expectations were being met through structured progression. However during the most productive career phase, 27–44 year olds felt their needs were not being met, although this was apparently reconciled among the oldest age group (45+ years). Respondents indicated training and development was provided on an ad hoc basis and they are expected to be pro-active in seeking opportunities to enhance their own development.

It was predicted that employee development would see an increase in the 1990s: particularly through the decentralization of decisions regarding the training process and training expenditure to line managers (Drucker et al., 1996) and as a result of a skills shortage in the construction industry in the UK (Dainty et al., 2000). These issues might be responsible for the finding in the early 2000s that large organisations do have some long term HR planning activities (Raiden, Dainty & Neale 2004). Raiden et al. propose that the concept that the construction industry is not implementing human resource development is largely anecdotal and Raiden (unpublished PhD thesis, 2004) found that large construction organisations demonstrated significant commitment towards human resource development with the outcome of improved staff retention. Specifically, one large organisation practiced mentoring, job shadowing, induction programs, amongst other activities.

In Australia, the ABS conducted an Education and Training Experience survey in 2005 as part of a regular review every 4 years. This survey analyses data from individuals, not from organisations, and so it is not comparable with international data which counts each organisation as an individual unit. However it does reveal that amongst construction industry employees, training peaked in the 25–34 age group. There was an interesting drop in the number of training hours per course from 23.5 hours in 1997 to 14 hours in 2005. This is concurrent with an increase from 1997 to 2005 in total number of hours that training was delivered, from 3,553,200 in 1997 to 5,140,500 in 2005. Although initial data suggested a decrease in training, the figures actually suggest more people attending shorter courses or the same number of people attending more short courses. In 2005, of the 350,800 courses taken, 301,700 (86%) were in work time and 208,800 (59%) were organised and delivered externally to the organisation (ABS, 2005). This shows that external bodies are offering construction relevant courses and employers are encouraging their staff to undertake them. However the ABS data does not discriminate between large and small construction organisations. In Australia, ABS data from 1997 shows that 182,000
firms employing fewer than five people were registered in 1996 in the residential sector of the industry in Australia, equal to 93.6% of all firms registered in this category. Only 1200 firms employed more than 20 people. In the UK, it has been acknowledged that spending by small firms on training was reduced; construction SMEs continued to fail to train employees in both technical and generic skills (Department for Education and Employment, 2000).

The barriers to training that apply to generic SMEs are valid for construction specific SMEs: financial considerations and un-productive time are key issues preventing training and development. Packham, Miller, Thomas and Brooksbank (2005) reinforce the concept that small firms recruit to satisfy current needs rather than recruit to train for the future and found the same behaviour in construction SMEs. Packham et al. (2005) found that where small firms had intentions to train, the pressure of managing a small firm impeded this intention. Besides Packham et al., (whose research was not specifically on HRD in SMEs), the lack of literature on training and development specifically in small construction organisations is sadly lacking; a concern, given the high number of SMEs in the construction industry.

### 2.5.3 Graduate training in the construction industry.

Love et al. assert that the structure of, and global competitiveness found in the construction industry means that Australian construction organisations seek highly educated construction management graduates (Love, Haynes & Irani, 2001). If graduates are highly educated, then this should negate the need for further development instigated by the employer. However it is accepted that tertiary education can provide graduates with knowledge but is less able to provide the environment in which graduates acquire the skills required for construction project management (Davies, Csete & Poon, 1999; Love et al., 2001). This argument is substantiated by McLaughlin and Mills’ stand that the changing nature of construction would benefit from experiential learning and that this could be provided by dual-sector tertiary education (McLaughlin & Mills, 2010).

There is, however, no consistency across the literature regarding skills graduates should have and do have. An Australian survey found graduate problem solving and leadership
skills exceeded employer expectations (Love et al., 2001). In Hong Kong, employers were reported to be very happy with graduates’ listening skills, team co-operation and leadership (Davies et al., 1999). Conversely, time management, oral communication and interpersonal skills were found to be lacking in Australian graduates (Love et al., 2001) and leadership and professional judgement and ability to work in multinational teams was self-reported as weak amongst Hong Kong graduates (Davies et al., 1999).

An interesting area of contention is the ability of construction graduates to adapt to the work environment. Love et al. (2001) found Australian employers rated graduates as lacking in adaptability and they relate this response to the employers expectation of new graduates to work long hours and be able to deal with problems; this creates an image of the Australian construction industry as having a masculine culture, little sympathy and understanding of the needs of graduates as they transition from study to employment. This portrait is missing from Davies et al.’s interpretation of data from graduates who report that they feel they are lacking in adaptability (Davies et al., 1999). The employers who participated in the Hong Kong survey did not express that graduates were inflexible, suggesting that there are either different expectations of construction graduates and that the industry culture is less demanding of new graduates.

A further finding of the Hong Kong study is that graduates felt unable to work in multinational teams (Davies et al., 1999) which puts them at a disadvantage compare to the American construction graduate. International construction work was suggested by Bodapati and Kay (1999) as the solution for graduates to increase their experience during a slowing American economy. The National Research Council suggested in 1988 that construction graduates should be competent in understanding technical aspects, design, the relationship between technology and culture and foreign languages in order to compete globally, particularly in developing countries that, it was predicted, would require major infrastructure construction (Bodapati & Kay, 1999).

2.6 Conclusion

This chapter has reviewed the literature about HRD theory and evaluation, and its application in the construction industry. It has located graduate development programs within the context of human resource development. Organisations’ acceptance of HRD as a
necessity has been examined and it was found that when knowledge and skills began to be viewed as valuable assets, resource development became a fashionable benefit to offer employees. Graduate development programs serve a small, specific population but the design, practice and benefits are similar to generic development programs. Small and Medium Enterprises operate with different environmental criteria and restrictions, where the pressures of providing a competitive service result in less training and development activities being implemented. Training that does occur in SMEs largely occurs informally, on the job or, more recently, online. Construction SMEs are no different to generic SMEs; indeed these training behaviours are found more frequently as a large proportion of construction organisations are SMEs. Some large construction organisations have been documented as implementing formal GDPs but small organisations face intense competition, leaving little time or money for formal training.

The benefits of training and development have been identified and correct implementation of such activities is perceived to be advantageous to the organisation. The literature fails to indicate the uptake of GDPs or training and development across the construction industry, but having identified barriers to training and development in small organisations, it may be inferred that training and development in small construction organisations is less frequent than in large construction organisations and may also be more informal, ad hoc or only when legislation determines it to be necessary. Given the potential benefits of training and development and the inferred lack of training and development provided for graduates in small construction organisations, this research asks whether the graduate experiences offered by small construction organisations are as successful as graduate development programs offered by large construction organisations? The method which will be used to answer this question and justification of the chosen research technique will be presented in the next chapter. The population and the instrument used to define success will be described and the process of collecting data explained.

Some of the literature in this chapter may be considered dated; however in some cases it is considered sufficiently informative in the development of the research, that its inclusion is important. For example, the development of graduate development program design and evaluation is not a new area of research; the basic principles underpinning GDP evaluation were explored at length from the late 1980s. Further, interest in training in Australian industries was not sufficient to warrant expansive data collection, particularly that enabling
industry specific results to be available. This in itself highlights the need for research in graduate training in the Australian construction industry to be undertaken. Even the recent resurgence of Australian Federal Government funding for training has focused on individuals with few if any skills, the objective of which has been increasing successful long term employment. This has not required data collection from organisations currently employing staff with a tertiary qualification. Those with a qualification and a job do not appear to be of interest. Given the lack of recent literature on graduate development, this research argues that what knowledge is available should be included, and that this justifies the area being investigated.

This chapter has begun to respond to RQ1 “What graduate training and development activities are implemented by construction organisations?” by presenting currently documented knowledge. The method by which this question, and RQ3 “What is the intended outcome of the graduate training and development activities implemented by construction organisations?” is answered will be further explored in the following chapter.
Chapter 3   Methodology

3.1 Introduction
The previous chapter established current knowledge in the field of training and development as an element of human resource development. The specific characteristics of SMEs and the construction industry were examined. The research question was derived from this review of literature and is restated here:

Are graduate development programs as successful as informal training activities offered by construction organisations?

The subsidiary research questions presented in Chapter 1 provide the basis for exploring the concept of “success” in relation to the desirable outcome(s) of graduate training and development in the construction industry.

RQ1. What graduate training and development activities are implemented by construction organisations?
RQ2. What training and development activities are undertaken by graduates in construction organisations?
RQ3. What is the intended outcome of the training and development activities implemented?
RQ4. Is the intended outcome achieved?

This chapter will map how the subsidiary questions shape the research process which will lead to a definition of success. Once success has been defined, the research can then proceed with measuring the defined variable or variables. The research has been arranged in two pragmatic phases: the first phase aims to define success in terms of one or more variables that, to the construction organisation, are a desirable outcome of training and development activities. A second phase is then required to measure the strength of this outcome and to establish a possible relationship between the outcome and the implementation of training and development activities. This two phase method is known as sequential mixed methods research.
This chapter draws upon work undertaken on program evaluation, and subsequently shows similarities between sequential mixed methods and program evaluation. The compatibility of sequential mixed methods, program evaluation and exploratory research is discussed. Since the research activity itself is then divided into two phases, this chapter only discusses the holistic principles of the methodology adopted; it does not attempt to define the research design conducted for Phase 1 of the research, this is dealt with in Chapter 4.

3.2 Research design

The literature review of the previous chapter explored the principles of program evaluation and the steps usually incorporated into an evaluation. Trochim (2006) stated that each step of program evaluation may use legitimately a different technique since program evaluation techniques are generally compatible. Many authors describe the process of designing a research methodology as unique to the problem being investigated (eg. Denscombe, 1998; Strauss, 1987; Trochim, 2006).

According to Trochim (2006), good research design should have five criteria:

1. Theory-Grounded. Good research strategies reflect the theories which are being investigated.
2. Situational. Good research designs reflect the settings of the investigation.
3. Feasible. Good designs can be implemented. The sequence and timing of events are carefully thought out. Potential problems in measurement, adherence to assignment, database construction and the like, are anticipated.
4. Redundant. Good research designs have some flexibility built into them.
5. Efficient. Good designs strike a balance between redundancy and the tendency to overdesign.

Taking these criteria into account, research designs should be individually tailored (Trochim, 2006). Research in the field of construction management acknowledges the same principles; Kumaraswamy, Chan, Dissanayaka and Yogeswaran (1997) note that a methodology should be influenced by contours of the data domain; capacities, limitations and resources of the researcher; envisaged outputs and presentation format.
3.3 Program Evaluation

Programs are carried out in a diverse range of environments and with differing aims, content and delivery. At the very least, if the same program is delivered twice, the recipients will be different. It is unlikely therefore that one program evaluation method will be the same as another. This is also true for the data collected as part of the evaluation process. Some data will be numerical, such as frequencies or summative and formative assessment results. Other data may be textual, verbal, graphic or observed. The former is known as quantitative data, the latter as qualitative. Even though Holliday recommends reading the distinctions between qualitative and quantitative data and analysis with caution since “Qualitative research will always involve quantitative elements and vice versa” (2007, p.2) basic distinctions between quantitative and qualitative data and analysis exist.

Quantitative data lends itself to statistical analysis which, when handled correctly, can produce results which are valid and reliable. Statistical significance can be used to predict with a set degree of confidence that a similar result would be achieved again in future research and that the result has not been obtained simply by chance. At the beginning of the 21st century, effect size was introduced in psychological fields to establish, where a relationship exists, the strength of the influence of one variable over another. Where samples are particularly large, quantitative data facilitates quicker analysis than qualitative data. But whilst analysis is conducted and results are produced in a short space of time, the occurrence of any relationships revealed are limited to the point in time at which the data was collected. However this suits research which aims to test a theory that has been proposed previously.

Statistical analysis can have two strategies: descriptive and deductive results. Typically, descriptive analysis is a useful precursor to other analyses in order to give a picture of characteristics of the sample. Deductive analysis predicts what will happen in the future, by showing where relationships and patterns exist which can be used to infer future events. In this respect, quantitative data “helps in making judgements when there is insufficient information to be certain of what will happen” (Bryars, 1983, p. intro). Care must be taken though, to avoid attributing cause to statistically significant results; although a relationship may exist, the direction of influence between the variables should not be assumed but may be tested.
Qualitative data is suitable where variables have not yet been identified or a theory not yet built (Morrow, 2007). Data is usually textual and is collected in the form of open (structured, unstructured or semi-structured) interviews. Other forms of qualitative data include journals, stories, observation, pictorial art work or photos or videos. A mix of data forms can be useful – for example, during an interview the respondent may answer the question whilst displaying body language that contradicts the spoken response. As the data provided is rich, subsequent analysis can be deeper. However analysis of emotional (affective) data brings potential problems in subjective interpretation: one researcher may not infer the same meaning as another researcher from the same data, thus posing a potential threat to reliability. While this may seem like a disadvantage, rather than concluding the problem necessitates reduction, Holliday (2007) views it as an integral part of research ideology: “…when the researcher approaches the new culture, she brings with her residues of her own cultural background” (Holliday, 2007, p. 13). A romantic notion of this culture as a form of discourse exists, where discourse is defined not as the ability to reason through conversation (Collins, 1994) but as the process of an individual making common sense meaning from their experiences (Lankshear, Gee, Knobel & Searle, 1997).

Qualitative research can use a number of strategies of enquiry such as ethnography, grounded theory and action research - these are not mutually exclusive (Holliday, 2007). A single research study can be ethnographic within a case study. Holliday states that each strategy can use different methods of data collection and analysis such as interviewing, observation and content analysis; Mayring (2000) describes combining qualitative content analysis with other qualitative techniques. Hsieh and Shannon (2005) describe grounded theory as an analytical approach which goes “beyond content analysis to develop theory” (p.1281). It is a reasonable conclusion that a strategy could indeed go beyond basic analysis to reveal a theory and hence grounded theory is indeed a deeper analysis process than simple content analysis.

Content analysis assumes that people have beliefs or opinions about something, and that these can be reliably inferred from analysis of what they say (Wilkinson, 2008). Therefore an aim of content analysis is to identify participants’ beliefs about something. Content analysis involves categorising what people have said into collective and coherent groups of opinions; it can be very systematic, in fact Hsieh and Shannon pointed out that there was a phase where it was fashionable to reduce text to codes, categories and frequencies that
could then be analysed using statistics (Hseih & Shannon, 2005). Categories themselves come from the data itself (as in grounded theory) or from pre-conceived ideas that the researcher has (this is known as a top down approach) (Wilkinson, 2008). However Weber (1990) argues that content analysis should go beyond counting the occurrence of words, to examining language and grouping it into categories which represent similar meanings. Hseih and Shannon (2005) describe three forms of content analysis: conventional, directed and summative. The three can be distinguished by their sources. Conventional content analysis begins with no pre-determined theory or literature and the aim is to describe a new theory. Directed content analysis is more deductive; it validates a theory and may extend it. The summative content analysis process begins with counting the occurrence of a word and then attempts to understand the meaning of the word through latent content analysis.

There are disadvantages to content analysis such as loss of detail, the loss of the “sense of individual participants” (Wilkinson, 2008, p. 201) and some coding problems that occur when trying to synthesize many quotes into similar meanings. However these problems would be much greater if the qualitative data were being collected from many individuals. In the current research these problems are less likely to occur because the individuals are being asked for the reason behind implementing training and development activities as the organisation would express, so there is no loss of personality. Also, a small sample is less likely to be forced into category groups; fewer responses are easier to interpret than many.

Research in the construction industry does not have a unique approach to methodologies, instead borrowing conceptual frameworks from other disciplines such as natural science, social science, engineering and management (Fellows & Liu, 2003). The process and the end product of the process might be tangible and lend itself to quantitative analysis. But the industry is (and is likely to remain) labour intensive, requiring managerial, social science and psychological knowledge and skills. Since much research is about the efficiency with which construction takes place, and intangible human qualities have such a strong impact on managerial and therefore construction project efficiency, qualitative research methods are arguably as appropriate as quantitative, given the correct context for the investigation.

3.3.1 Application of program evaluation to the current research

Within a typical program evaluation method several stages occur. As described in the literature review, evaluation of a program can focus on the process of designing and
implementing the program, or on the outcomes of a program, or on both process and outcomes. One example of a program evaluation model is propose by Stufflebeam (2000b) and includes four stages:

1. Context: which asks the intended outcome of the program?
2. Input: identifies content strategies from best practice
3. Process Evaluation: determine whether or not activities are being implemented as intended
4. Product Evaluation: determine whether or not the program is achieving intended outcomes.

This research has proposed four minor research questions which have been designed to both direct the research, and to provide an answer to the main question. The four research questions elegantly reflect Stufflebeam’s four stages, as shown in Table 3.1.

RQ1 and RQ3 provide the context in which the graduate development program takes place. The findings relating to RQ1 will enable the training and development actions implemented by construction organisations to be compared and the most frequently implemented activities can be identified. It is expected that the research will seek to highlight any relationships between individual training and development activities, and subsequent achievement of desirable outcomes.

RQ2 aims to confirm the data provided by the organisations during the face to face interviews relating to what training and development activities are implemented. Stufflebeam describes this stage as determining that activities are being implemented by the organisation as they were intended to be implemented. RQ4 follows on from RQ2, asking if the outcomes identified in RQ2 have been achieved. Logically, RQ2 needs a solution before RQ4 can be investigated, since product evaluation requires an appropriate evaluation tool to be identified or created. For example, if the desirable outcome identified by RQ2 is maximising skills, then the skill in question should be defined, prior to a tool that measures
### Table 3.1

**Mapping of Stufflebeam’s CIPP method to the research questions.**

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Stufflebeam’s Program Evaluation Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQ1. What graduate training and development activities are implemented by...</td>
<td>Context Evaluate context in which the program exists. Evaluate the objectives of the program. Determine appropriate performance indicators.</td>
</tr>
<tr>
<td>RQ3. What is the intended outcome of the training and development activities implemented?</td>
<td>Input Comparison of strategies with best practice.</td>
</tr>
<tr>
<td>Not applicable to this research; the aim of this research is to establish the relationship between current practice and outcomes in the construction industry, not to compare theory with practice.</td>
<td></td>
</tr>
<tr>
<td>RQ2. What training and development activities are undertaken by graduates in construction organisations?</td>
<td>Process Evaluation Determine that activities are being implemented as intended.</td>
</tr>
<tr>
<td>RQ4. Is the intended outcome achieved?</td>
<td>Product Evaluation Determine that program is achieving intended outcomes.</td>
</tr>
</tbody>
</table>
that specific skill being designed. Hence the research questions have been shown to reflect the CIPP program evaluation model.

Tashakkori and Creswell (2008) acknowledge the link between program evaluation and sequential mixed methods research in their editorial on the development of mixed methods as a methodology. They state that whilst some disciplines are using mixed methods in parallel with other disciplines, “…program evaluators have probably been ahead of the others in effectively integrating qualitative and quantitative methods” (p. 5).

The flexible definition of a program enables the CIPP model to be proposed as an appropriate tool for evaluating the success of both informal training, as well as a formal development program. For example, Stake (1973) defines both nationally implemented or (in the education field) a small class field trip as programs. Royse, Thyer and Padgett, are more precise, defining a program as a series of interventions that is expected to have an effect (Royse et al., 2010). They exclude random actions from the definition of programs; the current research suggests that although informal training might appear to be random actions, training and development activities do occur in series and do have an expected outcome. It may also be suggested that each training or development activity is an intervention which is expected to have an impact. Whilst informal training and development activities differ from a formal graduate development program in that the latter are a planned and documented series of activities, both informal training and development activities and a formal development program share the same elements necessary to be evaluated by recognised evaluation techniques.

3.4 Sequential Mixed Methods Framework

This research will use the taxonomy development model of exploratory sequential mixed methods. Mixed methods research understands that quantitative and qualitative research, when combined, allow a better understanding of the problem than quantitative or qualitative approaches alone (Creswell & Plano Clark, 2007). A mixed method allows both inductive and deductive investigation to take place in the same project. It should be noted that mixed methods design incorporates both sequential and concurrent data collection. A theme and an
advantage throughout concurrent designs is the ability to see the context from a variety of perspectives; triangulation is possible. Sequential designs, on the other hand, use analysis of one form of data to inform the collection of the second form of data. In any mixed methods design, data may be combined by embedding, merging or connecting. Connected data arises when the research process is sequential, where one form of data informs and supports a subsequent phase or phases, as demonstrated by Myers and Oetzel (2003) in their investigation of organisational assimilation. Phase one of Myers and Oetzel’s study comprised qualitative exploration in order to build a measurement tool, phase two consisted of the administration and testing of the tool. The process of that study is graphically represented by Creswell and Plano Clark (2007) in Fig. 3.1. A similar model is advocated by Morgan (1998) in which the logical order of this research is a qualitative study that will inform a small quantitative study. This second study or phase in turn should provide evidence that supports the initial qualitative findings.

An advantage of using the mixed methods approach is the flexibility afforded to the researcher to carry out whatever data collection and analysis best suits the research question or problem. This is characteristic of the pragmatism paradigm which accommodates singular or multiple realities, is extremely practical in the choice of data collection technique, allows the research to move between unbiased and acknowledged bias and the uses both quantitative and qualitative data (Creswell & Plano Clark, 2007).

The underlying focus of the pragmatism paradigm is the outcome of the research, not the adherence of the method to a particular world view. The flexibility of this paradigm facilitates adoption of elements of other paradigms, since the holistic sense to pragmatism is to do what best fits the research. Morrow (2007) argued that expecting a research project to fit within the boundaries of a single paradigm would be to oversimplify the beliefs, and that paradigms can be “crossed” (Morrow, 2007, p.214) if determined appropriate by the research question and emerging data. Following Morrow’s argument and the principles of the pragmatic paradigm, the current research is underpinned by pragmatism whilst recognising the values of postpositivism and constructivism.
Figure 3.1
Graphical representation of mixed methods research processes adopted by Myers and Oetzel (2003) (Adapted from Creswell & Plano Clark, 2007)

Phase One

Qual data collection → Qual data analysis → Qual findings

Phase Two

Develop Instrument → QUAN data collected → QUAN data analysis → Overall results and interpretation
Constructivism believes that there are as many realities as there are individuals (Creswell & Plano Clark, 2007; Morrow, 2007). However the research accepts that when grouped according to demographics, some common cultural elements may occur. Therefore when investigating the success of training and development activities for graduates in the construction industry, there may be some shared behavioural responses to situations. Hence the research adopts multiple and singular realities, as described by the ontology of pragmatism (Creswell & Plano Clark, 2007).

The method of data collection used includes both closeness to the participant brought about by visits to collect data at the participants’ work locations (a process of constructivism), and objectivity as a result of the interviews collecting quantitative information regarding what type of training and development activities are implemented and how frequently. These events are intangible but recordable and therefore objective – they either occurred, or they did not. This last objectivity is strongly related to postpositivism (Guba & Lincoln, 1994) in which researchers are impartial (Creswell & Plano Clark, 2007). Again, the pragmatic paradigm expects a mix of epistemologies to be adopted.

Despite approaching the research objectively, it is acknowledged that experience as a graduate in the construction industry may influence interpretation of the early qualitative data to be collected. However this influence is more likely to enable comprehension of the qualitative data and less likely to distort the data, as Loosemore and Tan (2000) noted that one of the most likely causes of data distortion would arise when the researcher and the participant come from distinctly different occupational groups within the construction industry. The expectation is that bias may occur only during first phase of the research when qualitative data is collected and this should even be embraced within the constructivist paradigm (Morrow, 2007). The second phase is predominantly quantitative and is less facilitative of subjective interpretation. This again is supported and accepted by the pragmatic paradigm.

Finally, the methodology adopted is distinctly pragmatic with the focus on choice of method which is best suited to answering the research question. In defining the term “success” in the research question, individual representatives expressed openly the aim of the training and development activities implemented in their organisations. This qualitative data may extend
from one sentence to several paragraphs; analysis of single sentences may not provide the rich, in-depth data normally associated with qualitative data (Morse & Richards, 2002) but it still provides greater context than numbers alone when resolving the research problem and hence meets the criteria for mixed methods research (Creswell & Plano Clark, 2007).

The link between pragmatism and mixed methods is formally recognized by Morgan (2007) and by Tashakkori and Teddlie (2003). Morgan describes the pragmatic approach as supportive of using qualitative and quantitative methods, and also approves of the way this paradigm focuses on the methodological concerns instead of metaphysical concerns.

Since the current research does not yet know what the objectives are of the graduate development programs or informal graduate training and development activities implemented by construction organisations, the research further refines the method and adopts a sequential exploratory mixed methods design. In sequential exploratory mixed methods, the emphasis is on the qualitative first phase whose findings are tested in the second phase (Hesse-Biber, 2010); this process can be iterative. It embeds the characteristics of exploratory research within the sequential technique so that unknown variables are both defined (exploratory) and then tested by a hypothesis and predicted outcomes (confirmed) (Stebbins, 2001).

Strengths of sequential exploratory mixed methods are described by Creswell and Plano Clark (2007) as straightforward to design, implement and report, and the inclusion of a quantitative element makes qualitative inclusion more acceptable to quantitative biased audiences. Hanson, Plano Clark, Petska, Creswell and Creswell (2005) suggest that such a design is ideal when the variables to be investigated are not known and where elaboration of findings is required. Weaknesses of sequential exploratory design are that it requires considerable time to implement, and analysis of the qualitative data must conclude with findings conducive to subsequent stages. Analysis options include using themes or subthemes for taxonomy development. Hanson et al. also indicate that qualitative data precedes quantitative, and that the qualitative data is given greater priority.
3.4.1 Application of sequential exploratory mixed methods to the current research

Whilst the literature presents evidence of a strong relationship between program evaluation and the sequential mixed methods framework, it cannot be assumed that the sequential mixed methods discussed is appropriate for the research being undertaken here. In order to confirm the appropriateness, Table 3.2 maps Stufflebeam’s CIPP program evaluation process to the research questions (as did Table 3.1) and also maps the questions and the program evaluation process to the sequential mixed methods phases proposed. This table shows the adoption of two research phases: Phase 1 uses a qualitative methodology and involves the interviewing of construction organisations to establish

- what training and development activities are implemented for graduates, and
- the desirable outcome of these activities.

A key outcome of this phase will be the definition of success in terms of dependent variables and ability to select an appropriate tool to measure achievement of these variables. It is recognized that one or more dependent variable is possible, but the research will maintain an open mind during this exploratory phase of the process. McNabb defines Phase 1 as the “exploration for preliminary identification of potential variables” (McNabb, 2004). Research hypotheses can be constructed at the conclusion of Phase 1.

The second phase will involve a quantitative methodology. The second stage of investigation requires quantitative data collection from different respondents who are determined by the original theory and thus theoretical sampling is carried out. This is reflected in the method of Phase 2 which is interviewing the graduate employees within the same Phase 1 organisations to establish what training and development activities are undertaken, confirm implementation of the activities initially described by the organisations, and to measure the presence of the intended outcome. The data collected at this phase will enable any significant relationship between training and development activities and the achievement of the intended outcome to be revealed.

The use of multiple phases of an exploratory research project as a way of developing a theory which is grounded in the data is supported by Oliver (2004). Oliver proposes that an initial problem will stimulate research from which a theme is identified, and is identified as having potential for further investigation.
Table 3.2

Mapping of Stufflebeam’s CIPP methodology, the research questions and phases of sequential mixed methods framework.

<table>
<thead>
<tr>
<th>Research questions</th>
<th>Stufflebeam’s Program Evaluation Stage</th>
<th>Research method adopted</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQ1. What graduate training and development activities are implemented by construction organisations?</td>
<td>Context</td>
<td>Phase 1: Interview construction organisations to obtain qualitative data on activities implemented and intended outcomes.</td>
</tr>
<tr>
<td>RQ3. What is the intended outcome of the graduate training and development activities implemented?</td>
<td>Input</td>
<td>Literature review to determine performance indicator instrument.</td>
</tr>
<tr>
<td>Labelling the activities as “best practice” or not, will not affect the outcome of the activities implemented.</td>
<td>Comparison of strategies with best practice.</td>
<td></td>
</tr>
<tr>
<td>RQ2. What graduate training and development activities are undertaken?</td>
<td>Process Evaluation</td>
<td>Phase 2: Interview graduates to confirm activities implemented and to measure performance criteria.</td>
</tr>
<tr>
<td>RQ4. Is the intended outcome achieved?</td>
<td>Product Evaluation</td>
<td></td>
</tr>
</tbody>
</table>

- **Context**: Evaluate context in which the program exists. Evaluate the objectives of the program. Determine appropriate performance indicators.
- **Input**: Comparison of strategies with best practice.
- **Process Evaluation**: Determine that activities are being implemented as intended.
- **Product Evaluation**: Determine that program is achieving intended outcomes.
Exploratory research here: why is it appropriate? What characterises exploratory research?

Map the three designs: program evaluation, exploratory and mixed methods.

1. Program evaluation
2. Mixed methods
3. Exploratory research
4. Framework (para

Refering back to Trochim’s criteria (2006), it is possible to demonstrate that the research design meets his suggested standards:

1. The theory being investigated is that one experience is no better than the other in terms of “success”. The research design reflects the need to define “success” and then to compare the two experiences according to program evaluation theory.
2. The research process takes place within the environmental and social context under evaluation.
3. The use of mixed methods research to support program evaluation is easily facilitated in the construction setting; the research question is clear.
4. Data collection is proposed from multiple sources which will ensure credibility of data.

### 3.5 Conclusion

This chapter reviewed the appropriate use of quantitative and qualitative data. Program evaluation has been elected as the most appropriate methodology. A sequential exploratory mixed methods approach to the research is recommended, particularly for research which has the core aim of program evaluation; the research questions have been found to suit both program evaluation and sequential exploratory mixed methods. Within this methodology, the pragmatic paradigm is adopted as this best suits the need of the research to remain flexible with regard to the source of the data (individuals and organisations who should be treated as individuals yet grouped according to responses), the nature of the data (both quantitative and subjective recollection of events in qualitative form) and the interpretation of the data (taking into account and accepting researcher influence and bias without promoting it). Thus the research is able to design and adopt a method that is suited specifically to the subject under investigation, rather than fit poorly into a method that does not take into consideration the
environmental factors within which the research is being conducted. Characteristics specific
to the method adopted for this research include the division of the research into two phases,
the first of which (Phase 1) will be qualitative and theory building, which will be followed in
Phase 2 by testing of the theory through analysis of quantitative data.

The next chapter describes in detail the method specific to Phase 1. In particular, the steps
associated with program evaluation, collection of qualitative data and how the research will
address associated issues with conducting interviews, reliability and validity. The
measurement tool will be presented.
Chapter 4  Phase One Method

4.1 Introduction

The research question evaluates the success of formal and informal construction graduate training and development experiences. In some large construction organisations this experience is dictated by a formal graduate development program and so program evaluation methodology is a fundamental component of the adopted method, as was explored in the previous chapter. In small organisations training and development may not be implemented or formally recorded. However the flexibility of program evaluation to be applied to both formal and informal training programs means the research can collect and analyse data from both categories of organisations using the same tool, as recommended by Trochim (2006). The remainder of this chapter details the processes of research which constitute Phase 1.

4.2 Reliability and Validity

In qualitative research, the need for validity, reliability and generality has been the subject of debate, particularly their appropriateness in the qualitative paradigm as opposed to quantitative paradigm. Kvale (1995) writes that validity, reliability and generality have “attained the status of a scientific holy trinity” (p.20). Yardley (2008) explains why these terms are inappropriate for qualitative research: for example, where quantitative research relies upon the elimination of error caused by the influence of the researcher, qualitative research accepts this influence and works with it. A further argument is that quantitative research aims for reliability and the ability to apply the observation to the whole population, whereas qualitative research investigates and values the effects of context and individual differences (Yardley, 2008). But Tobin and Begley (2004) say that if validity and reliability are rejected, then the basic concept of rigour (ie. integrity and competency, from Aroni, Goeman, Stewart, Swayer, Abramson & Thein, 1999) is also rejected. Yardley (2008) instead defines validity as “the degree to which it is accepted as sound, legitimate and authoritative” (p.235) and goes on to state that valid findings are regarded as “trustworthy and useful” (p.235). Yardley proposes five methods for enhancing the validity of qualitative research:
triangulation, participant feedback, comparing researcher’s coding, disconfirming case analysis and establishing a paper trail. These methods should enable the following four criteria of valid qualitative research to be met:

1. sensitivity to context,
2. commitment and rigour,
3. coherence and transparency and
4. impact and importance (Yardley, 2008).

Elliott, Fischer and Rennie (1999) concur, proposing behaviour such as coherence of the story, credibility checks through feedback, triangulation and verification to enhance validity.

The current research augments validity through adopting some of these recommendations. The proposed methodology gathers data from two sources, the employing organisation and the graduate. This provides the opportunity to establish the reliability of data from one source against the other. Specifically, the organisations will be asked what training and development activities are implemented, and the graduates will be asked what training and development activities they have received. It is accepted that some graduates may not have been employed for sufficient time to participate in, or be invited or instructed to participate in all training activities. However the research will look for some affinity between organisation and graduate.

The research method also allows for organisations to comment on the results of Phase 1 before Phase 2 is carried out. The organisations will be approached for permission to collect data from their graduate employees. During this application key themes that arise from the data gathered from organisations during Phase 1 will be presented. This will allow an informal critique of the results to occur and disagreements or errors can be discussed and taken into account before Phase 2.

The structure of the thesis itself is critical in conveying the logical approach used to answer the research question and hence demonstrating the fourth criteria: sensitivity to context. The chronological structure used demonstrates results were not predicted, and that the method adopted in Phase 2 is dependent upon the results of Phase 1. Sensitivity is also demonstrated by appropriate engagement of the participant; the interview technique proposed by Cavana, Delahaye and Sekaran (2001) facilitates such sensitivity.
4.3 Materials

Phase 1 of the research requires data to be collected from organisations; this is carried out via a semi-structured interview. Phase 1 has two aims: one, to establish what training and development activities (if any) occur; and two, to establish why these activities are implemented, to determine if any training or development strategy is successful. When considering the first aim of establishing what training and development activities are implemented, two approaches are possible: an unstructured interview in which the respondent is asked to list the training activities that take place. This approach risks the respondent only remembering some training activities – perhaps the ones they were involved in, or the most recently implemented ones. The second approach avoids selective recall by providing a list of activities and asking the respondent to indicate which of those items on the list have been implemented. The risk with this approach is that the organisation may be innovative and have implemented activities not on the list which are not revealed. To reduce the risks of the second approach, a solution is to create an interview which is semi-structured and includes a list of training and development activities to be used as a prompt. This list is then supplemented with open questions which allow the respondent to describe in detail what training occurs, without the restrictions of selecting the most appropriate predetermined response. A posted questionnaire is less likely to achieve the depth of information that an interview can. Face to face communication allows the interviewer to probe (Fellows & Liu, 2003) and this will assist in achieving the second aim of Phase 1; during the interview the interviewer can seek clarification or expansion from the respondent when describing the objective of any training that is implemented.

To build the interview questions, a list of training activities is required. Gutteridge et al. (1993) carried out an international survey in 1990 which was an integration of a 1978 American study to establish the nature and prevalence of training practices (Walker & Gutteridge, 1979) and a 1983 study by Gutteridge and Otte in which the content of career development programs was investigated. To apply further logic to the order of the training activities prompted, Gutteridge et al. categorised the activities according to the six areas of practices defined earlier by Gutteridge (1987): employee self-assessment tools, organisational potential assessment processes, internal labour-market information exchanges, counselling and career discussions, job matching systems and development programs (Gutteridge et al., 1993, p.4).
In addition to the list of activities developed by Gutteridge et al. (1993), the interview developed for the current research includes demographic questions to categorise the organisations into small, medium and large by number of employees following ABS categories (ABS, 1999). The three sections of the developed interview correspond with the phases of an interview proposed by Cavana, Delahaye and Sekaran (2001) as shown by the Fig. 4.1. Canava et al. (2001) suggest that the rituals, reasons and rules establish communication between the respondent and the interviewer. This element of interviews also facilitates sensitivity required to provide validity to the research (Yardley, 2008). In the current research, the demographic questions are Activity No. 1 and serve the purpose of allowing the respondent to become comfortable providing answers. These questions should be easy to answer.

The list of training activities constitutes Activity no. 2 and requires more detailed consideration. Finally Activity No. 3 seeks any additional activities through open questions which provide the opportunity to probe and collect quality data but which also require the most introspective searching. Cavana et al. (2001) claim that it is the responsibility of the interviewer to prepare the respondent for the end of the interview; and say that a respondent should not be allowed to return to the world outside of the interview without having their awareness replaced.

The interview design for the current research was collated and piloted and no changes were required. The complete interview format can be found in Appendix A.
4.4 Ethics

Following design and piloting of the instrument which was used to guide the interviews with the organisations, ethics approval was sought for the process of collecting data from organisations. The research was classified as having minimal ethical risks. The ethics application detailed that individual respondents would remain confidential, and that the primary purpose of the interviews was to gather objective data about what training activities are implemented, this would be supported by data regarding the purpose of these activities. The purpose of the activities may be documented in which case it would also be objective data, or it may be the respondent’s perception of the purpose of the training activities. The interview would not seek any subjective other opinions which might be detrimental to the individual, although these may be volunteered. A plain language statement was also sent prior to individuals confirming their participation with a consent form. The ethics process was completed with approval to conduct Phase 1 of the research being given by RMIT University.
4.5 Participants

In Victoria, construction contractors wishing to undertake construction of various buildings are required to register an individual with the Building Commission. Without registration, plans cannot be submitted to local councils for approval. Builders can register under several categories, from basic carpentry to unlimited commercial work. Registration provides a technically competent benchmark across the industry. However construction contractors only need one registered builder in order to satisfy authorities and continuing professional development is voluntary, so registration does not reflect any level of training or development within an organisation. Thus using the database of registered builders provides an unbiased sample selection tool; there is no guarantee that a registered builder undertakes training or development or provides it for their employees. The database of registered builders is publicly available on the internet (Building Commission, 2010). This database was used to provide contact details of registered builders with the registration type “Builder – Commercial - Unlimited” or “Builder – Domestic – Unlimited”. These categories thus revealed registered builders who were permitted to carry out construction work as opposed to subcontractors providing specialist trade skills.

Chapter 1 presented some data showing the high proportion of small organisations in the construction organisation. It was suggested that graduates cannot be employed to work independently as they will not have sufficient experience, and that therefore they are not likely to be employed by organisations with fewer than 5 employees – a small construction organisation according to the ABS (1999). Such organisations, with less than 5 employees, are less likely to have a registered office in the centre of a city. It is therefore recognised that by selecting construction organisations with a registered office in the city, small organisations will be excluded from the research. However as these organisations are less likely to employ graduates, the exclusion on geographical grounds will not be detrimental to the research. Conversely, sampling organisations which have a registered office close to or within a city is more likely to include employers of graduates since the volume and size of construction projects and organisations will increase with proximity to the CBD.

Further, it was proposed that the interviews be carried out face to face in order to maximise both the volume and the quality of the data collected from the organisations. Face to face interviews facilitate more than just words to be collected and recorded. Within the
questions designed as a semi-structured interview, face to face collection allows each question to be fully explored through clarification of the question, clarification of the answer and probing for more details where the answer hints at a further meaning. It also allows the interviewer to note contextual factors such as body language, pauses for thought and other interpretation of the respondent’s data.

For these reasons, the research limits the sample to be drawn from the population of registered builders within Melbourne’s CBD. Although this results in some limitations to the generalizability of the research findings, published literature demonstrates that there is a range of acceptability. For example, the exploratory nature of the research prevents generalizing anyway, and the benefits of face to face data collection during Phase 1 are considered more important than being able to generalize results of a new area of investigation. As Stebbins says, “exploratory researchers recognize the most authoritative statement about validity and reliability can only be made down the road in the wake of several open ended investigations” (Stebbins, 2001). He goes on to talk about sample size, indicating that representativeness in an exploratory study is usually less than perfect, mainly because perfection on this matter is often an impossible goal. In concurrent exploratory mixed methods research, Finucane (2006) carried out qualitative and quantitative data analysis on only eleven participants. Collins and Dressler (2008) refer to sample sizes used in multiple phase mixed methods research into domestic violence, a subject not of specific interest to this research except that the prevalence of it is probably much more widespread than construction graduates undertaking development activities. They used N=20 to generate the causes of domestic violence and only N=8 open ended interviews to confirm the previous phases. Within the field of construction research, such limitations are accepted; for example, Kumaraswamy et al. (1997) suggest that a research design should be influenced by the data, the capacities and resources of the researcher and the envisaged outputs.

The database used to provide the population did not provide demographic information; selecting builders that were registered to build both commercial and residential property, with offices in the area of the Melbourne central business district resulted in a sample frame of N=30. These organisations represent the total population of construction organisations within this geographical area. It should be emphasised that all 30 registered builders were contacted and invited to participate in the research, representing an unbiased approach to sample selection.
4.6 Procedure

Having identified 30 potential participating organisations from the Building Commission database, all individuals named on the database as registered builders were contacted. Initially, phone contact was preferable to email or written contact because it was thought that these other methods of approach might be ignored. The research was briefly introduced and the contact individual asked if they would be willing and able to answer questions about training and development in the organisation. In small organisations the answer to this was usually affirmative as the registered individual was also responsible for arranging training activities. In large organisations the contacted individual introduced the training manager, HR manager or other person whom they believed would be better able to answer the interview questions.

Once the research had been briefly explained to the appropriate person they were asked if they would be willing to receive further information in the mail before deciding if they were happy to participate. Of the sample frame, N = 17 organisations agreed to receive further information and the plain language statement prepared for ethics approval was posted to the respective contacts. The plain language statement communicated information about the aim of the research, the potential outcomes and benefits of the research and the expected requirements for participating organisations (Appendix B). The remaining 13 organisations either declined to participate or the registered individual could not be contacted. The main reason for declining to participate was the perception that the organisation was too small to offer any assistance (even though it was explained that the research hoped to give small construction organisations a voice and their opinions would be extremely valuable). It is likely that the non-participating organisations represent an element of the construction industry that adopts a particular approach to training and development, and therefore data gathered about training and development may be incomplete; this is accepted as a limitation.

A month after the plain language statement was posted the individuals were contacted again and asked if they would be willing to continue their participation; all agreed. Appointments were made for interviews and these were conducted by the researcher. Each interview began with gaining informed consent as part of the ethics approval process (Appendix C). Each participant signed a consent form stating that they understood they could withdraw from the
research at any time and received an assurance that all information collected would remain confidential. Interviews were recorded digitally, and were later transcribed by the researcher which provided the opportunity to become more familiar with the data. The data was analysed using the theory building technique suggested by Eisenhardt (2002) as is further described in the following chapter.

4.7 Conclusion

Specifically addressing Phase 1 of the research, this chapter considered how reliability and validity were to be attained. Yardley’s (2008) criteria of valid research were suggested as the benchmark against which the research will be measured. The chapter then detailed the design of the semi structured interview and how this relates to appropriate interview behaviour. The population for the research was defined and, because the population is from a specific geographical location, the chapter discussed why this was appropriate. Finally, the process by which participants were recruited was explained.

The research has now progressed to the stage of collecting data. Chapter 5 will present a descriptive analysis of the data, and will compile the data to find the most frequently implemented graduate training and development activities. It will also use the data to build a theory around the desired outcomes of formal graduate development programs.
Chapter 5  Phase One Results and Discussion

5.1 Introduction

The population of registered builders within Melbourne’s CBD have been invited to participate in this project on the basis that they provide a sufficiently representative sample to explore the key research questions. Seventeen of the original 30 consented to participate in the research. Individuals representing the builders responded to questions about the function and size of the organisation and the implementation of training and development activities for graduates. If they implemented a GDP then they were also asked about the objectives and evaluation of this program.

The aim of this phase of the research is to define the term “success” in the main research question so that the correct measure of success is adopted in Phase 2. A semi structured interview was conducted which included three questions, the purpose of which was to generate discussion around what constitutes a successful graduate development program. The questions were open ended, allowing for as much descriptive response as the respondent wanted to give. Yet the questions were also designed to test the internal reliability of the responses. This chapter presents the results of the interviews through descriptive analysis of the demographic data and the training and development activities implemented. The chapter then interprets the qualitative data gathered from these interviews in order to define the word “success” in the research question.

5.2 Descriptive analysis

Seventeen organisations participated in Phase 1 of the research. Section A of the interview created a picture of organisation characteristics, including function, sector of the industry, number of employees, geographical scope of operations and presence of graduate development program or training and development activities.

Construction was the primary function of 15 of the organisations. Secondary functions included project design and management, and to a lesser extent, property development. Only two of the organisations noted their primary function as something other than
construction and in both cases the primary function was development supported by some construction and management where necessary. The requirement for property development to be supported by the ability to manage the construction process explains the presence in these two organisations of registered building practitioners and hence the inclusion of these organisations in this research. Their inclusion is also supported by the registered building practitioner having a bachelor degree in construction management in one case, and by the employment of young construction professionals in the other case.

Twelve of the organisations undertook commercial construction. Six organisations undertook residential – usually high rise, as might be expected in the areas in which work is carried out, close to Melbourne CBD. Four organisations undertake industrial construction. Five organisations do not specialise in one sector of the industry, preferring to take on both residential and commercial work. The proportion of the commercial and residential work available fluctuates. One organisation took advantage of the demand for apartments in Melbourne, estimating that 80% of their work was residential, but expecting commercial contracts to increase in the next 12 months. Large organisations have the capacity to undertake one major project at a time, worth more than several high rise apartment blocks, and this enhances their ability to move between construction sectors. The organisations sampled can thus be said to be representative of the types of work undertaken in the construction industry.

Using the ABS categories of organisation size, two of the organisations are small (five or less employees), two are medium (6 – 19 employees), thirteen are large (20 or more people). These figures include the total number of employees, where appropriate, globally. This sample had a higher proportion of large organisations than the industrial population, but as was discussed in Chapter 4, graduates are more likely to be employed by medium and large construction organisations. This research places greater emphasis on saturation of themes and the quality of the data.

Only four of the organisations implemented a formal, documented GDP; all of these organisations employ more than 100 people. Three organisations carried out minimal training for graduates, two of these organisations being small (employing less than six people) and one medium (6 – 19 people). Ten organisations carry out informal training, ie. not documented. Of these ten, only one is categorised as a medium organisation with 15
employees; the remainder have in excess of 21 and the largest organisation to implement informal training has 200 employees. This distribution of formal and informal training is not completely unexpected. The literature suggested large organisations would be more likely to implement a formal development program and this research has found only large organisations implement a formal development program. Informal training is implemented by medium and large sized organisations, and the three smallest organisations only carry out training required by law.

5.3 Training activities implemented within informal training

The ten organisations implementing informal graduate training activities were described as medium sized, ie. 6 – 19 employees or large ie. 20+ employees, but all except two employed between 11 and 28 employees. Organisation 2 employed 80 employees, Organisation 4 employed between 150 and 200 white collar workers. Although large, both organisations remain relatively local in the projects they undertake and neither are considered in the same league as the multinational construction organisations.

Table 5.1 lists the training activities questioned in the Phase 1 interviews, in order of frequency of occurrence in the ten organisations that do not implement a formal graduate development program. The table shows organisations as numbers; identification numbers were allocated in the order in which the organisations were interviewed. The four most frequently implemented activities were

1. external seminars and workshops,
2. in-house seminars and workshops,
3. computer software training,
4. succession planning, and
5. career counselling with supervisor.

Each of these activities were implemented by half or more (five or greater) of the ten organisations.
Table 5.1

Career management activities implemented by organisations as part of an informal program.

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<th>Organisation number</th>
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<th>6</th>
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<td>In-house workshops and seminars</td>
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</table>
5.3.1 External Seminars

External seminars and workshops were the most frequently implemented activity, with eight of the ten organisations taking advantage of seminars. External seminars are defined as knowledge disseminating events hosted by external bodies. The provider of seminars is usually a professional industry body such as the Master Builders Association, Australian Institute of Building, Housing Industry Association, Australian Institute of Quantity Surveying, the Property Council and the Building Practitioners Board. Two respondents indicated that although they sometimes attend seminars provided by industry organisations, they do not feel the seminars are of high quality and only go to maintain their membership. This sentiment might be echoed by other respondents, but it may be viewed as a socially inappropriate response and therefore not stated explicitly.

Despite the perception by at least two of the ten respondents that the quality of seminars provided by professional associations is less than satisfactory, two reasons persuade people to attend them. Firstly, attendance at a minimum number of seminars each year is often required to maintain membership of the professional association. Secondly, the subjects of these seminars is often related to safety topics (reflecting the importance that the industry as a whole is expected to place on occupational health and safety), updated construction technology (concrete was specifically referred to), and industry specific legislation. These are subject areas that have legal implications if procedures are not complied with and so keeping up to date with these subjects is considered compulsory. A further potential advantage of external seminars is their facilitation of dissemination of information to a wide audience by experts in their field.

Besides these subject areas perceived to be necessary, one organisation sought external seminars on interpersonal skills and one individual rated information evenings provided by legal firms as valuable to attend:

“... I think the legal firms run some good stuff too... there’s a lot of seminars that the lawyers put on, that we encourage them to go to.” (Organisation 16).

All of the medium sized organisations attended external seminars. The two organisations that did not undertake external seminars are “large”: 80 people (Organisation 11) and 200 people (Organisation 4) employed respectively. It may be interpreted that these organisations
consider themselves sufficiently large to host such important and necessary seminars internally. They have sufficient numbers to make this a financially cost effective exercise, and they may also tailor the information to suit their discipline. However it will become clear that the evidence does not support this.

5.3.2 Internal workshops

In-house workshops are implemented by seven out of ten organisations. The organisations that did not implement internal workshops were Organisation 4, 9 and 14. Organisations 9 and 14 responded positively to attending external workshops. As they employ 28 and 15 people respectively, this is a financially sensible approach to updating knowledge. However Organisation 4 also reported that they hosted no internal workshops. Since this organisation also responded negatively to attending external workshops, and if the assumption is made that someone in the organisation must be maintaining their registered builder status, then the individual must be responsible for their own development. It may be further inferred that the organisation does not have a culture which encourages sharing and learning. Of the 7 organisations that do hold internal workshops, the size ranges from 22 to 120 employees.

Subjects commonly covered are computer software applications (for example Organisations 2, 16 and 17), contracts (Organisations 2 and 16), management skills such as time management, minute taking, conducting a meeting and giving presentations (Organisations 2, 12 and 17). Organisation 2 also include traffic management:

“…the other day they were learning how to, um... you know the stop go man – traffic management...for the labourers and it’s important that we know what the labourers are taught... so there was an in-house session sort of teaching us what the labourers have been taught…” (Organisation 2).

This quote from organisation 2 suggests an interest in the adoption of learning across the whole organisation. The range of subjects covered by in-house seminars is broader than the subjects covered by external seminars as might be expected when organisations can identify needs across the whole organisation and has the population to arrange seminars to cover them. It would appear that they use the internal seminars to supplement the subject areas of
the external seminars and to broaden the knowledge of their employees to include areas useful but not essential in their day to day tasks.

Internal seminars and workshops are prompted by a number of drivers. Some, such as safety and legislative requirements, are considered necessary for the whole organisation to be updated. The respondent from Organisation 14 suggested a driver is keeping up to date with changes in trends, legislation and technology. Some internal seminars are arranged as a consequence of an individual attending an external seminar. The respondent from Organisation 11 commented that he had previously attended a detailed course on concrete technology and as a result had arranged for a short course on the same subject to be conducted in-house with the aim that his staff would appreciate issues. This implies that this organisation has gone beyond meeting minimum requirements for professional development, and is at least part way to adopting a learning culture.

Whilst the respondent from Organisation 9 commented that he didn’t think graduates were missing anything that could be gained from seminars (“The only thing they’re missing is site experience…”), he had considered arranging in-house seminars presented by experts in construction law, health and safety and other builders from whom his staff could learn different techniques.

5.3.3 Computer software training

Computer software training was implemented by seven of ten organisations. As with many of the informal graduate training and development activities implemented, it was not perceived to be essential, suggested by the irregular implementation of this training activity within the graduate employee population. This may, in part, be because graduates have some computer knowledge when they complete their tertiary studies; one organisation recognised that graduates have “the computer and administration skills”.

Training in computer software was implemented for two reasons. One, when required by the role that the graduate was undertaking. This was stated clearly by one organisation (“it depends on what role the graduate is playing”) and hinted at by another, who responded that if a graduate requested training on specific software it would be permitted. However a consistent theme throughout all the interviews is that any requests for additional training must
be evaluated for relevance to the job, and so although the respondent for Organisation 14 said that a graduate could request software training and it would be approved, there may be an assumption that the software would be appropriate to the tasks the graduate was required to perform. Roles that graduates may undertake that require knowledge of specific software include site administration, document control, scheduling and estimating.

The second reason for implementing computer software training was the need to maintain staff in productive activities during quiet periods, for example between projects. Organisation 9 implemented this, naming the software Microsoft Project as the training of choice when no other work was available. This is a clear indication that this organisation recognises the need to retain staff during periods of time when work may not be immediately available, a characteristic of an organisation that takes some responsibility for managing their employees’ careers.

Both organisations 9 and 14 suggested that they would seek this training externally to the organisation (‘...send him off...’ and ‘...go and do an excel course...’) and they also both expressed the need for the whole organisation to undertake computer software training as a result of a system upgrade across the organisations, representing a third driver for computer software training, but one not specifically for graduate employees.

### 5.3.4 Succession planning

Although succession planning is implemented by six of the ten organisations as part of informal training activities, none of the organisations noted that this occurs with specific regard to graduate employees. Succession planning, where implemented, was reported to be on an as needs basis. One organisation discussed succession planning when an employee is approaching retirement and the opportunity it provide for middle managers to further develop their skills. But generally, succession planning is implemented when a project team may be fragmented by a team member leaving, and even this is only when the project still has a considerable amount of time to completion. If a team member leaves a project approaching finalisation then that member is not replaced.

Two noteworthy findings are suggested here: firstly, this is evidence that the project takes priority. Succession planning is perceived as unnecessary except when the successful
completion of a project is jeopardized. It may even be seen as detrimental to a project because it is preferable to retain the same staff on one project from beginning to end and a transparent succession plan might encourage or facilitate movement between projects. Some organisations (Organisations 6 and 9) stated that they actively avoid succession planning. Secondly, construction organisations perhaps do not understand the function of succession planning since many indicated that they prefer to promote from within, yet promoting from within is the end result of successful succession planning.

5.3.5 Career counselling

Career counselling with a supervisor occurred in five out of the ten organisations interviewed. Where counselling is formal, it is usually undertaken as part of a performance review on a regular basis – typically annually (Organisation 6 and 17). Apart from these, an ad hoc approach is taken to career counselling in firms with no formal GDP; discussions seem to be prompted by either the graduate or the line manager, when one or the other feels it is necessary. The response from Organisation 14 demonstrates this “It’s probably initiated either by myself um, with the two active directors from time to time.” One respondent said he uses the opportunity of driving between construction sites to discuss progress and careers with his graduate employees, which would mean that the discussions are likely to be ad hoc and not documented. Another commented that “In terms of individuals who ultimately want to aspire to be a project manager certainly someone who could talk to them and say ‘Hey you need to get experience in these areas and there are the things you need to learn as part of your career’”. In some instances a flexible format was found within the formal framework, such as that implemented by Organisation 2 in which the project manager is responsible for the graduates, but they are supported by the construction manager if there are any issues the project manager can’t deal with.

5.4 Training activities within a GDP

Four of the seventeen organisations interviewed implemented a formal, documented graduate development program. All of the organisations that reported implementing a formal, documented graduate development program had in excess of 200 employees. This reflects and confirms the suggestion of both Australian data and the literature that only
large organisations implement a formal development program. All four organisations undertake a mixture of development, construction and project management.

External and in-house seminars and workshops, career counselling with a supervisor, succession planning and staffing committees were implemented in all four organisations. Job enrichment, job rotation, interview processes, career counselling with personnel staff and internal placements were featured activities in three of the four organisations. Table 5.2 depicts the data analysis.

5.4.1 External seminars and in-house workshops

All four organisations make use of in-house and external workshops and seminars. Two of the four elaborated on their preferences for in-house seminars. Organisation 10 stated that they rely more on in-house seminars and that external seminars are “…few and far between, but when the need arises we do... place employees in those programs…”. Organisation 5 also stated that they prefer to do seminars in-house, but where there is an external program that suits an individual’s task then they would encourage the graduate to attend. This preference for in house seminars may arise from the economies of scale realised by bringing a speaker into the organisation once over sending individual employees out for a fee each time. In house seminars are also more like to facilitate all employees acquiring the same knowledge, enhancing organisation communication and efficiency. None of these organisations offered details about the topic or frequency of implementation.

5.4.2 Career counselling with supervisor

Although none of the organisations reported undertaking training of the graduates’ supervisors in career counselling, they all stated that supervisors undertake discussions with graduates on career progression. In some cases this is a formal performance review which takes place regularly, as frequently as every four months. The review may be unstructured
Table 5.2  
Career management activities implemented by organisations as part of a formal GDP.

<table>
<thead>
<tr>
<th>Training activity</th>
<th>Organisation number</th>
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<tbody>
<tr>
<td></td>
<td>3</td>
</tr>
<tr>
<td><strong>External seminars and workshops</strong></td>
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<tr>
<td><strong>In-house workshops and seminars</strong></td>
<td>•</td>
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<tr>
<td><strong>Career counselling with supervisor</strong></td>
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<tr>
<td><strong>Succession planning</strong></td>
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<tr>
<td><strong>Staffing committee</strong></td>
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<tr>
<td><strong>Job enrichment</strong></td>
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<td><strong>Job rotation</strong></td>
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<tr>
<td><strong>Interview process</strong></td>
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<tr>
<td><strong>Career counselling with personnel staff</strong></td>
<td>•</td>
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<tr>
<td><strong>Internal placement system</strong></td>
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<tr>
<td><strong>Mentoring system</strong></td>
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<tr>
<td><strong>Promotability forecast</strong></td>
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<tr>
<td><strong>Psychological testing</strong></td>
<td>•</td>
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<tr>
<td><strong>Career ladder</strong></td>
<td>•</td>
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<tr>
<td><strong>Other career information</strong></td>
<td>•</td>
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<tr>
<td><strong>Skill audit</strong></td>
<td>•</td>
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<tr>
<td><strong>Job redesign</strong></td>
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<tr>
<td><strong>Supervisor training in career discussions</strong></td>
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<tr>
<td><strong>Job assignment</strong></td>
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<tr>
<td><strong>Career information handbooks</strong></td>
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<td><strong>Informal job canvassing</strong></td>
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<td><strong>Job posting</strong></td>
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<tr>
<td><strong>Computer software training</strong></td>
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<tr>
<td><strong>Career workbooks</strong></td>
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<td><strong>Career planning workshops</strong></td>
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<td><strong>Assessment centre</strong></td>
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<td><strong>Counselling with senior career advisors</strong></td>
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<tr>
<td><strong>Career resource centre</strong></td>
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<tr>
<td><strong>Career counselling with external staff</strong></td>
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</table>
but documented, or the review may be structured by the inclusion of a competency matrix or performance agreement. Surprisingly, in one of the most comprehensive GDPs (Organisation 3), career discussions with supervisors are not formally documented and are not carried out by all supervisors – it appears to be left to the discretion of the supervisor. In this situation, the discussion revealed that graduates are encouraged to discuss their career with whomever they feel most comfortable with and in some cases that might not be the supervisor, but with general HR staff. There is the opportunity here for a self-fulfilling prophecy where the supervisor’s non-verbal language conveys to the graduate an unwillingness to become involved in career advice to which the graduate responds by seeking a person who is perceived to be more open and receptive.

5.4.3 Succession planning and staffing committees
Succession planning and staffing committees were implemented by all four organisations. These activities are integral to human resource management by large organisations that manage projects requiring a diverse range of skills between project commencement and completion.

5.4.4 Remaining activities
A more structured approach to employee management and development is evident in the reported frequency of job enrichment, job rotation, interview processes, career counselling with personnel staff and an internal placement system. These activities are implemented in three of the four interviewed organisations. Some of these are better facilitated by the number of people employed; job rotation, for example, requires enough employees, in this case graduates, to be able to replace someone who moves to a different role. However, interviews before and during employment (the latter in the form of performance appraisals) can be performed by any organisation, regardless of size.

Other career management activities such as mentoring, promotability forecasting, psychological testing, carrying out a skill audit, communicating a career ladder or other career information were implemented in two of the four organisations. Mentoring was found to be a difficult activity to implement successfully. Organisation 5 commented
“We’ve tried to have a formal mentoring system twice and it hasn’t worked... There’s a bond... We allow it to flourish as it is. What we find is one or two people they tend to gravitate towards anyway”.

Organisation 10 noted that what they do would not be defined as a mentoring system but that “it does exist out there... but it isn’t a formalised system. But we’re aware that it does happen”.

5.5 Definition of “successful”

The aim of the first phase of the research is to establish how “success” is to be defined, where an organisation implements a GDP. This definition will then be used to facilitate measurement of the success of GDPs implemented by construction organisations that took part in this research. It was important to approach a definition of success with no expectations, and to examine documented theory building practices as examples of appropriate analysis. Eisenhardt describes the process of theory building from qualitative data as requiring analysis of the data ideally with no preconceived ideas (Eisenhardt, 2002). The empirical qualitative data provided by the four organisations interviewed that implement GDPs facilitated an analytical process similar to that described by Eisenhardt who described theory building from case studies as beginning with gaining familiarity with the data and “preliminary theory generation” (2002, p. 7). This initial theory is then examined by cross-case analysis, searching for evidence to support or contradict the initial theory. In the present study, the initial theory was generated by the interview question “What is the objective of your GDP?” Two further questions provided data to support and develop (or disagree with) the theory: “What influenced the implementation of your GDP?” and “How is your GDP evaluated?” Finally, informal discussion throughout each interview was examined in detail for supplementary evidence.

5.5.1 Formal objective of GDP

The initial theoretical definition of success comes from analysis of qualitative responses to the question “What is the objective of your GDP?” Each of the four organisations responded thus:
Org 3: “Developing managers and leaders of the future.”
Org 5: “... to understand our business... to understand... the focus of our business.”
Org 8: “... the point of actually having the GDP is teaching perhaps the soft skills in regards to, we go through, we go through intro (sic) to working life, we go through safety, we go through QA (Quality Assurance)...”
Org 10: “ the objectives of the program are to supply, the first objective is to recruit people of a high calibre into the organisation, the second is to give them the maximum experience and exposure to certain areas be it estimating, tendering for new projects and also on the construction of projects.”

This question allowed the respondent to describe the purpose of their GDP in their own words, resulting in no obvious similarity across the four organisations. There appear to be five different objectives: to provide managers of the future, to understand the business, to teach soft skills, to recruit high calibre graduates and finally to maximise construction project experience. It is possible, with interpretation of the data, to suggest that achieving four of the objectives would result in the fifth; certainly managers and leaders of the future would be more desirable if they were recruited and then were trained in the focus of the business, soft skills and given construction experience. This suggestion is possible because three of the four organisations have given quite specific desirable outcomes in terms of skill acquisition, whilst one organisation has a more generic goal.

5.5.2 Drivers of GDPs

Organisations that reported implementing a formal GDP were asked what influenced the conception of their GDPs. All four organisations agreed that they had a commitment to career development, a desire to develop and promote from within and a strong expression of employee interest in career planning (see Table 5.3).

The presence of a desire to develop and promote from within suggests that organisations are keen to retain graduates within the organisation throughout their careers. This should not be confused with a desire to avoid high staff turnover, as only one organisation noted that concern about turnover was an influence in the introduction of a GDP. This could be interpreted in three ways: 1) retention of graduates was not a problem before the GDP was implemented and graduate turnover was at a satisfactory level, 2) turnover was at an expected
level (and low retention was expected and accepted), or 3) organisations do not want to reveal that retention of graduates has been an issue in the past. Regardless of past retention levels, organisations recognise the benefits of recruiting graduates and developing them so that when promotion opportunities occur, the best person for the job is already in the organisation. This was demonstrated by the respondent for Organisation 10: “we pass our culture onto them rather than having them come from another organisation”.

The desire to promote from within is supported by two organisations who state that at the time of inception of the GDP, there was a shortage of promotable talent (Organisations 5 and 10). They reported that, having recognised the need for skills in the organisation and found those skills hard to source, they developed a GDP with the intention of ensuring that those skills will be in the organisation when required in the future. This outcome assumes, again, that the skills remain in the organisation, and so retention, whilst not yet explicitly referred to, is implied as an important factor. Organisation 10 again presents a considered and multifaceted approach to recruitment and retention to ensure that any skills required in the future are available within the organisation. In addition to recognising the benefit of recruiting graduates with no experience of other construction organisations, this employer has made a decision to retain graduates even when there is insufficient work for them: “part of the program is to keep the graduates even if the amount of projects we have drops away... the company does its best to retain ... graduate engineers” and later on in the same interview “other organisations may have terminated them [graduates] at the end of the project and recruit again when the next project comes along”.

From the qualitative responses to this question, a theory may be proposed that organisations implement GDPs in order to develop or promote from within, implying that in order to do this, they must recruit graduates, provide them with the appropriate skills and experience and retain them. This aligns with the objectives given in earlier responses; the very specific objectives of skill development and maximising experience that will facilitate recruiting from within. This can only be achieved by attracting and then retaining new graduates.
Table 5.3

Factors influencing the implementation of GDPs

<table>
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<tr>
<th>Organisation</th>
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<th>5</th>
<th>8</th>
<th>10</th>
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<tbody>
<tr>
<td>Org. commitment to career development</td>
<td>•</td>
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<tr>
<td>Desire to develop and promote from within</td>
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<tr>
<td>Strong expression of employee interest in career planning</td>
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<tr>
<td>Desire to improve worker productivity</td>
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<td>Equal employment opportunity program commitments</td>
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<td>Shortage of promotable talent</td>
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<td>Desire to keep up with competitors</td>
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<tr>
<td>Survey / needs assessment findings</td>
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<td>Development of organisation's strategic plan</td>
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<tr>
<td>Desire for positive recruitment image</td>
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<tr>
<td>Concern about turnover</td>
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<td>•</td>
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<tr>
<td>Shift in skill mix/human resource planning needs</td>
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</table>
5.5.3 Evaluation of GDP

In the interviews respondents from each organisation were asked how successful they considered their programs to be, and how they evaluated their programs. These questions were designed to provide evidence to support or contradict the organisations’ responses regarding the objective of the GDPs (a measure of reliability). The responses, particularly to how the program is evaluated, reveal factors that are considered important outcomes from the GDPs, but which were not included in the original statements regarding the objective of the GDPs.

For example, Organisation 3 had offered a generic objective of developing managers and leaders of the future. This statement initially infers that developing managers are to be retained for the organisation, but there is no qualification to this effect in their statement indicating an expectation that not all graduates remain with the organisation. This is substantiated by a later separate statement that not every graduate that they recruit is “going to be with you in ten years’ time”. This interview included two respondents from this organisation, who proceeded to discuss between them the aim of the program which revealed the desire for graduates to remain in the organisation despite the formal aim of the GDP omitting to refer to such retention:

Respondent 1: “It’s part of succession planning. So it’s about growing managers of the future…..”

Respondent 2: “And developing our own”

Respondent 1: “Yeah. So...yeah, promoting from within covers it I suppose but in our words we are actually recruiting leaders and managers of the future. That’s why we do it.”

In this exchange, the first respondent for the organisation introduced the concept that their GDP is related to succession planning, which suggests retention is desirable. The second respondent introduces possession to the discussion – that managers of the future would be “our own” ie. “owned” by the organisation. This sense of possession is then affirmed by the first respondent. Later in this interview, the respondents knew immediately what proportion of graduates remain in their organisation. This strongly implies that retention is important; if this were not the case, it is unlikely they would know accurately what the retention rate was. In response to how the program is evaluated, Organisation 3 interviewees replied that

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the GDP is highly effective, the “…vast bulk of them [graduates] become managers”. Organisation 3, then, seems to have clear and realistic intentions regarding desirable outcomes and their evaluation is aligned with their aims: they measure progression rather than retention, to reflect the success of the program to develop managers and leaders of the future.

The purpose of the GDP implemented by Organisation 5 was to understand the focus of the business. One of the driving influences was to promote from within and the respondent interviewee also acknowledged the concern about turnover that influenced the introduction of the program. The respondent stated that he thought the program was very effective in meeting objectives, but went on to report that evaluation of the programs was carried out by managers completing a formal report on graduates’ skills against set criteria. As described, this process seems to be evaluating skill acquisition of the individual graduates, not their understanding of the business. It suggests the evaluation might be misguided, or that the objectives of the program are not about understanding the business, but more focused on graduate skill acquisition.

Soft skill acquisition was the objective of the GDP implemented by Organisation 8. However when asked about the effectiveness of the program and the evaluation of it, the respondent interviewee focused upon retention of graduates. Specifically, in response to being asked how effective the program was, the answer was that graduates have been retained and that “they’re doing very very well”. In fact this response is sufficiently broad that it could support the initial statement that the aim of the program is soft skill acquisition, or indeed almost any other aim. When specifically questioned about how the program is evaluated, the response was a straightforward, “staff retention”. Taking all this data at face value, Organisation 8 appears to have two desired outcomes from the GDP: soft skill acquisition and staff retention.

Organisation 10 uses a combination of procedures to evaluate the effectiveness of the GDP, stating that they know the GDP is very effective because of the low turnover rate and as a result of feedback from project managers on graduate performance. This is not absolutely aligned with the stated objective of recruiting people of high calibre and giving maximum exposure to and experience of construction projects. It does, however, indicate that, as with
Organisation 8, staff retention is an underlying, often unstated, objective of implementing a GDP.

The qualitative data so far suggests two broad aims of GDPs: firstly to facilitate the acquisition of skills amongst graduate employees (as with organisations 5, 8 and 10) which might be seen as a short to medium term outcome, with the long term effect of graduate employees being eventually suitable for promotion to managers and leaders in the construction industry if not in the organisation (Organisation 3). A secondary aim is the retention of graduates within the organisation, a point made by three of the four organisations. Further interview comments about retention of graduates as an outcome of GDPs occurred in all four organisations. Where such comments were unprompted, it suggests that retention is more important than originally revealed by the formally stated aim of the GDP.

The interviews revealed a perceived lack of mid-career construction professionals, also supporting the argument that retention is a desirable outcome of GDPs. The interviewee from Organisation 5 reported that a specific age group are missing in the industry: “construction industry seems to have a problem with 30 – 40 year old engineers – there’s none.” Organisation 10 interviewee agreed, responding to a shortage of promotable talent as an influential driver with “Yes, that’s very strong.” This organisation also considers itself more loyal than most in terms of retaining graduates when there is less work (see earlier verbatim comment).

Although skills are recognised as being an outcome of GDPs, the organisations seem uncertain which skills are desirable and therefore included in the GDP, and also how to evaluate the acquisition of skills. Only Organisations 5 and 10 measure specific skills, Organisations 3 and 8 prefer to evaluate success of the program by career progression of the graduate. There may be other factors influencing the progression (or lack of it), of each graduate and so using career advancement as an indicator of success of GDP, where success is determined by skills, is an incomplete assessment. For example, a graduate may have indicated a desire to remain at a specific career level for personal reasons, the quantity of construction work may be less over time or the individual graduate may have advanced further as a result of a high personal desire for achievement. Only organisation 8 was able
to list the skills taught during the GDP, reporting that competency matrices were available to staff on the organisation’s intranet; an advanced strategy for a construction organisation.

### 5.6 Conclusion

This exploratory research was methodologically separated into two phases, to enable the definition of “successful” as a key variable of the main research question in Phase 1. Having identified this variable or variables, the research question can be further defined and the correct variables can be measured in Phase 2. The result of Phase 1, the explanation of “success”, constitutes a finding in its own right, and contributes to the body of knowledge regarding the purpose of graduate training in the construction industry.

This chapter analysed the qualitative data collected during Phase 1. Considering firstly those ten organisations that implemented informal training (ie. not planned in advance and not documented), the data found that external seminars, internal workshops and computer software training were the most frequently implemented forms of training. The relationship between external seminars and organisation size was investigated to see if they took advantage of economies of scale and having the whole organisation undertake and develop the same knowledge. Certainly the two organisations that only attended external seminars where relatively small, with 28 and 15 employees. However medium and large organisations used both internal and external opportunities to deliver knowledge.

Next, the four organisations that implemented a formal, documented graduate development program were assessed. These all had a minimum of 200 white collar employees in Victoria, supporting the proposition that only large construction organisations implement a GDP. The most frequently adopted training activities were external seminars and workshops, in-house seminars and workshops, career counselling, succession planning and a staffing committee.

These four organisations were asked three questions to identify the reason for the graduate development program: What prompted the development program to start? What is the intended outcome? How is it evaluated? The questions facilitated inductive theory building to take place, in addition to testing the internal reliability of the responses given by the organisations. The responses to the first question suggested that skill acquisition was the
central desirable outcome, but as the responses to the second and third questions were unravelled it became clear that staff retention was just as, if not more, important than skill acquisition. This seems to be a logical partnership; it would be prudent for an organisation that has invested time and money into skill acquisition to attempt to retain staff with increased skills in order to see a return on their investment.

At this stage the research argues that Phase 1 has identified two avenues for exploration during Phase 2: skill acquisition and staff retention. The following chapter formally closes Phase 1, and initiates Phase 2.
Chapter 6 Conclusion to Phase 1

6.1 Introduction

The aim of this research is to compare the success of GDPs with informal graduate training activities in the construction industry. This chapter will make three arguments: firstly, that Phase 1 has revealed some new knowledge relating to graduate training in the construction industry and that this knowledge warrants further investigation. Secondly, that one of the avenues highlighted for further investigation requires more time and attention that can be allocated within the constraints of this research. Thirdly, that as a result, Phase 2 will focus on conducting research that is within the scope of the current project and is able to conclude with meaningful findings and new knowledge.

6.2 Aim of Phase 1

The research questions to be addressed by Phase 1 were “What training is implemented for graduates in construction organisations?” and “What is the intended outcome of this training?” In responding to these questions, particularly the latter, the research needed to define the variable “success” in the main research question: Are graduate development programs as successful as informal training activities offered by construction organisations?

6.3 Phase 1 method

Chapter 4 explained that interviews with construction organisations would allow both the implemented training activities to be noted as well as the reasons behind formal programs to be explored in as much detail as the respondent would offer. Tables 4.1 and 4.2 demonstrated Stufflebeam’s program evaluation model adjacent to the research questions and methodology within the sequential mixed methods proposal. The argument that interviews were an appropriate method to collect qualitative data was presented.

The data collection instrument itself was adapted from Gutteridge et al. (1993). Adaptation consisted of the development and inclusion of open questions after the list of training activities was presented. The population was determined as organisations employing a registered builder, with business locations within the Melbourne CBD. The total
population was invited to participate. Of the 30 organisations in this population, 17 responded positively and agreed to participate in face to face interviews.

6.4 Phase 1 findings
Out of the 17 organisations, three implemented none of the identified training activities. These were all small organisations, employing one, four and fewer than 20 people. Ten organisations reported that they implemented informal training, not documented and not planned in advance but sought if required. Four organisations implemented a formal documented graduate development program. All four organisations employed in excess of 200 people.

In response to the first question “what graduate training activities are implemented by construction organisations?” the most frequently implemented activities were external workshops and seminars and in-house workshops and seminars. Graduate development programs then included career counselling, job enrichment and job rotation and an internal placement system. Informal training included computer software training and career counselling with supervisors.

The interviews revealed that a substantial amount of training was created by legal necessity. Topics such as safety, legislative updates and new construction or computer technology were the most sought after.

Those organisations that implemented a GDP were asked what prompted the development program initially, what the objective was and how the program was evaluated. These questions were intended to provide some internal reliability. Although the initial responses suggested that the reason for the development program was skill acquisition, further questions identified that none of the organisations formally measured skill acquisition. The interviews revealed a second desirable outcome, retention of graduates, and that staff retention was an indicator of the success of the development program. Chapter 5 recognised that skill acquisition and staff retention make good companions; that it is natural for an organisation that invests in skill acquisition to wish to retain the staff they have invested in. It would be pertinent that an organisation that invests in skill development also invests in behaviour to retain its employees.
However it is somewhat disconcerting that none of the organisations evaluated their development programs by measuring the intended outcome. All four organisations responded that their programs were very or highly effective. It is recognised that the respondents may have given what they perceive to be the most socially acceptable answer; it is also possible that the responses reflect the organisations’ perceptions that their programs are very effective. None of the organisations were able to state unequivocally that they measure the same variables as those identified as desirable ie. skill acquisition or graduate retention. Evaluation of the programs was largely informal and subjective; organisations used graduate progression through the program, feedback from managers and general low staff turnover as indicators or development program success.

Thus far, the research has contributed to the field of graduate training in the construction industry through identification of two desirable outcomes of formal development plans: skill acquisition and staff retention. Both of these will be discussed with regard to their inclusion in Phase 2 of this research.

### 6.5 Recommendations for industry

The central recommendation for those construction organisations that execute a graduate development program is that they need to align their program evaluation criteria with the desirable outcomes they have identified for such programs. The data collected from the interviews implies that these organisations are instinctively implementing development programs with little or no consideration of program evaluation theories and processes. The research suggests that the organisations would benefit from reviewing and applying current program evaluation theories.

It would also appear that development programs are not currently given the developmental time they require to maximise desirable outcomes. There does not appear to be any recognisable formal design and implementation of graduate development programs. Without post-implementation evaluation and refinement of the activities included with a development program, the GDP is not much more than an umbrella term for a collection of training activities. Yet a well founded and designed GDP has the potential to offer so many more positive outcomes to both the individual graduate and the construction organisation.
6.6 Recommendations for future research

As a result of Phase 1, the research is now able to present two specific questions:

Are the graduate development programs implemented by construction organisations as successful at skill acquisition as informal training activities offered by construction organisations?

and

Are the graduate development programs implemented by construction organisations as successful at staff retention as informal training activities offered by construction organisations?

The aim of Phase 2 of the research could be to achieve two outcomes: measure skill acquisition and the retention of graduates in construction organisations and then attribute these measurements to the presence of or lack of a graduate development program. However measurement of both outcomes poses numerous problems.

Measurement of skill acquisition with any reliability would require accurate definition of the skills to be measured, and reliable measurement tools to be available. Further, in the absence of historical or accessible data maintained by the employer, or compulsory registration requirements, measurement of the defined skills requires a longitudinal study, including measurement of skills prior to and after the intervention (ie. the GDP) and comparison with either a control group or matched pairs sample to account for external variables influencing skills acquired over the time period. An investigation of this nature would need longer time than is possible in a doctoral project. The current research is not in a position to manage the enormity of such a complex investigation. The durational confines prevent a longitudinal study, and the sample set is not sufficiently large to source a control group or to provide matched pairs. However this research recognises the important outcome of skill acquisition as a result of training and feels that retaining this area of investigation
for future research will allow a more reliable study to be undertaken at a later date. It is thought that future research will be substantially strengthened and justified by the findings of the current work. Consequently, measurement of skill acquisition is dealt with as a recommendation for future research and is not attempted as part of this research.

The decision to omit skill acquisition from the remainder of this research reflects the reluctance to predict what the outcomes of Phase 1 might be. As this research has not been conducted in the construction industry previously, and as it is critical to the validity of the research that the results of Phase 1 are not preconceived, the research now finds itself without an adequate sample size to continue this strand of investigation. The research focus has been on validity, at the expense of being able to investigate all outcomes of Phase 1.

The argument to delay the exploration of skill acquisition and graduate development programs is supported by the exploratory nature of the research. Phase 1 used an inductive approach to theory building, taking care not to exclude potential outcomes and to accept but not be swayed by bias and experience. The advantage of exploratory research is that the open approach to findings means many lines of investigation may be found and these may take time to fully and thoroughly implement. Mansourian, for example, reports maintaining an idea through his research yet changing the main focus of the research at different stages (Mansourian, 2008). This was partially informed by the high level of uncertainty at the start of the project which measured successful web based information retrieval. Additional support for the exclusion of skill acquisition from the remainder of the current research project comes from the pragmatic paradigm adopted which encourages research to be directed by practicalities rather than by theory.

It is also noted that the reason for this research not proceeding immediately with investigating skill acquisition may be the same reason that construction organisations do not measure skill acquisition as a method of evaluating their formal development programs. Perhaps they consider skill acquisition too hard to measure; although if this were the case, it might have been expected that the interviews would reveal this. However no mention was made of a quantitative measure of skill acquisition during data collection.

Therefore, attention turns to staff retention; how can this be explored in Phase 2? The measurement of graduate retention within organisations also has its difficulties. The most
accurate source might be the organisations themselves; they might be able to provide data – albeit historical data – from human resource records of previous graduates and the duration they remained in the organisation. Assuming that the organisations maintain this data, it requires collating by the organisation as the information may be embedded in confidential records such as salary information. This creates the opportunity for the organisation to edit the record to provide data that suggests a more favourable picture. Regardless of sources of erroneous data, previous research in which organisations were asked to provide retention data has uncovered problems. Arnold and Mackenzie Davey (1994b) found most of the eight organisations in their research had difficulty reporting this data accurately.

The alternative is to collect turnover data from the graduates themselves. Collecting data from currently employed graduates, asking them directly how long they intend to remain with the organisation, has the potential to encourage graduates to reflect on their employer. Where a graduate might not be entirely satisfied, they might be prompted to seek alternative employment earlier than if they had not been asked this question, thus creating a difficult ethical problem for the research. Although others (Hackett, Bycio & Hausdorf, 1994; Lambert & Hogan, 2009; Lee, Lee & Lum, 2008; Porter, Steers, Mowday & Boulian, 1974) have measured intention to leave directly, the current research chooses to avoid the potential ethical issues associated with this approach; it was decided to employ an indirect alternative. Much literature exists about the significant link between retention and other factors that lend themselves to measurement with fewer ethical complications. For example, Sheridan (1992), Hackett, Bycio and Hausdorf (1994), Meyer and Herscovitch (2001), Gellatly, Meyer and Luchak (2006) and Solinger, van Olffen and Roe (2008) have provided a strong relationship between retention, intention to leave and commitment and it is possible to reliably measure commitment and therefore indicate whether there is an intention to leave and suggest future retention. This approach of measuring commitment ensures that the graduate’s focus remains inward towards the organisation that they are employed by – and as it is this relationship that is being examined, this is a more appropriate strategy than asking a graduate how long they intend to remain with the organisation.
The hypothesis derived from the refined research question is:

That graduates participating in a GDP are more committed to their employer than graduates who are not participating in a GDP. (H₁)

The null hypothesis (H₀) is therefore:

That there is no difference in commitment to employers from graduates participating in a GDP compared to graduates who are not participating in a GDP.

The next chapter reviews the literature on commitment and its relationship with intention to leave and implications for retention. Measurement of commitment will be investigated and the method for Phase 2 of the research is described.
Chapter 7  Phase 2 Background and Method

7.1 Introduction
This research is driven by the question “Are graduate development programs as successful as informal training activities offered by construction organisations?” A two phase sequential methodology was utilized and found to be appropriate for this research process. Phase 1 qualitative data has been collected and analysed. Results highlighted the most commonly implemented training and development activities and revealed that the two common objectives of GDPs are 1. skill acquisition and 2. retention of graduates. Chapter 5 concluded with an argument demonstrating the difficulties of collecting data relating to the first objective within the scope of this research, but measurement of the second objective, graduate retention, is possible through its relationship with the concept of commitment. Therefore the research question is now refined to ask: “Are graduate development programs as effective at generating commitment as informal training activities offered by construction organisations?”

This chapter introduces Phase 2 of the research by reviewing literature on commitment, particularly exploring in detail early career commitment, and the link between commitment and retention. The chapter then reviews the method adopted for Phase 2 data collection, paying attention to the measurement of commitment and the process of implementing the measurement tool.

7.2 Phase 2 Background

7.2.1 What is commitment?
Becker (1960, p.33) developed an early commitment theory in which commitment is defined as “consistent lines of activity” because of the perceived cost of doing otherwise. This clearly proposes that commitment is demonstrated through “activity” or behaviour, and suggests that the behaviour is activated externally as a result of a negative consequence, that is, the perceived cost of a lack of behaviour or activity. Porter, Steers,
Mowday and Boulian utilized an inwards focus in their definition of commitment as “the strength of an individual’s identification with and involvement in a particular organisation” (1974, p.604), thus relating organisational behaviour to a theory that can be measured (the strength of the individual’s feelings towards their employer) and includes both positive antecedents and negative consequences.

Meyer and Allen (1997) built on the concept that commitment has positive antecedents and negative consequences which are demonstrated by measurable behaviour; their theory was called the Three Component Model (TCM). This model suggested that commitment has three forms: affective commitment which is positive emotional attachment; continuance – a commitment resulting from negative consequences (closest in definition to Becker); and normative commitment in which obligation is felt. In measuring commitment amongst employees, affective commitment is the most desirable form whereas continuance commitment may appear initially to be beneficial; in fact, high continuance commitment should be taken as a warning sign that staff are dissatisfied. Both affective and normative commitment relate positively to job performance.


Even though the TCM continues to be a popular measurement of commitment, debate still persists as to its accuracy on the basis of Meyer and Allen’s commitment theory. For example, Solinger, van Olffen and Roe (2008) argue that the TCM relies upon the three concepts of affective, normative and continuance commitment being described as attitudes towards the organisation and that in fact normative and continuance commitment are attitudes regarding behaviour – to stay or to leave. Solinger et al. accept that the TCM is
appropriate for predicting turnover, but not for predicting other consequences associated with commitment.

Allen and Meyer (1996) wrote that the issue of geographic generalizability of the TCM should be considered. The model was developed and initially used in North America. Meyer, Stanley, Herscovitch and Topolnytsky (2002) found that although there were some differences (for example, the correlation between affective and normative commitment was much stronger outside North America, but this was attributed to translation difficulties), results were on the whole similar outside North America.

As there are three components to the model, debate also continues about each component. Jaros (1997) suggests that affective commitment and normative commitment overlap: affective commitment being a general emotional attachment, normative commitment reflects a specific emotional attachment (i.e. a feeling of obligation). Meyer et al., (2002) and Gellatly, Meyer and Luchak (2006) agree that there is a high degree of affinity between these two components. Gellatly, Hunter, Currie and Irving (2009) go so far as to exclude normative commitment from their studies citing the need for clarification before normative commitment is treated as a distinct component. However van Vuuren, Veldkamp, de Jong and Seydel (2008) disagree, suggesting that there are differences between the two constructs and indicating that flexibility in an organisation contributes to affective commitment, whilst an emphasis on control in organisations will lead to normative commitment. Even the continuance component of commitment is questioned; van Vuuren et al. (2008) state that as continuance commitment does not involve any emotional bond, it is not strictly a form of commitment.

Despite repeated correlations between affective and normative commitment, factor analysis confirms that the three components are distinctive and that each can be measured individually (Dunham, Grube & Castaneda, 1994; Hackett, Bycio & Hausdorf 1994). The internal reliability (Cronbach’s Alpha) of the three components measured by Meyer and Allen (1997) shows results of 0.85 (affective commitment), 0.79 (continuance commitment) and 0.73 (normative commitment). According to Nunnally (1978) internal reliability above 0.70 is acceptable although 0.80 is recommended.
As familiarity with the use of the TCM grows, modifications and developments are to be expected. One evolution is the acceptance that affective, normative and continuance commitment are not mutually exclusive; putting aside the argument that normative and affective commitment are the same, all three forms of commitment are experienced simultaneously. As a result, Sinclair, Tucker, Cullen and Wright (2005) propose that commitment profiling be undertaken in which individual respondents are categorised according to whether the mean scores of affective and continuance commitment are noted as strong, moderate or weak. Thus nine categories are created although subsequent consecutive studies by Sinclair et al. (2005) reduces them to four: devoted (high affective and continuance commitment), emotionally attached (high affective and low continuance commitment), uncommitted (low affective and continuance commitment) and trapped (high continuance and low affective commitment).

7.2.2 Antecedents and consequences of commitment

Research into antecedents of commitment fall into two categories; whether research considers commitment as a whole, or whether it focuses on one or the other of the three components. Abbott, White, and Charles (2005) argued that perceived organisational values appear to be the most consistent predictor of organisational commitment. Training and development activities have been found not to be significantly related to generic commitment according to Igbaria and Wormley, (1992), Shore and Barksdale, (1998) and Smeenk, Eisinga, Teelken and Dooreward (2006). Wognum and Horstink (2008) disagree, finding a positive relationship between the level of formality of training and organisational commitment. Further, generic commitment has also been found not to be related to work hours (Bhagat & Chassie, 1981). Performance appraisal is found to have a significantly positive effect on generic organisational commitment (Slocombe & Bluedorn, 1999) and this is supported by Tansky and Cohen (2001) who found that organisational commitment correlated with career development, of which performance appraisal is a frequently implemented activity. Autonomy is also found to have a significant positive effect (Hall, Schneider & Nygren, 1970). Cohen (1992) and Mathieu and Zajac (1990) (both before the TCM became popular) and Abbott et al. (2005) found that situational variables account for more variance than personal characteristics. Personal characteristics are only a moderating influence (Mathieu & Zajac, 1990) but one that is continuously recognised such as by Meyer, Irving and Allen (1998) who found that the impact of comfort related experiences
on affective commitment is more positive among those who place high value on such experiences. However, recently Smeenk et al. (2006) added strength to the importance of personal characteristics, by finding that different management identities require different bundles of HR practices in order to achieve increased commitment and superior performance. Although they stress the important role of “identities” this still does not imply more than a moderating influence and their sample had very specific demographics.

When specifically measuring affective commitment the best predictors are organisational dependability, organisational justice, peer cohesion, role clarity, personal importance, job challenge and participation, which contribute generally to a positive working climate (Mathieu & Zajac, 1990; Meyer, Irving and Allen, 1998). Another antecedent of affective commitment is perceived organisational support (Meyer, Stanley, Herscovitch & Topolnytsky, 2002; Roades, Eisenberger & Armeli, 2001) and person-organisation fit (Kristof, 1996). Person-fit may be similar to the shared values found by Meyer and Herscovitch (2001) to be a predictor of affective commitment. This might be expected; outside of the commitment discussion, the comment of Schneider and Hough (1995) that “the right person in the right place” nourishes a feeling of comfort and intention to stay seems to be a plausible statement. Gellatly, Hunter, Currie and Irving (2009) found the employees’ perception that an organisation implemented developmental HR practices (for example, providing meaningful work and training opportunities) led to an increase in the number of respondents categorised as emotionally attached or devoted. Both of these profiles feature high affective commitment. Sturges, Guest, Conway and Mackenzie Davey (2002) found that the provision of career management supports the development of employee commitment. The same relationship is inferred from the work of Horwitz, Heng and Quazi (2003) and Hsu, Jiang, Klein and Tang (2003) in which career development was found to be significantly related to retention of employees. Sturges, Conway, Guest and Liefooghe (2005) provide further detail to this theory, finding that informal career assistance shows a stronger association with increased affective commitment compared to formal career assistance. Their explanation is that informal help in the form of career advice and introductions to influential people is specifically tailored to the needs of the individual whereas formal career management is available to all employees. Amongst construction quantity surveyors in Hong Kong, the perception of work empowerment was found to be associated with affective commitment (Liu, Chiu & Fellows, 2007).
Meyer et al. (2002) found that affective and normative commitments have similar patterns of antecedents and consequences. Work experiences have been found to be among the best predictors of affective commitment (Meyer & Allen, 1991) and also correlate (albeit weakly) with normative commitment. Having a positive work experience may contribute to both the desire to remain and feeling obliged to remain.

Age and tenure relate positively to affective, continuance and normative commitment (Hackett et al., 1994). The main antecedents for continuance commitment appear to be side bets – those losses incurred from exiting the role such as status, benefits, financial security and emotional attachment to the job (Meyer & Herscovitch, 2001). Ko, Price and Mueller (1997) measured self-investment, training, social support and opportunity as antecedents of continuance commitment amongst two sample groups in South Korea. Their results show that supervisory support, friends’ support and opportunity significantly correlated with continuance commitment in one group. In the other sample group, training, co-worker support, parent support, friends’ support and opportunity were found to significantly correlate. Dunham, Grube and Castaneda (1994) point out that rewards that are entirely expected may also contribute to continuance commitment, but with less vigour. Organisational rewards include pay, workplace safety, promotion opportunities and job security. A reward may also be gained from interacting with colleagues and gaining their support (Ko, et al., 1997).

It is difficult to group all forms of commitment together and discuss consequences: theoretically, the outcomes of affective and normative commitment will be the reverse of those outcomes of continuance commitment. It is not uncommon for research results to group affective and normative together (for example, Gellatly, Hunter, Currie & Irving, 2009; Sahinidis & Bouris, 2008; Sturges, Conway, Guest & Liefoghe, 2005; Wanous, Poland, Premack & Davis, 1992), although it is also recognised that whilst the outcomes may be similar, the strength of the influence of normative commitment is considerably less than that of affective commitment. As it may be argued that the three components should not be investigated individually, and that considering individuals from the perspective of their combined scores enables a better prediction of their behaviour, Meyer and Herscovitch (2001), and Sinclair, Tucker, Cullen and Wright (2005) proposed commitment profiles and related each to their primary outcome of interest (retention). Discretionary outcomes are behaviours such as citizenship, performance and attendance. These
discretionary outcomes are the subject of investigation after staff turnover has been reported.

Pool and Pool (2007) establish strong support for commitment as an antecedent in motivating employees that directly impacts job satisfaction. But this relationship is not reversible; according to Mathieu and Zajac (1990) motivation and job satisfaction are correlated with commitment, but not consequences. This raises the question of whether causes of commitment are also causes of motivation and job satisfaction.

As might be expected, staff turnover is negatively correlated to affective commitment (Mathieu & Zajac, 1990). Both job performance and organisational citizenship behaviour relate positively to affective commitment (Meyer et al., 2002). High levels of affective commitment also relate well (ie. negatively) to self-reported stress, work-family conflict and absenteeism (Meyer et al., 2002). Affective commitment is the primary driver of positive work related outcomes such as organisational citizenship behaviour, attendance and performance (Wasti, 2005).

Normative commitment frequently shows the same correlations as affective commitment, albeit with less conviction (Meyer et al., 2002; Wasti, 2005). Continuance commitment has been positively related to both work-family conflict and self-reported stress and negatively with job performance (Meyer et al., 2002).

### 7.2.3 Early career commitment

Numerous attempts have been made to identify phases of a career and comparable changes in commitment levels and this implies acceptance that commitment is not static throughout a career. In their review, Beck and Wilson (2001) find common ground between Super (1957), Havighurst (1964) and Levinson (1978, 1986). These three researchers suggested three phases: a pre-employment phase, an entry or socialization phase, and a stabilization phase. Mowday, Porter and Steers (1982) identified similar stages in the development of commitment: pre-entry to the organisation (anticipation); early employment (initiation); middle to late career (entrenchment). Of these stages, the early employment period is thought to have the most influence on commitment, particularly affective commitment (Buchanan, 1974; Louis, 1980; Meyer & Allen, 1987; Mowday & McDade, 1979). Meyer,
Bobocel and Allen (1991) measured affective and continuance commitment amongst graduates at one, six and eleven months. They concluded from their research that the first month is critical to development of affective commitment and commitment levels during the first month can be used to predict affective commitment at six and eleven months. However a study by Sturges, Guest, Conway and Mackenzie Davey (2002) contradict this, finding that affective commitment was high when first employed and fell significantly over the first twelve months.

Many antecedents have been proposed to assist in the development of affective commitment during socialization and the early career phase. Meyer, Bobocel and Allen (1991) concluded that organisations can be instrumental in the development of affective commitment by providing quality work experiences, identifying that the needs and preferences of new graduates and the structure of early work experiences to be compatible with these needs. Some of these antecedents of commitment amongst graduates were previously found by Buchanan (1974) including the realisation of new employees’ expectations, the importance of intrinsic job factors, quality of the initial task, and confidence in the choice of employer. A review of early commitment research reveals the first year of employment has always been viewed as a critical period (Caldwell, 1962 and Berlew and Hall, 1966 in Buchanan, 1974). Recent reviews strengthen this: Wesson and Gogus (2005) found that the influence of socialization on a person is long term, highlighting the importance of early career tactics, although they do emphasise that newcomer orientation is not the same as socialization, but the former facilitates the latter.

Wesson and Gogus (2005) compared face to face with computer based socialization and found that the former technique was predictive of affective commitment, adding further evidence to the importance of initial organisational behaviour and how this influences newcomer perceptions and commitment. An organisation may approach face to face socialization from different perspectives: broadly speaking, Van Maanen and Schein (1979) divided group socialization into two categories – institutional and individual. Jones (1986) tested the relationship between socialization strategy and outcomes, including commitment, and found institutional socialization, which involves treating new employees as a group and encouraging citizenship, led to an increase in commitment and a decrease in intention to quit. Again, this concept is not new; Buchanan (1974) found evidence in literature that individuals new to an organisation seek the reassurance of a group, and that this group can
have a long term influence on the individual. Further, if the group includes senior managers from within the organisation, the organisation’s culture can be communicated from them to new employees (Schein, 1971, from Buchanan, 1974). If this result is generalizable, then organisations advising graduates that career management is an individual responsibility, as Sturges, Guest and Mackenzie Davey (2000) have reported to be the case, are not doing themselves any favours. Sturges et al. also reported that organisational career management tactics early in a career were not significantly associated with increased organisational commitment twelve months later, and so organisations should take great care when choosing activities to be included in their socialization programs.

One of the benefits of a thorough recruitment process and a well developed socialisation program is the removal of uncertainty experienced during the settling in phase of employment. When a graduate becomes an employee in an organisation about which they know relatively little, not being able to predict the future creates a threat which in turn causes anxiety. Assuming that anxiety has negative effects, uncertainty reduction is therefore desirable. Uncertainty has been described as a core component of anxiety by Miceli and Castelfranchi (2005). Previously, anxiety has been generally perceived to occur in response to a threat, such as disapproval (May 1950, from Miceli & Castelfranchi, 2005) or death (Becker, 1973 from Miceli & Castelfranchi, 2005). However Miceli and Castelfranchi (2005) move towards an emphasis on the role of epistemic control being central to anxiety. As epistemic control is described as being able to foresee what will happen, uncertainty becomes integral to the presence of anxiety; not being able to foresee the future poses a threat in itself.

Investigating uncertainty explicitly amongst new employees, Feldman and Brett (1983) suggest that uncertainty would be greatest amongst new employees who have the least amount of information about their employer and the expectations of both parties – the employer and the employee. As a result of lack of knowledge and higher uncertainty, emotions such as loss, anxiety and lack of control would be felt (Singer, 1978, from Feldman & Brett, 1983). Kuhlthau (1999) explored uncertainty amongst information workers, gathering qualitative data from novice workers who were able to identify specific occasions that created feelings of uncertainty, namely preparation of reports that required a change in thought and approach, and the need to be perceived to be right.
Once uncertainty is encountered, individuals tend to respond in similar ways, from despair to excess energy. This seems to depend upon the amount of uncertainty experienced and from the individual’s ability to cope. Individual response has been studied by many (Sorretino, Raynor, Zubek & Short, 1990; Dugas, Gagnon, Ladouceur & Freeston, 1998). Dugas et al. (1998) called this the intolerance of uncertainty. It is agreed that some individuals are able to tolerate uncertainty and are motivated to remove it (uncertainty-oriented people) whilst others are less tolerant and less able to manage the uncertainty (certainty-oriented people) (Miceli & Castelfranchi, 2005). Where it is felt there is little hope of reducing uncertainty, people are more likely to develop feelings of helplessness and depression (Feldman & Brett, 1983) or anxiety and lack of confidence, and associations with confusion and frustration (Kuhlthau, 1993). However Feldman and Brett (1983) also report from McGrath (1976) that a small degree of stress can increase energy and motivate individuals to attempt to regain control over the uncertain environment. Kuhlthau found a similar positive outcome amongst her information worker respondent who stated that they not only expected to experience uncertainty during the early stages of their career, but actually wanted “to be overwhelmed” (Kuhlthau, 1999, p. 403).

The preferred response to an uncertainty can be problem or emotion-focused (Folkman & Lazarus, 1980). The problem-focused response occurs when an individual behaves in a manner which they believe will avoid the threat and take advantage of opportunities that arise (Brett, 1980, from Feldman and Brett, 1983) for example, information seeking although that can have the opposite effect of creating new uncertainty as more questions arise as a result of increased knowledge (Kuhlthau, 1999).

Feldman and Brett (1983) examined the occurrence of eight coping strategies amongst new employees: work longer hours, change work procedure, redefine the job, delegate responsibilities, get others to provide task help, seek out information, seek out social support and palliation. They found that the new employees preferred to cope by seeking more information about the organisation, their job and their co-workers and by asking for assistance. This information seeking approach is a clear response to uncertainty. As Feldman and Brett (1983) acknowledge, increasing predictability is a key goal of coping strategies. However at the end of the day, the decision about which coping strategies are used is determined by the relationship between the person and the environment.
Meyer and Allen (1991) conclude that “Organisations can be instrumental in the development of affective commitment in their employees… for example provide job seekers with accurate information, provide new hires with quality work experiences” (1991, p. 733). Unfortunately, there are also pre-entry influences on commitment, which may be beyond the control of the organisation. Two primary factors that the literature discusses are: 1) graduates’ expectations and 2) the confidence that the graduate has that they have made the right decision in choosing an employer.

Graduates approach new employment with a mix of emotions, including expectations regarding the tasks they will be carrying out, the organisation they will be working for and the associated environment and culture, remuneration and the resultant financial freedom, and the people they will be working with. These expectations have four sources according to Dean (1982): societal stereotypes, childhood experiences, professional training and organisational entry processes, of which the organisation only has control over the fourth. Riordan and Goodman (2007) examined data from engineers to find discrepancies between expectations and experience to find work content, work context and “career mobility issues”. Meyer and Allen (1988) partially agree with Riordan and Goodman, reporting that for graduates, issues revolve around intrinsic aspects of the job. From a different perspective, reasons for joining an organisation may frame expectations; Arnold and Mackenzie Davey (1994b) agree that interesting work is important to graduates when choosing an employer, but this is only after long term career prospects and training being provided. Wanous, Poland, Premack and Davis (1992) confirm the correlation between expectations and commitment through their meta-analysis of studies which revealed that where expectations were met, there was a strong correlation with job satisfaction primarily, followed by organisational commitment and intent to remain.

Whilst organisations have little or no opportunity to affect stereotypes and childhood experiences, they can have some influence on graduates’ perceptions that the decision to accept an offer of employment was the best one to make. This can be enhanced by the organisation’s entry processes, including recruitment, socialization and recognition of the potential of the psychological contract to reduce the likelihood of a decrease in affective commitment.
It is during recruitment that there is an opportunity to provide information to potential graduate employees so that both parties can make as informed a decision as possible before commencing employment. Meyer, Bobocel and Allen (1991), in their measurement of commitment at 1 month, 6 months and 11 months, found information about the job correlated significantly with affective commitment, as did confidence in the decision made and number of job offers received. Although they use this data to conclude that there is no logic to the argument that affective commitment begins before employment it is clear that influences on affective commitment can occur prior to entry, and that affective commitment can be grounded at this stage. Where previous theorists (for example O’Reilly & Caldwell, 1981 and Pfeffer & Lawler, 1980) have argued that pre-entry affective commitment is possible, it is acknowledged that the strength is only weak or duration only short lived. Lee, Ashford, Walsh and Mowday (1992) call this commitment propensity, and provide evidence to support the theory that personal characteristics noted as being a component of commitment propensity affect subsequent attitudes such as commitment. Such personal characteristics are a strong desire for an organisational career, desire for familiarity with an organisation’s core values, self efficacy and self confidence. Cohen (2007) agrees that commitment propensity influences the ability and likelihood of actual commitment to the organisation once employment has begun.

Organisations also have some power to positively influence early commitment through recognition of the psychological contract and its role in preventing a reduction in affective commitment. Psychological contracts were defined by Rousseau (1995) as a set of mutual obligations between the employee and their work organisations. This contract is not documented, but is implicit in the mind of the receiver; it occurs when individuals believe that their organisation has promised them certain inducement in return for their contributions (Turnley & Feldman, 2000). Both these definitions suggest two parties, but the extent to which the employer makes promises but leaves these undocumented is questionable; it seems some promises may be documented, but others may be made verbally and not followed through. There is no doubt that psychological contract fulfilment has an association with affective organisational commitment (Johnson & O’Leary-Kelly, 2003; Sturges, Conway, Guest & Leifooghe, 2005).

As with all contracts, when the promise (documented or implied) is broken, the contract is said to have been breached. Events that lead to a breach of contract are described as “An
imbalance in the exchange relationship or failure to comply with the terms of an agreement” (Rousseau, 1995). As contract fulfilment leads to affective commitment, it follows that contract breach leads to negative outcomes variously described as a negative emotional reaction and negative behaviour such as lower commitment (De Vos & Meganck, 2009; Rousseau, 1995); increased turnover (Eisenberger, Jones, Aselage & Sucharski, 2005) and intention to leave (De Vos & Meganck, 2009). Robinson (1996) actually measured a positive correlation between psychological contract breach and actual staff turnover. To further explain the association between the psychological contract and an employee’s intention to leave, Blomme, van Rheede and Tromp (2010) specifically measured the impact of 11 items thought to be included in the psychological contract on intention to leave amongst hotel staff. Of the eleven, job content explained male respondents’ intention to leave, whereas affective commitment, job content, work-family balance and promotion opportunities significantly related to intention to leave. In this study, affective commitment was found to have a mediating effect on intention to leave, as could be expected.

The nature of a contractual relationship is also felt in the development of normative commitment. Where a graduate perceives the organisation has fulfilled its contractual duties, they may feel that leaving the organisation would be a breach of the contract on their part. Scholl (1981) calls this process the norm of reciprocity in which an organisation rewards an individual beyond what is expected and so the individual feels obliged to reciprocate, in this circumstance with commitment. Clugston, Howell and Dorfman (2000) agree that normative commitment tends to be related to processes in the early stages of socialization and the perceived psychological contract between the organisation and the individual.

There is no literature investigating the role of GDPs within a psychological contract, possibly because as Dainty, Bagilhole and Neale (2000) explain, during the early career stage career expectations of construction graduates were met through the “structured nature of their progression” through a graduate training program (Dainty et al., 2000, p.172). De Vos and Meganck (2009) find that career development is perceived by employees as being an important element of the psychological contract. However HR managers are focussing retention practices on those factors believed to cause staff turnover (for example the practice of career opportunity within the organisation, which if not implemented leads to
turnover of staff) rather than those that result in retention. The evaluation of promises about career opportunities appears to be most predictive of employees’ intentions to leave and of their job search behaviours and is also strongly predictive of employee loyalty. Career development should be considered as a core practice for both contract fulfilment and for employee retention. Training is commonly adopted as an element of career development; it has been found to be an expectation of employees, where violations of training obligations occur, it has resulted in reduced organisational commitment (Granrose & Baccili, 2006).

7.2.3.1 Professional commitment

An additional component of the field of commitment is the study of professional or career commitment. Workers were identified by Gouldner in 1957 as either cosmopolitans – those who place greater importance on the profession, or locals – those who place greater importance on the organisation. This is partly supported by Somech and Bogler who suggest that professional commitment a measure of the degree of importance of work in an employee’s life (Somech & Bogler, 2002).

The relationship between organisational commitment and professional commitment was defined as conflictual (Kabanoff, 1980; Wallace, 1993). Kabanoff proposed that dissatisfaction with the employing organisation may be compensated by commitment to the profession. Wallace found that where a teacher has high professional commitment they are more likely to work as an individual, and that teachers with high organisational commitment demonstrate behaviour consistent with achieving organisational goals. However both behaviours may occur at the same time. Additional investigation into the field has tended to disagree with the conflict theory: Baugh and Roberts (1994) and Wang and Armstrong (1994) found a moderate to strong correlation between professional and organisational commitment; Somech and Bogler (2002) found a positive relationship between them. Dwivedula and Bredillet (2010) investigated commitment amongst project workers and confirmed that affective, continuance and normative organisation and professional commitment correlate.

Although Leong, Huang and Hsu (2003) argue that professional and organisational commitment are distinct and are not influenced by each other, several authors have found
similar antecedents and consequences. Amongst the teachers, Somech and Bogel (2002) found that participation in technical and managerial decisions enhanced professional commitment. Further, both organisational and professional commitment were found to be positively associated with organisational citizenship behaviour towards the student. More relevant to the current research, Mor Barak, Nissly and Levin (2001) found that, amongst child welfare workers, organisational and professional commitment were some of the best predictors of intention to leave but cautioned that the intention to leave was not always followed up with quitting because of the intense emotional nature of the work and the perceived reliance of the customer on the worker.

7.2.4 Commitment in the construction industry

Commitment in the construction industry has received little attention, as Lingard and Liu (2004) agree. Much of the research investigating commitment within this context has sought to identify the antecedents of commitment within minority populations in the industry. For example, Lingard and Lin (2004) explored the relationship between the experiences of women in construction and their commitment; Liu, Chiu and Fellows (2007) investigated the impact of work empowerment on commitment amongst quantity surveyors in Hong Kong. Dainty, Price, Greasely, Soetanto and King (2005) examined operative’s behaviours that implied project affinity, a variable thought to influence project commitment.

Findings of previous research emphasise the need for construction organisations to empower their quantity surveyors (Liu et al., 2007) and that career variables has stronger influence than family variables on commitment of female employees in the Australian construction industry (Lingard & Lin, 2004). In particular, career variables related to career progression as a result of career management and sufficient training opportunities were found to be predictors of organisational commitment.

Although the study by Lingard and Lin is limited in that the population was restricted to female construction employees, it is interesting to the current research to note that training opportunities were found to positively influence commitment. It suggests that the current research might find that where training is provided to graduates, commitment and retention are increased. This is despite the graduate having just completed several years of tertiary education, and it requires clarification – is it the provision of training itself that is a
predictor of commitment, or career management, of which training is a component, that is a predictor of commitment. Lingard and Lin do not discuss the element of commitment that is influenced.

### 7.2.5 Commitment and staff turnover

Generally the literature agrees that organisational commitment is a useful tool to predict staff turnover or specifically intention to quit. Evidence to support this relationship is provided by Porter, Steers, Mowday and Boulian (1974), Hackett, Bycio and Hausdorf (1994), Gellatly, Meyer and Luchak (2006) and Lee, Lee and Lum (2008). However a large proportion of authors have not expressly investigated this relationship, instead including staff turnover as a potential outcome from measuring commitment. These authors include Coyne and Ong (2007), Frye and Breaugh (2004), Gellatly, Meyer and Luchak (2006) and Sheridan (1992).

Amongst those who found a significant statistical relationship between commitment and turnover are Porter et al. (1974). Their research assumes a single form of commitment, involves longitudinal measurement at three time points and post measurement division of the sample into stayers and leavers. Their results find that as the individual nears their point of departure, commitment to the organisation decreased so that the gap between commitment amongst stayers and commitment amongst leavers grew larger. Hackett et al. (1994) measured intention to quit against the TCM of commitment. His results show that, of the three components of commitment, affective commitment has the strongest relationship with intention to quit. Gellatly, Meyer and Luchak (2006) measured affective, normative and continuance commitment against behaviours defined by Meyer and Herscovitch (2001) as primary that is, intention to stay and discretionary (ie. citizenship). Gellatly et al. provide evidence that intention to stay correlates significantly with commitment and that organisations can improve staff retention rates by working to foster any one of affective or normative commitment or a reduction in continuance commitment. Sheridan (1992) found that an organisation’s cultural emphasis on interpersonal relationships correlated with lower turnover (from Vandenberghe & Piero, 1999); this variable has already been seen as an antecedent of affective commitment.

Broadening the knowledge of antecedents Lee, Lee and Lum (2008) investigated the presence of employee services (such as health benefits and child care) in relation to
commitment and intention to quit. As might be expected, their results show a significant positive relationship between services and organisational commitment, and a significant negative relationship between services and intention to quit. The process behind this ideal relationship is explained by Frye and Breauh (2004) as a result of improving the balance between work and family responsibilities.

Besides the evidence provided, the prevalence of studies that relate commitment and intention to quit indicates the level of acceptance that this relationship affords. Research in the USA into turnover has been encapsulated: “individual satisfaction, commitment and intention…have been the most influential predictors of turnover (Hom and Griffeth, 1991, 1995; Hom and Kinicki, 2001; Lee, 1996; Lee & Mitchell, 1994; Mobley, 1977; Tett & Meyer, 1993)” (Peterson, 2007, p.770). Also, the relationship between intent to leave and actual staff turnover is supported by Good, Sisler and Gentry (1988) who described intent to leaver as a surrogate for actual turnover. More recently, the net of research into commitment has widened to investigate phenomena such as commitment and organisational citizenship behaviour (such as a positive attitude and avoiding complaining). Coyne and Ong (2007) found that sportsmanship is significantly linked to staff turnover intention, where commitment is a predictor of sportsmanship (identified by O’Reily & Chatman, 1986 and Williams & Anderson, 1991).

The purpose of the current research is not to debate the reliability of commitment as an antecedent of staff turnover; this has been adequately addressed by previous research such that it is possible to assume that commitment (particularly affective, and less so, normative) is an indicator of future turnover. Given this, the current research now proposes to measure commitment of graduate employees in the sample organisations from Phase 1. Phase 2 will also measure training undertaken, to establish the relationship between presence of training activities and commitment amongst the graduates in the construction industry. Using the established theory that commitment is a useful predictor of staff turnover, Phase 2 will facilitate discussion on the theory that provision of training activities to graduate employees leads to a decrease in turnover, enabling discussion on whether or not formal graduate development programs are successful.
7.3 Phase 2 Method

7.3.1 Measurement Material

Until the development of Meyer and Allen’s (1997) TCM and related instrument, there was a disjointed approach to measurement of commitment. Since the prototype commitment theory developed by Porter et al. (1974) only embraced a single form of commitment, it was appropriate that the tool developed by Porter et al. measured this single form. In fact the tool, the Organisational Commitment Questionnaire (OCQ), consisted of only 15 items. Some researchers have adapted the OCQ to suit different environments and populations, or merely to suit the particular researcher. For example, Buchanan (1974) chose to adopt the single commitment theory, but not the instrument. He instead combined two pre-existing scales developed by Hall, Schenider and Nygren (1970) and Lodahl and Kejner (1965) and added a scale of his own. Cook and Wall (1980) were critical of the OCQ because of its history of development and use in America which, they believed, made it inappropriate for use in other countries. They commented specifically on how many people had adopted the theory, but developed their own measurement, often for specific populations. Cook and Wall correctly note that the number of different instruments that were developed to measure organisational commitment makes it impossible to compare results; they also comment that the studies they reviewed failed to provide psychometric support and failed, on the whole, to list the items used in their instruments.

Besides this disjointed approach to earlier commitment measures, the primary concern for using the OCQ today is that research now subscribes to a different theory: the three components model, and measuring commitment as a single affection does not reflect the three components. Benkhoff (1997) also highlights a further problem with the OCQ: that the alpha co-efficients of the OCQ (between 0.82 and 0.93) are not sufficient, given that Cronbach’s alpha automatically rises with the length of the questionnaire. He also points out that factor analysis of the OCQ does not support the claim for homogeneity nor provide evidence against it.

The arguments against the OCQ are now obsolete since the development of the TCM by Meyer and Allen (1991) and subsequent revision of the scale in 1997. Meyer and Allen (1997) measure each component of commitment using separate scales with a total of 24
items. Quantitative support for the scales comes from the median reliabilities (Cronbach Alphas) of 0.85, 0.79 and 0.73 for affective, continuance and normative commitment scales respectively. Jackson (2006) suggests that where reliability can be reported between +/- 1.0, scores above +/- 0.7 are considered strong. The scales have acceptable discriminant validity of the three dimensions, and research findings show acceptable content validity of the three dimensional approach (Cohen, 2007). However Cohen (2007) reports that the scales have limited predictive validity and that there is ongoing debate about the relationships between normative and affective commitment and some ambiguity over the definition of continuance commitment. Meyer and Allen (1997) argue that the TCM scale demonstrates a pattern of empirical findings that match the hypothesized pattern and therefore there is evidence the scale has construct validity. This is despite the nature of the scale requiring self-reporting and it is possible subjective responses may not be accurate. However, the literature supports the use of self report measures for collecting data on behavioural, cognitive or affective events (Leary, 2001), such as feelings about working for an employer.

The TCM continues to be adopted as the measurement tool where commitment profiling is carried out (for example, Gellatly, Hunter, Currie & Irving, 2009), but the current research does not follow the practice of commitment profiling. The purpose of this research is to measure the effects of specific interventions (training and development activities) on each commitment component. Whilst it is recognised that there is a great deal of benefit to profiling and that commitment can be considered as a homogenous emotion, the more intricate relationships being investigated here benefit from the individual components approach.

Jackson (2006) raises two questions to ask when employing a self report instrument:

1. Are participants being truthful?
2. How accurate are participants’ memories?

In response to the first question, Hoareau (2008) concludes that where participants of research intentionally provide incorrect data, research has no reliable, methodological response. A partial solution is the comparison of quantitative responses to the TCM scale with qualitative comments from the individual regarding their commitment to the organisation, collected during the informal part of the interview. If the participant has provided true data during the qualitative stage of the interview, then this process enables
conflicting data to be identified. The shortfalls of this technique are that it relies upon the qualitative comparative evidence being present; and this method does not facilitate replacing the biased data with correct data; the data supplied must be removed from the analysis.

Although the research is investigating current commitment levels, the second question should be addressed with regard to collecting historical data regarding recollection by graduates of previous job interviews and training activities. It is acknowledged that asking questions about past events does not guarantee the accuracy of the memory; this phenomenon is known as retrospective bias. Wagenaar (1986) quantified retention of events and found up to 20% of events are forgotten 12 months later, while up to 50% of events are forgotten five years later. However the nature of the questions and event being recalled influences the chance of the recollection being accurate. It is known that subjective autobiographical memory is much more unreliable (Stone, Bachrach, Jobe & Kurtzman, 1999) than objective memory of events. For example, the research instrument asks graduates about the number of interviews they had prior to being offered employment, and who was present at the interviews. This type of memory is more likely to be accurately recalled than more detailed aspects such as the time and date of the interview and the emotions felt before, during and after the interview. The current investigation has two advantages: firstly, data such as time, place and those present at the interview are not critical to answering the research question. Secondly, none of the participating graduates have been with their current employer longer than three years. Hoareau (2008) also notes that the occurrence and frequency of “do not know” responses or missing data might reveal a case of memory failure. The interview format with participating graduates has some techniques to minimise memory loss: firstly the list of training activities included in the interview will prompt the graduate; secondly, the data collected during prior interviews with the organisation (Phase 1) will give the research a grounding in the activities implemented, and thirdly interviews with graduates within the same organisation will also give the research a picture of current activities which can be used in general discussion with each graduate. There may be instances in which one graduate receives different training to other graduates in the same organisation; this might be a result of the allocation of training being the responsibility of a graduate’s supervisor and so the amount of training undertaken may vary from one person to the next in the same organisation. Again, the Phase 2
interviews include informal discussion which can be used to guide questions on different training philosophies within the same organisation.

One resolution to the problems with the OCQ is to use the TCM scale instead (Benkhoff, 1997). Arnold and Bosley (2000) identified the TCM scale as appropriate for measuring commitment and intention to leave because of the number of times the scales have been previously used, facilitating testing and comparison of results. Smeenk, Eisinga, Teelken, and Doorewaard (2006) report that the TCM scale has become a widely used instrument to measure affective, continuance and normative commitment.

Despite some criticisms of the TCM, its role in measuring commitment is generally supported in the literature and therefore it is a valid measurement in this research. Subsequent causal interpretations are the responsibility of the researcher rather than the tool.

The tool accompanying the TCM contributes the third component of the interview with graduates. The complete interview begins with informal gathering of qualitative data relating to the graduate’s career in the construction industry and their introduction to the current employer, including questions to ascertain the recruitment process and the number of interviews completed. This is followed by information on the types and frequency of training activities undertaken; this component is prompted by the same list of activities used for employer organisations in Phase 1, but there are open-ended questions at the end of this component which allow the graduate to expand on their response and include activities not listed. The third and final component of the interview requires the graduate to complete the 18 item TCM commitment tool which adopts a seven point Likert measurement scale. This is undertaken before the interview closes, but the interviewer does not speak during this component, allowing the graduates to consider their response to each item privately (for complete graduate interview schedule, see Appendix D).

Phase 2 of the research can be located within the overall research methodology as shown in Table 3.2. Phase 2 addresses the subsidiary research questions:

RQ2: What training and development activities are undertaken by graduates? and
7.3.2 Phase 2 Ethics

This phase of data collection from graduates required ethical approval. No issues were anticipated; graduates were assured of the same anonymity as the organisations with each individual given a numerical code for identification during analysis. A plain English statement was sent to the organisation who then distributed it across their graduate employees. This process was preferred by the organisation to protect the individual identity of the graduates. The statement included contact details so that graduates choosing to participate could get in touch with the researcher to request further details or to arrange a suitable time for the interview. In this way graduates making contact indicated their permission to proceed. Interviews were carried out at the graduates’ workplaces and were digitally recorded.

The interview collected some qualitative data regarding the duration of their employment, and the type and frequency of training undertaken by the graduate. Following the conclusion of the interview graduates were asked to complete the TCM and were allowed to do this without interruption unless they sought clarification. The interview was rated as having minimal social or psychological risks as the information requested was not intrusive, although graduates were still able to offer their opinion in confidence if they felt it was appropriate. There was no physical risk to the graduate, and breach of privacy was prevented by the names being retained in a place separate to the opinions and other information collected.

Ethical approval was granted by the RMIT University Human Research Ethics Sub-Committee and participants were then recruited.

7.3.3 Phase 2 Participants

The target population for Phase 2 was graduates employed by the 17 organisations whose managers were interviewed for Phase 1 of the current research. Graduates outside of these organisations were excluded because it would not be possible to compare their individual
reports of training and development with those of their employers. Each organisation was contacted, requesting an interview with the original Phase 1 respondent on behalf of the organisation. The interview consisted of a brief presentation of results of Phase 1, emphasising the desirable outcomes of GDPs or informal training. The need to collect further data from graduates was explained, and permission sought to contact graduates and conduct individual interviews. Of the original 17 organisations that participated in Phase 1, nine agreed to provide access to graduates. Those organisations that declined to continue cited reasons such as not employing graduates any longer, a change in organisation structure, and the organisation’s respondent in Phase 1 having been replaced and the person now in that position not being willing to proceed.

The organisations were given plain language statements explaining Phase 2, and if requested, a copy of the commitment measurement tool. Organisations were protective of their graduates’ identities and so the plain language statement was emailed by the organisation to their graduates, asking interested graduates to contact the researcher. Interviews were arranged and conducted at the graduates’ places of work. Interviews were digitally recorded. The interview form for graduates can be viewed in Appendix E.

7.4 Conclusion

Phase 1 of the research identified skill acquisition and retention as desirable outcomes from GDPs. It was then argued that skill acquisition was measurable but would require a different sample method than had been adopted for this research in order to provide reliable and valid outcomes. As very little information is kept regarding staff exiting the organisation, historical data enabling a correlation between training and retention is not possible. Therefore a relationship must be identified between a measurable variable and retention. This chapter reviewed the literature around organisational commitment and its ability to predict staff retention. There was found to be a substantial number of studies investigating commitment in different industrial contexts, although less frequently in the construction environment. Given the acceptance that commitment is significantly related to retention, a statistically reliable and popular tool was identified that could be included in the Phase 2 survey of graduates in order to measure organisational commitment.
This chapter then described the process of recruiting graduates from the Phase 1 organisations. With the assistance of the organisations, 28 graduates agreed to participate in Phase 2 of the research. The interview for Phase 2 composed two parts: the first collected data about the type and frequency of training undertaken by the graduate. The second part used the TCM to measure graduate commitment to their employer.

The next chapter presents analysis of the data collected in order to identify which, if any, training activities are significantly related to affective, normative or continuance commitment.
Chapter 8  Phase 2 Results

8.1 Introduction

This chapter describes the analyses undertaken with the Phase 2 quantitative data including any relationship that can be established as a result of commitment scores being significantly related to the presence (or lack) of GDP. The chapter provides results relating to the testing of normality of the data, homogeneity of variance and descriptive results. Inferential analysis is then carried out initially using independent groups t-test to test for significance of the commitment scores relative to presence of a GDP. Further inferential analysis involves investigating any correlation relationship between commitment and tenure and between commitment and previous experience in the construction industry before joining the current employer.

In Phase 2, respondents’ commitment was measured using Meyer and Allen’s (1997) three component commitment scale. Twenty-eight cases were generated from nine of the organisations that took part in the first stage of the research (Phase 1). Quantitative data was entered and analysed using SPSS v.15. Each case was reviewed for data entry errors.

It is important that the strategy for analysing commitment scores be clarified here. Although commitment may be discussed broadly as a single affect, the model being used here has three components: affective, normative and continuance commitment. It is important to treat these components as individual results because affective and normative commitments are emotional forms of commitment. Continuance commitment is a result of the environment: “I would lose something if I left, therefore I am staying – not because I like it here”. Whilst a high affective and normative score is desirable, a high continuance commitment score is undesirable.

8.2 Normality testing of the data

Prior to inferential analysis of the data, it was assessed for normality. Data that are “normal” are free of forced results where a participant has completed a measurement
without regard to actual feelings. The tests establish if the data collected approximates a normal distribution and this then directs the research to the appropriate form of inferential analysis.

Four tests exist to establish normality of data:
1. visual inspection of stem and leaf plots
2. visual inspection of normality plots
3. skewness/standard error of skewness
4. Kolmogorov-Smirnov test

The first two tests involving visual inspection are subjective tests. The second two tests are statistical.

Stem and leaf plots were inspected for location of the median which for normal data should be positioned in the centre of the box showing the range from the 25th to 75th percentile. The median location for these data was considered acceptable. The inspection of the normality plots revealed satisfactory occurrence of linear pattern of responses. Detrended normality plots showed satisfactorily random distribution of the responses. Visual inspection for outliers also detected no incorrect data entry.

The test for skewness divided by standard error of skewness revealed extreme scores of +1.759 and -1.771. Coolican (2004) indicates with regard to the level of acceptable skewness that “quite a bit of tolerance is usually allowed in this”. It is also a “common rule of thumb is that the value of the skewness… statistic should not be greater than twice the value of the standard error”. When this rule is applied, 6 variables (out of 36) showed a skewness value greater than twice the standard error.

The Kolmogorov-Smirnov test for normality was revised to the Shapiro-Wilk test to take into account the small sample size (Coakes & Steed, 2001). The results of this test showed 15 out of 36 scores to be $p <0.05$ and hence do not reflect normal data.

Three of the four tests show normality. Given that normality is much harder to achieve with a small sample, this is considered a satisfactory result and the appropriate parametric data analysis for two groups and one independent variable is determined to be the independent samples t-test which will compare mean commitment scores.
8.3 Homogeneity of Variance

Before any inferential statistical analysis can be carried out, the data must be tested for homogeneity of variance. That is, the assumption that the groups come from populations with equal variances (Coakes & Steed, 2001). This test is pertinent when using a $t$-test which assumes homogeneity of variance.

The appropriate test for homogeneity of variance is Levene’s test; it has an advantage over other tests in that it does not require the data to be normal in order for the test to be reliable. Although normality testing on the data concluded that the data were generally normal, particularly taking into account sample size, Levene’s test is more appropriate here, whereas other tests require data to be absolutely normal.

If Levene’s test is not significant then it can be assumed the population variance is approximately equal. When the aggregate commitment scores are tested, the significance values are $p = .65$ (affective commitment) .32 (normative commitment) and .91 (continuance commitment) indicating that the assumption for homogeneity of variance has been met.

8.4 Reliability

Cronbach’s alpha is the reliability test used to establish the reliability of scales. An alpha result of 0.75 or higher is indicative of good reliability. Meyer and Allen’s (1997) original reliability results were 0.85, 0.79 and 0.73 for affective, continuance and normative commitment.

Analysis of the Phase 2 data results in alpha values of 0.796 for both the affective and continuance commitment scales, and thus indicate good reliability. However the alpha value of 0.683 for the normative commitment scale is below that recommended to indicate good reliability. Caution will be used in interpreting any significant results relating to normative commitment.
8.5 Descriptive results

The statistical analysis technique adopted for the data collected was independent samples t-tests in which the affective, normative and continuance commitment scores were the continuous variables. The test was repeated for each training activity (categorical variable).

The data were examined to summarise and describe the observations. Table 8.1 displays the results and Appendix E displays the responses from graduate interviewees.

Three important results were found as a result of the descriptive analysis: the presence of a mentoring program, the graduate having previous construction experience, and the occurrence of in-house seminars and workshops. A mentoring program and in-house seminars are significantly more likely to be part of a formal GDP than an informal training program. These outcomes are somewhat predictable; an organisation that has the facilities to implement a formal GDP is more likely to invest in implementing a mentoring program when compared with an organisation that does not implement a GDP. As organisations that implement GDPs are large, it follows that they have sufficient and appropriate mentors available in addition to the infrastructure required for a mentoring program. Although it might be that the infrastructure follows the mentoring program; this is unlikely but should not be ruled out. Organisations that implement GDPs are also more likely to prefer in-house seminars over external seminars; again, having sufficient graduate employees allows the organisation to achieve economies of scale in programming in-house seminars for all employees, on topics which the organisation feels are necessary, over the cost of sending small groups or individual employees to training programs delivered externally. All the Phase 2 graduates undertaking a GDP had participated in in-house seminars. Participating in a GDP was also significantly more likely for those graduates with previous construction experience.
Table 8.1

Experiences of participants by GDP or no GDP.

<table>
<thead>
<tr>
<th></th>
<th>All</th>
<th>GDP</th>
<th>No GDP</th>
<th>$\chi^2$</th>
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<tr>
<td></td>
<td>N=28</td>
<td>n=12</td>
<td>n=16</td>
<td></td>
<td>NS</td>
</tr>
<tr>
<td>Mean tenure (months)</td>
<td>5.81</td>
<td>5.75</td>
<td>5.86</td>
<td></td>
<td>NS</td>
</tr>
<tr>
<td>Previous construction experience</td>
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<td>$f=11$</td>
<td>$f=9$</td>
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<td>.04</td>
</tr>
<tr>
<td></td>
<td>(71%)</td>
<td>(91%)</td>
<td>(56%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean duration of previous experience</td>
<td>6.10</td>
<td>6.18</td>
<td>6.00</td>
<td></td>
<td>NS</td>
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<td>(months)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job rotation</td>
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<td>$f=5$</td>
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<td>.063</td>
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<td></td>
<td>(46%)</td>
<td>(66%)</td>
<td>(31%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In-house seminars</td>
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<td>$f=12$</td>
<td>$f=11$</td>
<td>4.565</td>
<td>.033</td>
</tr>
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<td></td>
<td>(82%)</td>
<td>(100%)</td>
<td>(68%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>External seminars</td>
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<td>$f=10$</td>
<td>$f=9$</td>
<td></td>
<td>NS</td>
</tr>
<tr>
<td></td>
<td>(67.9%)</td>
<td>(83.3%)</td>
<td>(56.3%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mentoring program</td>
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<td>$f=10$</td>
<td>$f=3$</td>
<td>11.499</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>(46.4%)</td>
<td>(83.3%)</td>
<td>(18.8%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Career planning information</td>
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<td>$f=4$</td>
<td>$f=1$</td>
<td>3.429</td>
<td>.064</td>
</tr>
<tr>
<td></td>
<td>(17.9%)</td>
<td>(33.3%)</td>
<td>(6.3%)</td>
<td></td>
<td></td>
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<tr>
<td>Career discussion within organisation</td>
<td>$f=24$</td>
<td>$f=10$</td>
<td>$f=14$</td>
<td></td>
<td>NS</td>
</tr>
<tr>
<td></td>
<td>(85.7%)</td>
<td>(83.3%)</td>
<td>(87.5%)</td>
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<tr>
<td>Psychological testing</td>
<td>$f=7$</td>
<td>$f=5$</td>
<td>$f=2$</td>
<td></td>
<td>NS</td>
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<tr>
<td></td>
<td>(25%)</td>
<td>(41.7%)</td>
<td>(12.5%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interviews</td>
<td>$f=27$</td>
<td>$f=12$</td>
<td>$f=15$</td>
<td></td>
<td>NS</td>
</tr>
<tr>
<td></td>
<td>(96.7%)</td>
<td>(100%)</td>
<td>(93.8%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No of interviews (n=27)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>NS</td>
</tr>
<tr>
<td>1</td>
<td>$f=15$</td>
<td>$f=6$</td>
<td>$f=9$</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(55.6%)</td>
<td>(50%)</td>
<td>(60%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>$f=12$</td>
<td>$f=6$</td>
<td>$f=6$</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(44.4%)</td>
<td>(50%)</td>
<td>(40%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performance appraisal</td>
<td>$f=18$</td>
<td>$f=7$</td>
<td>$f=11$</td>
<td></td>
<td>NS</td>
</tr>
<tr>
<td></td>
<td>(64.3%)</td>
<td>(58.3%)</td>
<td>(68.8%)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Graduates employed for less than 3 months were excluded from the research as during this phase of settling in commitment scores are unstable (Buchanan, 1974; Mowday and McDade, 1979; Porter et al., 1974; Meyer and Allen, 1987, 1988).
This is an interesting outcome. It is possible that some graduates get their first work experience with a small construction organisation and then deliberately seek subsequent employment in larger (more prestigious) organisations that have a formal GDP. Or it may be that organisations that run GDPs seek graduates with construction experience, although the qualitative findings from Phase 1 indicated that some large organisations prefer to recruit straight from University.

The presence of a job rotation program and career planning information within a GDP were just outside of the statistical definition of significance. Graduates participating in a GDP are more likely to encounter these training activities than graduates not participating in a GDP.

Of the 28 graduates that participated in Phase 2, seven came from one organisation; the remaining eight organisations contributed between two and four graduates each. The distribution of graduates from organisations is shown in Figure 8.1. The large number of graduates from one organisation might be expected to skew the data. Testing was carried out to identify any activities that this organisation might be implementing that was significantly related to commitment; none were found.

8.6 Graduate Development Program and Commitment.

Commitment is measured as three separate components: affective, normative and continuance. Table 8.2 shows mean commitment scores across the sample. The sub-group who participate in a GDP show a mean affective score of 31.42, a mean normative score of 28.33 and a mean continuance score of 16.00. The sub-group who do not participate in a GDP show a mean affective score of 29.94, a mean normative score of 27.88 and a mean continuous score of 17.99. These results are very similar, but show a slight positive trend amongst those experiencing a GDP, with higher desirable commitment and lower undesirable commitment than those not experiencing a GDP. However none of these results are statistically significant.

The greatest difference between the groups occurs with continuance commitment where GDP graduates mean result is 16.00 compared to non-GDP graduates result of 17.99. Although this is a trend in the right direction for organisations choosing to implement a GDP, this result is not significant \((p=.466)\).
Figure 8.1

*Distribution of graduates by organisation*

Table 8.2

<table>
<thead>
<tr>
<th></th>
<th>Mean score</th>
<th>GDP</th>
<th>No GDP</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affective commitment</td>
<td>30.57</td>
<td>31.42</td>
<td>29.94</td>
<td>NS</td>
</tr>
<tr>
<td>Normative commitment</td>
<td>28.07</td>
<td>28.33</td>
<td>27.88</td>
<td>NS</td>
</tr>
<tr>
<td>Continuance commitment</td>
<td>17.07</td>
<td>16.00</td>
<td>17.99</td>
<td>NS</td>
</tr>
</tbody>
</table>

Note: Each component is measured using 6 items and a 7 point Likert scale; the maximum score for each is 42, the minimum score is 6.

Phase 1 of the research concluded with the hypothesis that graduates employed by organisations implementing a GDP are more committed than graduates employed by organisations not implementing a GDP. For this hypothesis to be supported a significant increase in affective or normative commitment in the group of graduates undertaking a GDP, or a decrease in continuance commitment in the same group would be required.

Although there is a positive trend associated with affective and normative commitment, and
a negative trend associated with continuance commitment, the result is not significant and therefore the hypothesis is not supported. However there is no evidence to definitively refute this hypothesis either and future research with a larger sample might find a significant result.

### 8.7 Training activities and commitment

Results of analysis of each training activity using independent samples t-test, carried out on the whole sample, then on the sample undertaking a GDP and finally on the sample not undertaking a GDP revealed three significant results:

1. Affective commitment was significantly higher where job rotation occurred, for the whole sample ($t(26)=2.108, p=.045, 95\% CI=(.103, 8.102), r=.55$)
2. Affective commitment was also significantly higher where job rotation occurred for the sub-sample who did not experience a GDP ($t(14)=2.274, p=.039, 95\% CI=(.369,12.613), r=.52$)
3. For those graduates not undertaking a GDP, mean continuance commitment scores were significantly lower where they were interviewed twice during the recruitment process ($t(13)=2.402, p=.032, 95\% CI=(.687,12.980), r=.55$).

SPSS output is available in Appendix F. Inspection of the mean affective commitment scores reveals an interesting comparison between the two groups for whom job rotation is significant. Where job rotation occurs, the mean affective commitment scores are higher for both the complete sample and the sub-sample not undertaking a GDP. However for those not undertaking a GDP, the mean affective commitment for those not undertaking job rotation within this sub-sample is 27.91 compared to a mean affective commitment score of 34.40 where job rotation were implemented. The equivalent result for the whole sample is 32.77 where job rotation were implemented, and 28.67 where job rotation were not implemented. This suggests that where other training takes place, the positive impact of job rotation was not as important as where other training did not take place (Table 8.3).

The sample that did not undertake a GDP but had more than one job interview reported a lower mean continuous commitment score ($M=13.17, n=6$) compared to the graduates who did not undertake a GDP but only had one job interview ($M=20.00, n=9$). This was the only significant result relating to continuous commitment ($p=.032$).
Table 8.3

*Mean affective commitment scores where job rotation is implemented*

<table>
<thead>
<tr>
<th></th>
<th>Mean affective commitment score</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Job rotation</td>
<td>No job rotation</td>
</tr>
<tr>
<td>Whole sample</td>
<td>32.77</td>
<td>28.67</td>
</tr>
<tr>
<td>No GDP</td>
<td>34.40</td>
<td>27.91</td>
</tr>
</tbody>
</table>

A number of trends were indicated by significant results tempered by a small or uneven sample or where significance was very weak. Where job interviews took place, the mean affective and normative commitment scores were found to be significantly lower across the whole sample (N=28) and the mean affective commitment score was lower for the sample not undertaking a GDP. When taking the whole sample into account, the significance of the mean affective commitment score was only $p=.052$, but the significance of the mean normative commitment score was a rather more respectable $p=.027$. Two constraints must be applied to this variable: first the single participant who failed to attend a job interview, and second the higher than desirable alpha value for the normative scale. Both of these suggest that treatment of this significance value is better interpreted as a trend rather than as a generalizable finding.

Amongst the sub-sample not undertaking a GDP, the mean affective commitment score was significantly lower for the single participant that reported being supplied with documented career planning information ($M=16.00$) compared to those that had not been given any documented career information ($M=30.87$, $p=.010$). Again in this sub-sample, two participants reported completing a psychological test and they indicated a lower affective commitment score ($M=22.50$) than those who did not complete a psychological test although the significance of this result was very weak ($M=31.00$, $p=.057$). A larger and more equal sample in future research might be able to offer further clarification of the role of documented career information and psychological testing.

In the sub-sample who undertook a GDP, external seminars and career discussions had a significant effect on affective and normative commitment respectively. External seminars were found to relate significantly to an increase in mean affective commitment score in this group. Those attending both a GDP and an external seminar reported a mean affective
commitment score of 32.80 compared to 24.50 for those who did not attend any external seminars \((p=.016)\). Again, the small sample inhibits reporting this with more confidence as a significant result; only two participants of the twelve in this group did not attend an external seminar. An insignificant value \((p=.092)\) was not considered worthy of further explanation for the difference in normative commitment score where career discussions had taken place.

Care must be taken when discussing these results. These relationships are discussed separately from the significant results which have much more integral strength. The first conclusion of this research is to state the need for further research with a larger sample size. Post hoc analysis was considered but not carried out due to the small sample size; results achieved thus far provide sufficient evidence that the sample size restricts the analysis and outcomes. Further analysis of the training activities found to be significantly related to commitment would be subject to the same sample restrictions and results would be unlikely to expose any further meaningful relationships. Figures 8.2 and 8.3 illustrate the significant findings and suggested trends arising from the research.

### 8.8 Conclusion

Of the twenty-eight interviews, twelve graduates were participating in a GDP, sixteen were not. No statistically significant results were found correlating any of the three commitment components to the presence or lack of GDP. Descriptive analysis revealed that those graduates participating in a GDP are more likely to encounter a mentoring program and in-house seminars. These graduates are also more likely to have acquired experience in the construction industry prior to joining their current organisation.

Some significant associations were found between individual training activities and commitment components, specifically:

- Job rotation and affective commitment for all graduates
- Job rotation and affective commitment for graduates not in a GDP
- Multiple interviews and continuance commitment for graduates not in a GDP
Figure 8.2
*Significant results by GDP or no GDP*

GDP

<table>
<thead>
<tr>
<th>Job rotation / affective commitment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple job interviews / continuance commitment</td>
</tr>
</tbody>
</table>

No GDP

| Job rotation / affective commitment |

Figure 8.3
*Trends by GDP or no GDP*

GDP

| External seminars / affective commitment |
| Job interview / affective commitment |
| Job interview / normative commitment |

No GDP

| Career planning information / affective commitment |
| Job interview / affective commitment |
The mean scores for affective and normative commitment were found to be significantly lower where job interviews took place, and it was found that for graduates not in a GDP, more than one interview led to a decreased continuous commitment score. Other significant results to be treated with caution include the relationship of commitment with external seminars, career discussions and career planning information.

These significant relationships are complex. They need to be compared with results from previous research, and explanations developed and offered for their occurrence. This will occur in the next chapter.
Chapter 9  Phase 2 Discussion

9.1 Introduction

This research has sought to ascertain if graduate development programs in the construction industry are successful. Phase 1 of the research defined successful as resulting in skill acquisition and graduate retention. Phase 2 of the research re-focused GDP success in terms of increased commitment and associated graduate retention. It measured graduate commitment (in a sample of 28 graduates) as an indicator of the intention of the graduate to remain with their employer. Chapter 7 presented the results of the statistical data analysis used to identify any significant relationships between specific training activities and the mean affective, normative and continuous commitment scores of the participants, comparing graduates undertaking a GDP with those who did not undertake a GDP.

Only two variables were found to be significantly related to any of the commitment components. The presence of job rotation resulted in an increase in the mean affective commitment score; this result occurred across the whole sample and was repeated for the sub-sample of graduates who did not undertake a GDP. Also, multiple job interviews were found to be significantly related to a lower mean continuous commitment score amongst the sub-sample who did not undertake a GDP. Other significant results occurred, but were treated cautiously as trends due to issues associated with sample size. Job interviews were found to be associated with a decrease in mean affective and normative commitment for the whole sample, but only with mean affective commitment for the non GDP sub-sample. Documented career planning information and psychological testing were associated with lower mean affective commitment for the non GDP sub-sample. External seminars were associated with higher mean affective commitment for the sub-sample that had undertaken a GDP.

This chapter compares these results with findings from the literature, explores potential interpretations and offers explanations. Each of the two significant results identified in Phase 2 are debated through describing the specific process that occurred, as described by the participants, relating their narratives to those published in literature. The significant result and the literature are juxtaposed for similarities that might assist with offering an
explanation. The results defined as trends are presented in the same manner. They represent an ambiguous outcome; there remains the possibility that if the research were to be repeated with a larger sample, the results may find a statistically significant and thus more conclusive outcome.

9.2 Significant results

9.2.1 Job rotation

The whole sample displayed an increase in mean affective commitment score where job rotation was encountered in the workplace. A similar result also occurred in the sub-sample not undertaking a GDP. These results were significant and therefore generalizable. Thirteen out of 28 graduates had experienced job rotation which was defined in the interviews as the process of experiencing different roles in the organisation over a period of time, usually two – three years.

The process of job rotation involves graduates moving laterally between roles, either intra-project or inter-project. Construction projects require different roles at different phases and this facilitates graduates moving from one role on a project to a different role on the same project as the project progresses; this is regarded in this thesis as intra-project rotation. Inter-project rotation is more likely to occur in conjunction with a necessity for graduates to experience certain pre-determined roles during a set period of time. Where this occurs, graduates often begin their rotation with estimating: “…the first place to put him originally was to put him with the estimator because straight off the back they go a knowledge (sic), they see lots of plans, they understand the process whereby a job from comes about” (Organisation 9) – it is an office role where they can be supervised and it gives graduates a good picture of what the whole project entails. It is thought to be a good introduction to construction. Other graduates report beginning rotation with document control – either for several projects in the main office, or for one project on site.

Intra-project rotation often occurs in organisations which espouse the concept that the project takes priority. Some of the organisations representatives interviewed in Phase 1 commented that the project rules, since if the project is not financially successful then no graduates are employed (Organisation 5). Thus rather than the organisation or graduate dictating the nature
and duration of job rotation, project needs are given priority. Intra-project rotation provides advantages for both the project and the graduate. The project benefits from team continuity throughout the project lifecycle. Where team members change mid-project, some disruption to progress occurs during the settling in of new members. However because the skill requirements of a construction project change over time, a graduate can be retained on the project and still experience different roles without the need for a change in the project team. Disruption to the project is minimised. Graduates benefit from intra-project rotation by experiencing a project from inception to completion, in addition to a reduction in the uncertainty that would be experienced when moving between projects and project cultures. However job challenge and associated stress may still be present during intra-project rotation.

Inter-project rotation occurs where an organisation places less emphasis on the project and more emphasis on formal control over the experience that the graduate gains. Where job rotation is formally implemented, the employing organisation documents and controls the rotation, moving graduates around different roles on a calendar basis, often appearing to be regardless of a project’s needs. A graduate experiencing formal inter-project rotation may get a wider variety of experience in a shorter space of time. But this may be accompanied by uncertainty from experiencing both new project cultures and colleagues at the same time as a new role. Both the culture and the role challenge are known to cause stress in new employees. The potential uncertainty encountered by the graduate as a result of changing projects frequently could be reduced by providing adequate information to the graduate ahead of the role change and by implementing actions to encourage all project cultures and employees to align themselves with the overall organisation culture and strategy. Uncertainty could also be reduced or offset through the provision of a consistent mentoring strategy.

There is potential for job rotation to positively influence affective commitment through meeting multiple graduate needs: variety, an appropriate level of challenge (without excessive stress) and career development carefully managed by the employing organisation. Each of these is associated with affective commitment and the influence is strengthened by the organisation recognising and meeting graduates’ needs. Intra-project job rotation has the added benefit of job security and the associated reduction in uncertainty, which enhances affective commitment. Inter-project rotation may be accompanied by uncertainty
and hence the effect on affective commitment may be reduced, but this can be overcome by adequate communication with the graduate pertaining to moves between projects.

The positive effect of career development on affective commitment is commented on by Campion, Cheraskin and Stevens (1994). They, and more recently Ho, Chang, Shih and Liang (2009) included commitment within their research on the effects of job rotation. Campion et al. investigated the impact of job rotation within an organisation exclusively practicing informal rotation but without the limitations of project work. Ho et al. positioned their research in the field of nursing. Both research programs found job rotation had a positive impact on commitment, but neither specifically identified affective, normative or continuance commitment. The absence of a specific component of commitment in their reports implies that at least one of the positive forms, affective or normative commitment, is improved with job rotation. Whilst Ho et al. are perhaps over cautious and do not offer an explanation for their finding, Campion et al. go to the other extreme and find four benefits of job rotation: career affect benefits, organisational integration benefits, stimulating work benefits and personal development benefits of which the first, career affect benefits, specifically includes commitment.

The conclusion of the current research that career development as a result of job rotation is at least partly responsible for the increase in affective commitment is supported by Campion et al. (1994). The need amongst graduates for career development, which is agreed upon by Terjesen, Vinnicombe and Freeman (2007), underlies this relationship.

Other needs of graduates have been identified as starting salary (Riordan & Goodman, 2007; Terjesen, Vinnicombe & Freeman, 2007). Terjesen et al. additionally reported that starting salary was desirable particularly by male generation Y graduates, but they also included training investment and variety in their expectations. Shaw and Fairhurst (2008) reported on ideal content of GDPs for generation Y graduates, and the need for challenge is included in their recommendations. Job rotation may contribute to the satisfaction of some of the need for challenge and it is not inconceivable that an organisation that encourages the adoption of training activities such as job rotation is likely to also encourage investment in other forms of training (Campion, Cheraskin & Stevens, 1994). Future research needs to collect data on training investment to make any conclusive statements on the possibility that organisations that coordinate job rotation also invest in other forms of training. Variety is an inherent
characteristic of job rotation as it occurs in the construction industry; graduates are aware that they will experience a change of role at a previously determined time in the future (formal job rotation) or they will experience a change of role as the project progresses (informal job rotation). Variety, acquired through a change in the role and responsibilities of the graduate - is perhaps more certain where job rotation is implemented formally. The need for challenge identified by Shaw and Fairhurst (2008) is partially satisfied by the presence of variety. A change in responsibilities will incur a degree of challenge whilst the graduate becomes accustomed to the new tasks. However it should not be taken for granted that variety and challenge are always found in partnership. Once the new task has been repeated a few times, it may be that the challenge initially found is replaced with boredom.

The need for challenge and its relation to job rotation is more complex. Aside from the nature of new tasks providing a challenge for a period of time, and the understanding that this challenge may not be ongoing, it should also be noted that too much challenge may be just as detrimental to commitment as not enough challenge. Inter-project job rotation poses the greater risk of too much challenge as challenge occurs both with each new role as well as each new project and its associated culture and colleagues. The ability of graduates to embrace challenges is moderated by the organisation’s awareness that the challenge exists and ability and willingness to manage the degree of challenge faced by the graduate. One Phase 1 organisation used the following analogy to explain their philosophy towards how graduates should take on challenges: “…you put them into a pool, you chuck them in and they flounder and they flounder but you’ve got to be there so that the moment they go under, right, you let them, they can go under for a little while, because that all builds stamina sort of thing but then you pull them straight back out so they’re up again... so they’ve got to be under a little bit of pressure” (Organisation 9). This approach describes a reasonable expectation of the behaviour of a construction organisation, but if the graduate is unaware that their dealing with challenge is being monitored then they may have the perception of being left to drown, to continue the analogy. What, then, is the relationship between job challenge and organisational support or mentoring and how does this impact affective commitment? It is suggested that the presence of a supportive environment or a successful mentoring relationship enables greater challenges to be taken on without a decrease in affective commitment. Literature does not address this question and this research recommends this should be the subject of future investigation.
Although the research sample is relatively small, the significance of the result discussed here is not threatened by unequal sub-groups. Therefore it is safe to conclude that job rotation is associated with an increase in affective commitment, and that job rotation should be encouraged within construction organisations, as part of the implementation of a GDP. However organisations should consider the advantages and relative disadvantages of formal inter-project and informal intra-project rotation from the perspectives of the project and the graduate before deciding which form the rotation should take.

9.2.2 Job interviews

Job interviews were found to be significantly associated with lower mean affective and normative commitment scores across the whole sample. However this result is considered unreliable as there was only one graduate who did not attend a job interview prior to being employed. These results are therefore regarded as trends instead of significant results and should be the subject of further research.

A more interesting result is the significant impact of multiple interviews on continuous commitment. Amongst those graduates not undertaking a GDP, attending more than one interview was associated with a lower mean continuous commitment score. Since continuous commitment is an undesirable component for an organisation to observe, this seems initially to be a positive outcome. It is worth recapping the nature of continuous commitment as arising from the perceived cost of leaving (Becker, 1960) or as a result of a lack of alternatives (Meyer, Bobocel & Allen, 1991). Using the commitment profiles adopted by Sinclair, Tucker, Cullen and Wright (2005), a low continuance commitment score can indicate two extreme emotions in the individual: emotional attachment to the employer when combined with a high affective commitment score, or simply feeling uncommitted to the employer when combined with a low affective commitment score. The sub-sample of graduates who did not participate in a GDP and who attended more than one interview reported a lower mean affective commitment score than the group who only attended one interview, but this was not a significant result. However the mean affective commitment score of 27.5 is lower than the mean affective commitment score for the informal training sub-sample of 29.94 and they are therefore categorised as having low affective commitment (Sinclair et al., 2005).
Without profiling the multiple interview informal training sub-sample, a low mean continuous commitment score indicates that this sub-sample do not perceive that they would lose anything of importance to them if they left the organisation, and this perception is strengthened when two or more recruitment interviews are conducted. Taking into account the commitment profile, the research concludes that this group are likely to simply be uncommitted.

Graduates who had two interviews reported that the first interview seemed to be the more formal of the two, conducted by a senior representative of the organisation. The second interview included the organisation representative from the first joined by another manager, often a project manager. This data is reflective of current recruitment practices: Di Milia (2004) found that more than one interview is common - 48.1% of organisational respondents to an Australian survey reported they always conduct more than one interview and 42% of responses indicated that two to three people are present on interview panels. In the UK, Stewart and Knowles (2000) investigated recruitment practices in SMEs and found most interviews involved two or three people, and often multiple interviews, sometimes as many as three, were carried out, each with its own purpose. Informing the individual is a function of the interview which is critical to successful transition from graduate to employee. It serves two purposes: the individual gains some knowledge about the organisation, its expectations and the role the graduate is to fill; this knowledge may reduce early uncertainty which stems from lack of knowledge. Second, the individual enters the organisation with more realistic expectations of their employment conditions.

Riordan and Goodman (2007) recommend that job interviews should be used to communicate information about the nature of the work, procedures in the organisation and the “general pace of activities”. They also recommend that short listed candidates should be given a tour of the facilities. These recommendations are intended to reduce the amount of uncertainty a graduate might feel prior to, and in the early days, of employment. Personal communication with a newly employed construction graduate known to the researcher revealed the graduate expected to be paid overtime and receive Rostered Days Off (RDOs are a feature of the Australian construction industry, and involve all construction firms in a designated region regularly scheduling a specific weekday as a rest day for tradespeople) as a graduate management trainee. Clearly the organisation had not communicated to the graduate that these conditions are directed at tradespeople and so the graduate had unrealistic expectations.
The organisation may have assumed the graduate was aware of the limitations of RDOs. Although this is a single case and it would be false to transfer this portrayal to the whole construction industry, clearly there are instances of insufficient information being communicated to potential graduate employees. Riordan and Goodman (2007) found amongst their sample that organisations did not intentionally mislead graduates, but that they communicated nothing to create realistic expectations and in the absence of any guidance, graduates transferred their expectations to the organisation.

The benefits of multiple interviews also relates to antecedents of continuance commitment found by Meyer, Bobocel and Allen (1991). Apart from the cost of leaving created by benefits of working for an organisation, graduates who perceive there is no alternative employment had higher continuance commitment scores. Meyer et al. (1991) also confirmed in their study that graduates who decided to accept the offer of employment of their own free will reported a lower continuance commitment score. Although the surface causal sequence is that graduates who receive more than one offer of employment are more likely to make a decision to accept one offer and consider this decision one they have made without any external force, it is also possible that multiple interviews encourage the graduates to feel they have made a decision of their own free will regardless of the presence, or lack of, alternative offers and hence lower their continuance commitment. This outcome is supported by the findings of Scholarios, Lockyer and Johnson (2003) who found that the more complex and interactive the selection methods adopted by the prospective employer, the lower the continuance commitment scores were. This should be balanced with overuse of different selection techniques which, Scholarios et al. claim, can have the adverse effect of increasing continuance commitment.

This research suggests multiple interviews lowers continuance commitment in two ways. It is proposed that as the graduate attends two interviews, the opportunities for providing information to reduce uncertainty and moderate expectations are used. The graduates are more informed about the organisation and they have more realistic expectations which may reflect the benefits or lack of, of remaining with the organisation. These graduates are aware that they will not receive benefits (such as a car and health insurance) in the short term, and the graduates are therefore less likely to perceive these benefits as a reason for remaining with the organisation. Second, it is proposed that as the graduate learns about the
organisation, they feel empowered to make an informed decision to accept the offer of employment rather than have it forced upon them.

Although not a training activity, construction organisations should be encouraged to view job interviews as not just for the purpose of selecting the right individual, but also to inform the applicants about the organisation, its work, its needs to be fulfilled by the graduate, and how the graduate is to be compensated for their efforts. To accomplish this, it is recommended that construction managers conducting interviews acquire some knowledge regarding interview best practice. Whilst multiple interviews are not shown to be related to higher affective and normative commitment scores, it is still beneficial to know that employees report lower continuance commitment scores and therefore that graduates perceive they would not lose something of value if they were to leave or that there are alternative employers. Despite the negative connotations associated with continuance commitment, and the difficulty for an organisation eliminating alternative employers, organisations do have the ability (if not the desire) to provide retention incentives.

9.3 Other results

9.3.1 External seminars
Where the graduates had undertaken a GDP which included attending external seminars or workshops, there was a statistically significant higher mean affective commitment score ($p=0.016$). However these results are somewhat confounded. Further inspection reveals that, of the twelve participants in Phase 2 that had undertaken a GDP, all but two attended at least one external workshop. So although the higher mean affective score is significant, the significance should be treated with caution. This research argues that there is a trend towards higher affective commitment scores where a GDP is implemented that includes external workshops, but that this trend is not generalizable. However the relationship between external seminars and affective commitment has the potential to be significant in future research. To assist in giving future research a more definitive purpose, this trend will be explored here for potential explanations, beginning with further examination of this variable.

The subject matter of external workshops attended by graduates as part of a GDP is quite varied although occupational health and safety (OH&S) was the most frequently sourced
topic reported (four out of twelve Phase 2 graduates had attended OH&S or first aid courses). The relevance of some courses is obvious, providing graduates with skills that they can use at work immediately such as site personnel traffic management and leadership. The relevance of some courses is clear, but the usefulness of the new knowledge to the workplace is debatable; for example knowledge of construction materials and the construction economy. This knowledge may prove useful in the long term but is unlikely to improve productivity in the short term. Other courses are generic and less relevant to immediate project needs: presentation skills and networking skills for example, would be used in very specific circumstances that are unlikely to be encountered frequently on a construction project. Out of interest, the subject matter of courses arranged by employers that implement a formal GDP is different to those arranged by employers that do not run a GDP. It is possible that as GDPs are implemented by large organisations or by organisations committed to employee development, they have the employee numbers to justify (or commitment) to arranging in-house workshops for subjects seen as necessary in the construction industry, such as OH&S, legislation and software for scheduling and estimating. Such organisations are more likely to seek external workshops for subjects that not all employees need to attend, hence the relatively broad variety of topics. Although not a significant result in the research, it is interesting to note that when the whole graduate sample is taken into account, OH&S is a much more frequently undertaken course; ten out of 28 graduates attended an external workshop on OH&S. This result would be influenced by SMEs who rely upon external training to meet minimum industry requirements for qualified safety representatives on construction sites in Australia.

The two proposed explanations for the positive association between external seminars and affective commitment are: 1. the fulfilment of a psychological contract, possibly over and above the fulfilment of the contract furnished by the GDP; and 2. characteristics of the training itself that are inherent and have been found to be related to increased affective (and normative) commitment.

In proposing fulfilment of the psychological contract as a possible explanation for the positive association between affective commitment and external workshops within this subsample, it is important that some explanations are already accounted for in the nature of the GDP. Even though there was not a significant association, Phase 2 GDP graduates reported a higher mean affective commitment than non-GDP graduates. This specific result relating
to external workshops shows higher affective commitment over and above that already demonstrated by the GDP sub-sample. This inhibits some explanations. For example, it is reported in the literature that there exists between the graduate and the organisation a psychological contract; an unwritten agreement that the organisation will take care of some of the graduate’s needs such as challenge, variety and training (Rousseau, 1995). A psychological contract occurs when individuals believe that their organisation has promised them certain inducement in return for their contributions (Turnley & Feldman, 2000). Both these definitions suggest two parties, but the extent to which the employer makes promises but leaves these undocumented is uncertain; it seems some promises may be documented, but others may be made verbally and not followed through. There is no doubt that psychological contract fulfilment has an association with affective organisational commitment (Blomme, van Rheede & Tromp, 2010; Johnson & O’Leary-Kelly, 2003; Sturges, Conway, Guest & Leifoooghe, 2005). When an organisation requests or instructs a graduate to attend training delivered externally, the graduate feels that the organisation is fulfilling its side of the contract by providing the graduate with training appropriate to the graduate’s immediate role and long term career. However the strength of this explanation is moderated by the presence of a GDP which, graduates will perceive, demonstrates the organisation is at least partially fulfilling the psychological contract. Therefore it may only be possible to state that attending external workshops fulfils a little more of the psychological contract than was already satisfied by the GDP.

The second explanation for this result includes the capacity of external training to meet the needs of graduates to be challenged and to include variety, assuming certain characteristics are intrinsic to the training. This explanation is supported by the literature. Bartlett and Kang (2004) found training in general and specific aspects of training (access to training, supervisory support, motivation to learn from training and perceived benefits of training) were significantly positively related to both affective and normative commitment amongst nurses. Sahinidis and Bouris (2008) found a weak but significant positive correlation between perceived training effectiveness and commitment. Therefore where training is attended and perceived to be effective, commitment is increased. Another condition is supplied by Arnold and Mackenzie Davey (1994a) who found four variables that help to develop commitment amongst graduates, one of which was training quality. It was previously reported that Terjesen, Vinnicombe and Freeman (2007) and Shaw and Fairhurst (2008) found graduates’ needs included challenge and variety, and it is possible that the
external training, where it meets the criteria described by Barlett and Kang (2004), Sahinidis and Bouris (2008) and Arnold and Mackenzie Davey (1994a) could also increase variety and challenge. Other characteristics of training that might influence commitment include the relevance of the subject, the background of the facilitator, the mode of delivery, the location of the course, the time of the course, the knowledge gained and the opportunity to network with peers from different organisations and compare careers.

Of the two proposed explanations, the first is stronger as it also explains the lack of significant result or trend in Phase 2 graduates who did not undertake a GDP. If a graduate is not employed by an organisation where a GDP is implemented, it is less likely that a psychological contract exists. If there is no psychological contract, then there would be no trend towards higher affective commitment where external training occurs. If the nature of the training itself (variety, challenge, location, opportunity for networking, high quality, access, effectiveness) were to be a strong factor in explaining an increase in affective commitment, this result should also occur for the sub-sample who did not undertake a GDP. This argument is particularly relevant given that the sources of external training in the construction industry are limited and both GDP graduates and non-GDP graduates may be attending the same training.

External seminars appear to be significantly related to an increase in affective commitment for those graduates undertaking a GDP, although this significance is considered unreliable and the result is explained as a trend rather than a reliable result. Where organisations implement a GDP, they are encouraged to continue to include some external seminars in their repertoire of training activities, in conjunction with an implied psychological contract with the graduate in which the organisation takes most of the responsibility for arranging developmental activities. This will result in the perception by the graduate that the contract is being met and thus explain the resultant increase in affective commitment. Since psychological contracts are virtual and do not demand intensive investment from the organisation, SMEs might also consider reaping further benefits of external seminars by verbally agreeing with graduates to provide some training and then selecting subjects considered to be essential in the industry, such as OH&S, to be delivered by external sources.
9.3.2 Documented career planning information

Only one Phase 2 participant reported receiving any documented career planning information. When assessed, the presence of career planning information had a negative impact on the mean affective commitment score amongst those Phase 2 graduates undertaking an informal training program. This result is not generalizable and the result is only discussed here as a trend. Future research should try to establish if this result is indeed significant.

Where formal documented career information was provided, it was in the form of a letter during the recruitment phase indicating potential career prospects in the organisation. This letter was not addressed to an individual, but to a tertiary institution from which the organisation was hoping to recruit. A career information handbook or a career ladder was documented in the same organisation, supporting the theory that an organisation’s culture means it is likely to take more than one approach to the same outcome. This form of documented career information is a result of the organisation producing the documented information prior to it being requested.

The negative association between career planning documentation and affective commitment found in Phase 2 was unexpected and disagrees with the literature. Initial explanations suggest either the documentation being at fault, or some other variable imparting a much stronger and negative influence on the respondent. Although the literature claims that documented career information or subsequent behaviour is beneficial (for example Connor, Strebler & Hirsh 1990; Arnold & Mackenzie Davey, 1994b), it makes the assumption that the document is accurate and acted upon. The graduate who experienced this variable commented that the initial document was a generic letter addressed to the tertiary institution at which the graduate studied and subsequent documents were generic career plans for graduates. It was not a personal career plan; it may not have reflected the needs or aspirations of the individual graduate. If this were the case, the graduate may be able to see clearly the intended path through the organisation, and also see clearly that this does not reflect their own intentions. This could result in a decrease in affective commitment as the graduate is aware of the difference in intentions and the need to seek alternative employment. Although it is not expected that organisations will create a different career map for each individual graduate, the organisation should be seen by the
graduate to be following through the documentation. Where a documented career plan is presented but not fulfilled, this would be equivalent to breach of psychological contract which would result in a decrease in commitment. It is not known if this instance took place in the organisation in which the graduate was employed. The research concludes that the documented career information was too generic to be of benefit to the individual graduate.

Other formats of documented career information which were tailored to individual career plans were noted, although they were created as a result of the regular performance review that almost all organisations implement across all employees, not just graduates. These reportedly take place annually, although occasionally more frequently for new employees, and are initiated by the organisation. One organisation carried out progress reviews at three months, six months and then annually. The process and outcome of such progress reviews is documented, sometimes on a proforma. Phase 2 graduates reported that career discussions were held as part of the performance review. There were instances during Phase 2 data collection interviews in which graduates conveyed that the career discussions held during the performance review was relatively structured, considering the career in the short, medium and long term. Others reported that the career discussion was very brief. However it should be remembered that although the outcome from such a discussion is documented, this is not the same as presenting the graduate with a documented path as part of their induction into the organisation, which is the variable found to cause a decrease in affective commitment amongst the current sample. The document has been created as a result of a discussion, rather than the documented causing the discussion, as was the case for the individual who received generic information. The research suggests that this is a positive start – at least something is known and documented, even if the graduate has been employed for a while before it occurs. It should be noted that verbal career discussions such as those that took place during graduates’ performance reviews, were not associated with any component of commitment.

Phase 2 graduates reported initiating other informal verbal career discussions. Usually this was done with the immediate supervisor, sometimes a person more senior, sometimes with other graduates. Only one Phase 1 organisation had graduates who, although it was not formally documented, knew what roles they would be fulfilling in the future and approximately how long it would take them to get there. Clearly they have received the
same information at different times, this would give confidence that there was a plan, even if not documented.

The purpose of documented career information is to keep an employee informed about possible career paths through the organisation, not to guarantee a line of promotion. Connor, Strebler and Hirsh (1990) identified clear communication of career possibilities as good management practice but Arnold and Mackenzie Davey (1994b) note that both parties should avoid locking into a particular career track. The relationship between documented career paths and commitment is long-term and has many intra-relationships but is not actually complicated. The theory is that documented career information assists in creating organisational career clarity, which positively influences commitment at the same time as creating a psychological contract (Arnold & Mackenzie Davey, 1994b); both the career clarity and the psychological contract would influence commitment. Hence career clarity has twice the opportunity to enhance commitment. Although Arnold and Mackenzie Davey discuss career clarity at length, other literature uses the term rather freely with no precise definition.

Arnold and Mackenzie Davey (1994b) define career clarity as “the extent to which graduates could identify the short term and long term career possibilities in their organisation and how to attain them”. In their longitudinal study of graduates, all of whom were participating in a development program, they measured the existence of organisational career clarity through statements about the presence of a “map of the terrain”. The relationship between career clarity and both the psychological contract and uncertainty is implied by Rousseau (1995) and by Arnold and Mackenzie Davey. Career clarity provides (or at least does not discourage) long term career prospects, and Rousseau (1995) argues that such prospects are an ingredient in a psychological contract. Arnold and Mackenzie Davey only implied in their writing that as career clarity decreased, uncertainty increased. They go on to discuss the ability to provide career clarity given economic conditions and the perception of senior managers that such a map of future career options is “mollycoddling” and that graduates with any potential will tolerate a degree of uncertainty. The first proposition would be appreciated by the construction industry, which is characterised by uncertainty as a result of the complexity of the industrial environment (Drucker et al., 1996), susceptibility of the industry to economic fluctuations (Raiden, Dainty and Neale, 2006), the complexity of modern day construction projects (Walker,
2007) and the number of stakeholders (Ward and Chapman, 2008) and tasks (Vaziri, Carr, Nozick, 2007) associated with successful completion. This is reflected in the type of graduate thought to be desired by construction organisations; an ability to deal with uncertainty and rapid change is essential (Love et al., 2001). This is compounded by procurement systems favouring competitive tendering which carries its own degree of uncertainty.

From their longitudinal study, Arnold and Mackenzie Davey (1994b) found that career clarity was generally low: graduates could not see clearly what career possibilities were potentially open to them in their organisation, nor how to attain them. Over four years, graduates reported a drop in career clarity – surely the reverse of what one would expect as the graduate gains insights into company operations (this was amongst graduates undertaking a GDP). Career clarity emerged as one of the most influential experiences in increasing commitment (Arnold and Mackenzie Davey, 1994a).

Given that all the literature points to a positive association between documented career information and affective commitment, the result that occurred in the Phase 2 research is unexpected. The conclusion is that for career planning documentation to positively influence graduate commitment, it should reflect individual career goals and it should be initiated by the construction organisation which should then act upon the plans detailed in the document. It is acknowledged that the Phase 2 graduate may have been influenced by other external factors not questioned as part of the interview and that this result should therefore be interpreted with caution.

Documented career information is not an expensive training tool to create; it requires a strategic approach from the organisation to employing graduate who, it believes, will be retained for many years. The literature advocates the use of documented career information and this research suggests that the result found is sufficiently dubious for the literature to be adopted by construction organisations.

9.4 Conclusion

This chapter has presented discussion on each of the results from quantitative analysis of the data that were found to be statistically significant. Each significant result was discussed
and the occurrence of the variable within the sample was elaborated upon. Potential causes for each result were examined with the assistance of secondary data from literature and the in-depth examination of each result concluded with a recommendation to industry.

The significant results that were treated in this manner included the training activity of job rotation, and the presence of multiple interviews prior to offering employment. Other results that were initially found to be significant but which were subsequently found to have a confounding factor (such as an insufficient sample size), were reported as interesting trends. These factors were: external seminars, documented career planning information and psychological testing. Although these outcomes were also rationalised, it is with caution and with a recommendation that further research be carried out.

The research has now completed its assignment. The research was driven by the question “Are graduate development programs as successful as informal training in the construction industry?” Statistical analysis found that no significant commitment advantage was gained through implementing a GDP. Further analysis found positive and negative associations between specific activities and commitment. The next and final chapter summarises the research, including the method adopted to answer the question, and the noteworthy findings. The conclusions of the research are presented.
Chapter 10  Conclusion

10.1 Introduction

This research aimed to compare the experience of graduates in the construction industry, specifically experiences of informal graduate training versus formal graduate development programs. The main research question was “Are formal graduate development programs as successful as informal training in the construction industry?” Four subsidiary questions aligned themselves with different phases of the research. Phase 1 asked:

RQ1. What graduate training and development activities are implemented by construction organisations?
RQ3. What is the intended outcome of graduate training and development activities implemented by construction organisations?

While Phase 2 asked:

RQ2. What training and development activities are undertaken by graduates in construction organisations?
RQ4. Is the intended outcome achieved?

This chapter brings the thesis to a conclusion by recapping the research processes undertaken and answers the main and the subsidiary research questions. The research hypotheses are addressed. Significant and important findings of the research are summarised. The implications of the findings for industry and future research are presented.

10.2 What research processes were completed?

The main research question included the word “success” which was initially undefined. It was therefore necessary to define success in terms of a desirable outcome of GDPs; this identified desirable outcome became the dependent variable for analytic purposes. A
sequential mixed methods approach was found to be best suited to the research question, and was used to structure the research into two main phases.

Phase 1 required definition of the word “success” from the leading research question and subsequent identification of the desirable outcomes of GDPs. This phase established which training activities were implemented by construction organisations either as part of a GDP or as informal training, and was accomplished through qualitative interviews with 17 construction organisations which had their head office in Melbourne, Australia. The primary aim of the interviews was to establish what training activities are carried out, and why; this required theory development. Theory building begins with becoming familiar with the data and then searching for empirical evidence to support or contradict the initial theory. This method was adopted; the interview included an open question regarding the objective of the training and two supplementary questions asking the reason for implementing the training and how the training was evaluated. Further comments during informal conversation provided supportive evidence. This process revealed more than one objective of training. Initial responses indicated that skill acquisition was the primary reason for providing training to graduate employees. However most organisations contradicted themselves, reporting they either did no evaluation of the training at all, or evaluated a different outcome – not skill acquisition, but retention of graduates. Informal discussion prompted by the respondent emphasised the second desirable objective of retention. The two objectives of GDPs identified by Phase 1 – skill acquisition and staff retention – became the potential starting point for Phase 2 of the research.

Since the demands for undertaking it were beyond the capacity of this research, measurement of skill acquisition was reserved for the attention of future research that would be able to pay this subject the attention it requires for valid and reliable findings. The focus for Phase 2 thus became the effectiveness of GDPs to retain staff.

A wealth of literature exists that relates retention of staff to organisational commitment; it has been identified that organisational commitment is significantly related to intention to leave the organisation (Gellatly, Meyer & Luchak, 2006; Lee, Lee & Lum, 2008; Mathieu & Zajac, 1990; Porter, Steers, Mowday & Boulian, 1974). Furthermore there is general agreement that commitment can be measured by a globally recognised tool developed by Meyer and Allen (1997) whose three components model of commitment divides into
affective, normative and continuance commitment. It was decided that Phase 2 of the research should focus on this desirable outcome which had the potential to produce significant meaningful findings, and which might benefit the construction industry.

Phase 2 of the research collected data from graduates in organisations that had participated in Phase 1 of the research. The primary aim of the research was to measure graduate commitment using the three components model, but the interview also delved into career experiences and training the graduate had received. The data was largely quantitative and was analysed statistically, searching essentially for significant relationships between commitment and the type of training received.

10.3 What was found?

The results can be divided into those which answer the research questions posed at the beginning of the thesis, and those which proved to be statistically significant and therefore worthy of further discussion. Both categories of findings are presented here, beginning with the research questions.

RQ1: What graduate training and development activities are implemented by construction organisations?

Chapter 5 displayed the frequency of graduate training and development activities implemented by the organisations, separating the sample into organisations that implement a formal GDP, and those that implement informal training. It was found that the most popular activities implemented within a GDP were external workshops and seminars, internal workshops and seminars, career counselling with supervisors, succession planning and a staffing committee. These were implemented by all four organisations that carried out a formal GDP. Amongst those organisations which prefer to adopt an informal graduate training program, external workshops and in-house workshops were again the most popular activity. Computer software training, succession planning and career counselling with the supervisor were the next most popular training activities.

It is not surprising that external and in-house workshops and seminars were found to be the most frequently implemented training activities. This reflects the need for the construction
industry to constantly update knowledge to reflect technological and legislative changes. The experts that facilitate such knowledge are not usually employed directly within an organisation, particularly where the organisation is small or medium in size. The subject areas typically covered by workshops are occupational health and safety, development of new materials and structural technology, and industry legislation. Whilst nine of the interviewed organisations implement career counselling with a supervisor (often in the form of an annual performance review) and succession planning, the large organisations report a more co-ordinated approach to staffing on a project, with a committee of senior managers selecting what they consider to be the right staff for a particular project. Small organisations may not have sufficient graduate staff available to enable project team choices to be made.

Although not pertinent to any of the research questions, there was a trend (not significant) towards small and medium organisations implementing informal training. All four organisations that implemented a GDP employed between 100 and 499 people and are thus considered large construction organisations. This is not to denigrate the informal training offered by smaller organisations as being less valuable; some respondents from small organisations demonstrated a clear vision of how graduates should be developed and entered into an animated debate as to how this vision is realised. Where present, this degree of passion implies that graduates are getting some form of development, even if it is misguided and does not achieve the organisation’s intended needs.

RQ2: What training and development activities are undertaken by graduates in construction organisations?

Those graduates that undertook a graduate development program reported the most frequently implemented training and development activities to be in-house seminars, external seminars, a mentoring program (a significant result) and career discussion within the organisation. Graduates that undertook informal training and development reported career discussions within the organisation, in-house seminars and performance appraisals as the most frequently attended activities.

The sample size was taken into consideration in interpreting these results. For example, although graduates who undertook informal training and development reported in-house
seminars as a frequently implemented activity, only 68% of this sub-sample actually attended an in-house seminar, compared to 100% of graduates on a GDP. This result supports the theory that the large organisation is better placed to run in-house seminars; the difference was also statistically significant. External seminars were also more frequently implemented in GDPs than in informal training, but this result was not significant. Given the reported popularity of external seminars by construction organisations that implement an informal training program, only slightly over half of graduates who undertook informal training (56.3%) attended external seminars. This lower than expected result may be due to other factors such as the employing organisation not being aware, not being sufficiently organised, or simply reluctant to allow time away from work where the content of the external workshop is not strictly necessary.

Documented career planning information and psychological testing were the activities least likely to be implemented by employer organisations in the construction industry, regardless of the formality of the training.

RQ3: What is the intended outcome of graduate training and development activities implemented by construction organisations?

Two desirable outcomes of training and development were identified: skill acquisition and graduate retention. Although the construction organisations initially responded that skill acquisition was the primary reason for implementing training, further interview questioning revealed that GDPs are evaluated by the number of graduates retained by the organisation. General discussion during the interviews with organisations, in which the subject of graduate retention arose, added strength to this variable as a desirable outcome. Hence the definition of success relating to retention was formulated for evaluating the effectiveness of GDPs.

This is an important finding and as new knowledge, it contributes to the field of training and development in the construction industry. The contrast in responses, from skill acquisition to graduate retention, reveals that construction organisations are confused about appropriate program evaluation. The construction industry should revise its evaluation techniques so that they align with the documented outcome of skill acquisition, or it should accept that retention is more important than it currently recognises or is prepared to admit.
Future research in the area of graduate training and development in the construction industry could usefully focus on skill acquisition or on graduate retention as desirable outcomes. This could also be pertinent for employees other than graduates.

RQ4: Is the intended outcome achieved?

Following completion of Phase 1, and the decision to exclude one of the desirable outcomes from further research, the research question was re-worded: “Are graduate development programs as effective at generating commitment as informal training activities offered by construction organisations?”

Analysis and interpretation of data collected from graduate interviews in Phase 2 showed a slightly increased affective and normative commitment score for those graduates in a formal GDP, compared to graduates experiencing informal training, but this result was not statistically significant. The research is therefore unable to conclusively state that informal training or GDPs implemented in the construction industry significantly affect any component of commitment. However neither is it possible to exclude GDPs or informal training as antecedents of commitment amongst construction graduates.

The Phase 2 data analysis did yield two significant results; the mean affective commitment score increased in response to job rotation for the whole graduate sample interviewed, and for graduates undertaking informal training; and the mean continuance commitment score decreased in response to multiple job interviews for non-GDP graduates. Other results were statistically significant but were interpreted with caution due to the small number of participants in the graduate sample. Graduates enrolled in a GDP who attended external seminars reported a significantly higher mean affective commitment score; while a graduate who participated in informal training and received documented career planning information reported a significantly lower affective commitment score. Both the statistically significant results and the results regarded as trends were discussed and explanations offered.
10.3.1 Job rotation

The requirement of graduates to rotate around a series of roles in a construction organisation as part of a GDP led to an increase in affective commitment scores. It was argued that job rotation meets a number of identified graduate needs such as variety, challenge and career development opportunity and so the graduate develops commitment to the organisation as a result of the perception that these needs are being met. The role of the psychological contract is relevant to this explanation. The psychological contract is a set of expectations that the graduate has that the organisation will take responsibility for some aspects of the graduate’s career. When the organisation takes some action to fulfil the contract, affective commitment is enhanced (Rousseau, 1995). The opposite is also true; when an organisation makes little or no effort to fulfil the contract, affective commitment decreases.

All organisations, regardless of industry or size can benefit from this concept. It is important to understand that the content of a psychological contract is not consistent across graduates. It can be influenced by the organisation so that the graduate’s expectations of the organisation are realistic and can be fulfilled, thus increasing commitment. Small and medium enterprises in the construction industry stand to gain graduate loyalty from understanding the influence of job rotation as a stand alone training activity, and the influence of job rotation as a component of a psychological contract.

10.3.2 Multiple job interviews

Those graduates that participated in an informal training program showed a lower continuance commitment score when more than one interview was attended as part of the recruitment process. The research proposed two explanations for this; first, that each interview is an opportunity to inform and moderate expectations, and to reduce uncertainty. These graduates are aware that they will not receive benefits (for example a car and private health insurance) in the short term, and they are therefore less likely to perceive these benefits as a reason for remaining with the organisation. Second, it is proposed that as graduates become more informed about an organisation, they feel empowered to make a controlled decision to accept the offer of employment rather than have it forced upon them.
The effect of empowerment on decision making is a theory further investigated by Meyer, Bobocel and Allen (1991).

The desirability of low continuance commitment is variable and the research proposes viewing this in conjunction with affective commitment scores in the form of a commitment profile as suggested originally by (Sinclair, Tucker, Cullen, & Wright, 2005). If reported simultaneously with high affective commitment, then low continuance commitment is a positive indication of employee loyalty.

10.3.3 External seminars

Where construction graduates are undertaking a formal GDP and are required to attend external workshops, an increase in affective commitment was found. This result was statistically significant but treated as a trend due to the small size of the sample sub-group. The research argued that the psychological contract is again fulfilled by the organisation instructing the graduate to attend the seminar, and that characteristics of the training itself have been found to be related to increased affective commitment, for example the effectiveness of the training meeting the needs of graduates to be challenged and to include variety. Whilst the discussion presented literature to support both explanations, it was asserted that the psychological contract theory is the stronger of the two as it also explains the lack of significant result or trend in the sample sub-group who did not undertake a formal GDP.

10.3.4 Documented career planning information.

Analysis of the Phase 2 interview data revealed a statistically significant association between the presence of documented career planning information and a reduction in affective commitment amongst the sample sub-group who did not participate in a formal GDP. However the result is treated as a trend due to the small size of the sample sub-group. This result contradicted literature which suggests documented career planning information sustains career clarity in which the graduate can see career opportunities within the organisation (Arnold & Mackenzie Davey, 1994b). The research concluded that either the documentation enabled the graduate to clearly see his future was not in the organisation, or that there were other external factors influencing his lower affective commitment score.
10.3.5 Hypotheses

At the conclusion of Phase 1 of the research, the following hypothesis was given:

That graduates participating in a GDP are more committed to their employer than graduates who are not participating in a GDP. (H₁)

The evidence arising from this research does not support this hypothesis. However neither is there sufficient evidence to the contrary to support the null hypothesis:

That there is no difference in commitment to employers from graduates participating in a GDP compared to graduates who are not participating in a GDP. (H₀)

Although it may seem disappointing that the research has not been able to conclusively support either hypothesis, the research should be viewed as much more than hypothesis testing. The research was not designed purely to test this hypothesis; instead it navigated new territory by applying a method not used in the construction context and exploring the findings so that future research may be directed towards investigation of specific issues identified by this research.

10.4 Limitations

Each phase of the research presents different limitations that are explained and discussed here.

Phase 1 was restricted to a geographical area, which would facilitate face-to-face interviews and realise the advantages of this method of data collection. Of the 33 organisations in the population within this geographical area, 17 organisations agreed to participate in Phase 1 of the research. This is considered adequate for qualitative data collection and analysis. However, restricting the location of the construction organisations also restricted the source of the construction graduates needed for Phase 2 of the research to the same organisations, and eventually 28 graduates from 9 construction organisations were interviewed in Phase 2. All these graduates had completed their construction management degree qualifications at one of three tertiary institutions. The narrowness of the initial convenience sampling from a geographical area means that the findings of the research cannot be reliably generalized to
the Australian construction industry. However against this limitation it should be noted that most construction organisations maintain membership of state and national associations in Australia, such as the Master Builders Association, and thus follow similar principles relating to employment and training of staff.

As a result of the sampling technique used during Phase 1, a small sample of graduates was generated for Phase 2 - relative to the number of variables (ie. training and development activities) being explored as potential causes of commitment. From a simple quantitative perspective, this can be seen as a limitation. Morgan (1998) describes the mixed method adopted for this research as a qualitative study with a quantitative follow-up, in which the focus is on the qualitative interviews of Phase 1 and the quantitative study is for exploring clarification and trends. For this reason the small Phase 2 sample size is not an insurmountable limitation. Certainly the research is able to propose useful findings from Phase 1. However it is acknowledged that the small sample limits the outcomes of research to find the existence of relationships between variables, rather than explaining the direction of the relationship. The current research has been able to highlight two variables as having a significant impact on commitment. The inclusion of more variables and investigation of the relationships between them will require a much larger sample size in any future investigation. The current research at least indicates the way forward and the research strands that should be followed.

Although the current research has been able to conclude with some significant findings, a major limitation has been the inability to respond to the original question which would have involved measurement of skill acquisition associated with GDPs for construction graduates. This should be considered the focus for future research. A sampling technique that future research should consider, particularly where international comparison is desirable, is matched pairs sampling which might then eliminate the need for a control group during analysis of skill acquisition (thus avoiding the research ethics problem) and which could be used during a cross-cultural comparison of training and development for graduates in the construction industry.

The interviews conducted with graduates during Phase 2 were subject to errors associated with interviewee memory loss during the recollection of training activities undertaken. The research accepted this as possible but unlikely to have occurred since the individual
graduates were being asked to recall an event, not an emotion. (Stone, Bachrach, Jobe and Kurtzman, 1999) found the recollection of emotions was much more unreliable than the recollection of events. The researcher did not find any obvious occurrence of such memory loss during the interviews.

10.5 Recommendations for industry

The central recommendation for those construction organisations that execute a GDP is that they need to align their program evaluation criteria with the desirable outcomes they have identified for such programs. As the analysis of the qualitative data from the Phase 1 research has found, the organisations reported skill acquisition as the primary reason for developing the GDP, but they either did no evaluation at all (for any criteria), or they just evaluated graduate retention. These organisations would benefit from reviewing and applying the current theories and processes of program evaluation. It would also appear that GDPs are not currently given the developmental time they require to maximise desirable outcomes. Without proper development and implementation, together with post-implementation evaluation and refinement, the Graduate Development Program is not much more than an umbrella term for a collection of training activities. Yet a GDP has so much more to offer both the individual graduate and the construction organisation.

The research revealed no significant benefit to implementing a GDP, suggesting that SMEs are not disadvantaged by their more informal training programs. However organisations that do wish to implement a GDP should do so as there was no significant disadvantage to this. Graduates in construction organisations that implement a formal GDP may benefit from having more of their expectations met than graduates in an SME through the existence of organisation career management, but a proactive SME can modify the graduate’s expectations through discussing with a graduate their needs and how they may or may not be met, agreeing who is responsible for career management, and thus modifying the psychological contract. Clarification and transparency of this nature may assist in maintaining commitment levels so that SMEs might benefit from increased retention of graduate employees notwithstanding other external industry sourced factors. With this in mind, construction organisations without a formal GDP in place should consider multiple job interviews as part of an extended recruitment process, again to enhance clarity and reduce the occurrence of unrealistic expectations.

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The research found specifically that job rotation had a positive impact on affective commitment. But all organisations should be careful to implement job rotation that is not detrimental to commitment by ensuring that excessive stress to the employee is avoided and uncertainty minimised, and appropriate levels of challenge and variety are offered. The research findings imply that intra-project job rotation is preferable to inter-project job rotation.

Other activities that construction organisations should consider adopting, although on the understanding that positive results are not guaranteed, are the use of external seminars and the provision of documented career planning information. The literature describes career clarity within the organisation as being positively related to affective commitment (Arnold and Mackenzie Davey, 1994b); this research finds evidence to the contrary but only for one graduate interviewee and it is concluded that this graduate either saw no future in the organisation, or that there were other factors at work. Career information may be provided cheaply in the form of an organisational chart and, for the potential benefits, it would be a wise investment. While constructions organisations that implement a formal GDP may choose to make use of external seminars, there is some evidence that this has a positive impact on graduates and this form of development should be encouraged, with the proviso that any seminar is seen to be relevant and effective with respect to the aims of the GDP. Construction organisations that do not implement a GDP are likely to be SMEs who do not have the option of in-house seminars and therefore must continue to make use of the external seminars provided largely by industry bodies.

10.6 Reflections and recommendations for further research

The research journey described in this thesis has been a challenging one, and yet with hindsight the researcher would not change the method adopted. The researcher is satisfied with the validity of the origin of the research, with the use of a program evaluation model as a methodology and with the suitability of sequential exploratory mixed methods. These methods have been applied in other industries and are recognised.

Two issues have created ongoing discussion between the researcher and the extended research community: firstly, Phase 1 of the research arrived at two desirable outcomes –
skill acquisition and graduate retention. It was argued that skill acquisition was not measurable within the constraints of a PhD; the research suggests that if skill acquisition were the sole variable under investigation, a PhD could accommodate this. However the recommended reliable way to measure skill acquisition is using a longitudinal study and a control group with which to compare the group undertaking the training (the intervention). Other techniques such as gathering historical data that organisations may have collected might suggest a change in skill levels but not with sufficient reliability to prove a hypothesis. Bearing this in mind, the researcher would not change this aspect of the research and would propose future exploratory research retains the prerogative to not pursue avenues of investigation if it were thought the task might not be completed adequately.

The second issue is the use of a geographically restricted sample size. Although the sample was sought from a database intended to provide unbiased participants that reflect the construction industry as a whole, this did result in a relatively small number of organisations and then graduates. This allowed the face to face collection of qualitative data, but has prevented the conclusive supporting or otherwise of a hypothesis. Future research might consider recruiting a larger sample although it would have to consider the benefits of a larger sample against the potential bias caused by recruiting from, for example, professional associations.

This research has been conducted in the context of an industry which, although not particularly young, is very dynamic, constantly advancing as construction projects become larger and more complex. This makes the industry hard to define since a definition infers consistency and status quo. Research reported by literature does not seem to be able to keep up with the growth of the industry particularly in terms of its culture and its response to economic cycles. For example skill shortages occur in different countries in different decades often in response to economic boom and bust periods making the literature relevant to a location quickly out of date. The dominance of large organisations in an industry in which small organisations outnumber the large also makes it very hard to conduct research and make it generalizable. Perhaps the current research would have been well advised to limit the research to either small or large construction organisations and then been able to produce findings that might be generalizable to the population of small or large construction organisations. A further hurdle is that compared to, for example nursing or
engineering which are perceived as being stable and having clearly defined advances in technology and professional development programs, the construction industry still seems to be struggling with adopting a uniform approach to professional development.

The limitations of this research could be addressed with a further research project which confirms or rejects the trends found here. If small organisations in the construction industry are to be perceived by graduates as an attractive employment option both prior to and during employment, they need to be informed as to the most effective training activities to invest in, and this requires reliable results from appropriate research. This necessitates a much larger sample which would have two benefits: identification of training activities which have a significant positive relationship with affective commitment, and the potential to implement matched pairs sampling. The latter sampling technique would enable investigation of skill acquisition as a result of a GDP or informal training, and if conducted on an international basis, the effect of cultural and market changes could be investigated also.

Other variables that the research discussed but did not investigate include the role of the psychological contract and its influence on graduate retention. The nature of this contract is unwritten, flexible and individual, and it therefore requires no overheads in its creation, and yet the positive impact could be boundless, making it potentially particularly suited to SMEs or any organisation with little or no training budget. However the content of the contract may be influenced by personal characteristics of the graduates which have thus far remained undefined. The research has treated all graduates as a homogenous group with no differences in preferences for organisation or self career management.

The long term aim of research in this field should be to investigate the ability of construction organisations of all sizes and disciplines to successfully recruit and retain the right graduates in order to develop a long term partnership that satisfies the needs of both the organisation and the employee.
References


Appendices

APPENDIX A – INTERVIEW OF ORGANISATIONS
RM1 – establishing the activities that graduates experience and the objectives of these activities.

Section A
Organisation demographic information

Section B
GDP is implemented

Section C
GDP is not currently implemented

Section D
GDP currently being set up
Section A

1. **What is the primary function of the organisation?**
   - Construction
   - Design
   - Development
   - Project finance
   - Management
   - Other

2. **Within what sector of the industry is most of the organisation’s work carried out?**
   - Commercial
   - Industrial
   - Residential
   - Private
   - Public
   - Other

3. **How many employees are there in the organisation?**
   - Fewer than 20
   - 20 – 99
   - 100 – 499
   - 500 +
   (Baker and Wooden, 1995)

4. **Approximately what percentage of these employees are full time?**

5. **Which of the following most closely describes your organisation in terms of geographical scope?**
   - Local
   - Regional
   - State
6. **Describe your role in the organisation? (OPEN)**
   - HR manager
   - Senior manager
   - Owner
   - CEO
   - Director
   - Other

   Use these categories to note job title, but I should know this already from the contact details. The respondent should describe briefly their role.

7. **Is there currently a graduate development program in your organisation? (By GDP I mean a program of activities which graduate recruits are expected to undertake. Activities may include socialising, mentoring, job rotation, training)?**
   - Yes (go to Section B)
   - No (go to Section C)
   - Starting one (go to Section D)
Section B (if the answer to question 7 is yes)

1. **How long have you had a GDP in place?**
   - Less than 1 year
   - 1 - 2 years and 11 months
   - 3 – 4 years and 11 months
   - 5 – 6 years and 11 months
   - 7 years or more

2. **Who was responsible for developing and implementing the GDP?**
   - HR dept
   - Me
   - Senior manager
   - Outside consultant
   - Someone else

3. **What factors influenced the development and implementation of your organisation’s GDP?**
   - Organisational commitment to career development
   - Shortage of promotable talent
   - Concern about turnover
   - Equal employment opportunity program commitments
   - Desire to motivate employees under conditions of limited organisational growth
   - Desire to develop/promote from within
   - Desire to keep up with competitors
   - Strong expression of employee interest in career planning
   - **Survey/needs assessment findings**
   - Shift in skill mix/human resources planning needs
   - Development of organisation’s strategic plan
   - Desire to improve worker productivity
   - Need to encourage early retirement
• Desire for positive recruiting image
• Desire to avoid unionisation
• As a result of award restructuring

4. Have you used a task force/advisory group and/or consultative committee in the design and implementation of the GDP?
   Yes/no
   • Internal task force/advisory group/consultative committee
   • External consultant

   a. How would you rate their effectiveness?
      • Very effective
      • Somewhat effective
      • In-between
      • Somewhat ineffective
      • Very ineffective

5. Who is responsible for maintaining the GDP?
   • HR dept
   • Me
   • Senior manager
   • Outside consultant
   • Someone else (Who?)

6. What activities constitute the GDP in this organisation?

   Development programs
   • Job enrichment/job redesign
   • Job rotation
   • In-house training and development programs
• External seminars/workshops
• Supervisor training in career discussions
• Dual career couple programs
• Mentoring system

7 Employee self assessment tools
• Career planning workshops
• Career workbooks
• Computer software

Organisational Potential Assessment Processes
• Promotability forecast
• Psychological testing
• Assessment centre
• Interview process
• Job assignment

Internal Staffing Information Exchange
• Career information handbooks
• Career ladders/dual career ladders
• Career resource centre
• Other career information or systems

3 Individual Counselling/Career Discussions
• Supervisor or line manager
• Senior career advisors
• Personnel staff
• Specialized counsellor – internal or external

Job Matching systems
• **Informal canvassing**
  • Job posting
  • Skills inventories/audit
  • Replacement/succession planning
  • Staffing committees
  • Internal placement system

7. **How long does the GDP last?**
   • 0 – 6 months
   • 6 – 12 months
   • 12 – 18 months
   • 18 – 24 months
   • more than 24 months

8. **What are the objectives of the GDP? (OPEN)**
   I have moved this question from being number 4 because it seemed to be repeating question 3 or at least the respondent might reply that the objectives were the same or similar to the factors that influence the development of the GDP. If I put the question in this new position at no. 8 then it has two advantages. It validates the answer given to question 3, and it also leads nicely to the next question about effectiveness.

9. **Overall, how effective is your GDP?**
   • Very effective
   • Somewhat effective
   • In between
   • Somewhat ineffective
   • Very ineffective

   I could have been more specific in this question and added the words “in achieving these objectives” as a follow on from question 8, but I want the respondent to take in the broader effectiveness of the plan, not restricting the benchmarks to the objectives listed.
10. How are your GDP activities evaluated? (OPEN)

- None
- Informal verbal feedback from participants
- Interviews of focus groups
- Questionnaires
- Data analysis eg. productivity
- Other
Section C (If the answer to question 7 is no)

1. Has there ever been a GDP implemented in this organisation?
   Yes/No
   a. Why was it stopped?
   b. When was it stopped?

2. Does the organisation expect graduate recruits to undertake developmental/training activities (not part of a formal GDP)?
   - Yes (go to questions 3 - 6)
   - No (go to questions 6 + 7)

3. Who is responsible for allocating and arranging these training activities?
   - HR dept
   - Me
   - Senior manager
   - Outside consultant
   - Someone else (who?)

4. What training activities are implemented?
   - Development programs
     - Job enrichment/job redesign
     - Job rotation
     - In-house training and development programs
     - External seminars/workshops
     - Supervisor training in career discussions
     - Dual career couple programs
     - Mentoring system

   - Employee self assessment tools
     - Career planning workshops
     - Career workbooks
     - Computer software
Organisational Potential Assessment Processes

- Promotability forecast
- Psychological testing
- Assessment centre
- Interview process
- Job assignment

Internal Staffing Information Exchange

- Career information handbooks
- Career ladders/dual career ladders
- Career resource centre
- Other career information or systems

10 Individual Counselling/Career

- Supervisor or line manager
- Senior career advisors
- Personnel staff
- Specialized counsellor – internal or external

Job Matching Systems

- Informal canvassing
  - Job posting
  - Skills inventories/audit
  - Replacement/succession planning
  - Staffing committees
  - Internal placement system
5. Does your organisation allow employees to engage in training programmes not directly related to their work?

a. Yes – Will the organisation reimburse the employee for development activities not directly related to their work?

b. No
1. When did the development of the GDP start?

2. What stage is the GDP at?
   - Beginning
   - Middle
   - End

3. Who is responsible for developing and implementing the GDP?
   - HR dept
   - Me
   - Senior manager
   - Outside consultant
   - Someone else (Who?)

4. What factors influenced the development and implementation of your organisations GDP?
   - Organisational commitment to career development
   - Shortage of promotable talent
   - Concern about turnover
   - Equal employment opportunity program commitments
   - Desire to motivate employees under conditions of limited organisational growth
   - Desire to develop/promote from within
   - Desire to keep up with competitors
   - Strong expression of employee interest in career planning
   - Survey/needs assessment findings
     - Shift in skill mix/human resources planning needs
     - Development of organisation’s strategic plan
     - Desire to improve worker productivity
     - Need to encourage early retirement
     - Desire for positive recruiting image
     - Desire to avoid unionisation
5. **Have you used a task force/advisory group and/or consultative committee in the design and implementation of the GDP?**

Yes/no
- Internal task force/advisory group/consultative committee
- External consultant

a. **How would you rate their effectiveness?**
- Very effective (5)
- Somewhat effective (4)
- In-between (3)
- Somewhat ineffective (2)
- Very ineffective (1)

6. **What activities will constitute the GDP in this organisation?**

**Development programs**
- Job enrichment/job redesign
- Job rotation
- In-house training and development programs
- External seminars/workshops
- Supervisor training in career discussions
- Dual career couple programs
- Mentoring system

**11 Employee self assessment tools**
- Career planning workshops
- Career workbooks
- Computer software
### Organisational Potential Assessment Processes
- Promotability forecast
- Psychological testing
- Assessment centre
- Interview process
- Job assignment

### Internal Staffing Information Exchange
- Career information handbooks
- Career ladders/dual career ladders
- Career resource centre
- Other career information or systems

### Individual Counselling/Career
- Supervisor or line manager
- Senior career advisors
- Personnel staff
- Specialized counsellor – internal or external

### Job Matching systems
- **Informal canvassing**
  - Job posting
  - Skills inventories/audit
  - Replacement/succession planning
  - Staffing committees
  - Internal placement system

### 7. How long will the GDP last?
- 0 – 6 months
- 6 – 12 months
• 12 – 18 months
• 18 – 24 months
• more than 24 months

8. How will your GDP activities be evaluated? (OPEN)

• None
• Informal verbal feedback from participants
• Interviews of focus groups
• Questionnaires
• Data analysis eg. Productivity
• Other.
Appendix B - Plain language statement for recruitment of participants
Dear Participant,

Further to our telephone conversation recently, I am writing with details of the research in which you have been asked to participate.

I am conducting research for the degree of Doctor of Philosophy under the supervision of Dr. Diane Niblo. The project being carried out hopes to document graduate development activities being implemented by construction organisations in Melbourne. It is known that some organisations have formal development programs, but we do not know how widespread these programs are and what activities constitute a development program. Also, it is known that small organisations do not have formal programs; in fact small construction organisations have rather different expectations of their graduate recruits. However it has not been confirmed that development programs are necessary in small organisations.

The interview will constitute the first round of data collection in which I will be trying to confirm what development activities are actually implemented across a number of construction organisations of various sizes and what the intended outcomes of these activities are thought to be. The interview should take no more than an hour, and with your permission it will be digitally recorded and then saved to a CD which will be stored in a locked cabinet at my office during the research but destroyed after the awarding of the degree. The results of the research may be published but you and your organisation will not be identifiable.

Also during the interview I will ask you if there is any documentation that details your training or development activities. If you are able to provide any records such as policy documents, minutes or employee guidelines, the research will be able to draw stronger conclusions. However supplying this extra information is at your discretion.

If you are willing to take part in this study please complete the attached consent form and retain it; I will collect it during the interview. You can withdraw from the research at any time. If you choose to do this after the interview the digital recording will be destroyed and any results amended. You can withdraw from the research or ask any questions about the research by calling me on 9925 2230.

I would like to take this opportunity to thank you for sharing your time, which I know is valuable. The results of the research may be able to assist the construction industry in the future and so your contribution is extremely important.

Yours sincerely,

PhD student

Diane Niblo, PhD.
Supervisor

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Appendix C – Consent form
Any complaints about your participation in this project may be directed to the Secretary, RMIT Human Research Ethics Committee, University Secretariat, RMIT, GPO Box 2476V, Melbourne, 3001. The telephone number is (03) 9925 1745.

**RMIT HUMAN RESEARCH ETHICS COMMITTEE**

Prescribed Consent Form For Persons Participating In Research Projects Involving Interviews, Questionnaires or Disclosure of Personal Information

**FACULTY OF**
**DEPARTMENT OF**

Applied Science
Disability and Psychology Studies

Name of participant:

Project Title:

An evaluation and comparison of Graduate Development Programs in the construction industry.

Name(s) of investigators:  
(1) Guinevere Gilbert  
Phone: 9925 2230

(2) Diane Niblo  
Phone: 9925 7375

1. I have received a statement explaining the interview/questionnaire involved in this project.

2. I consent to participate in the above project, the particulars of which - including details of the interviews or questionnaires - have been explained to me.

3. I authorise the investigator or his or her assistant to interview me or administer a questionnaire.

4. I acknowledge that:

   (a) Having read Plain Language Statement, I agree to the general purpose, methods and demands of the study.
   (b) I have been informed that I am free to withdraw from the project at any time and to withdraw any unprocessed data previously supplied.
   (c) The project is for the purpose of research and/or teaching. It may not be of direct benefit to me.
   (d) The confidentiality of the information I provide will be safeguarded. However should information of a confidential nature need to be disclosed for moral, clinical or legal reasons, I will be given an opportunity to negotiate the terms of this disclosure.
   (e) The security of the research data is assured during and after completion of the study. The data collected during the study may be published. Any information which will identify me will not be used.
Participants should be given a photocopy of this consent form after it has been signed.
Appendix D – Graduate Interview
RM2 – establishing the activities that graduates experience and measuring graduate commitment.

Organisation ID

1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16

Section A
Demographic information: career map.
Section B
GDP training
OR
Section C
General training

Section D
Commitment measure.
Section A

Map career of graduate to date. Identify stages:

a. **during** degree
b. **after** degree

Want to know whether work was undertaken, how much (part time or full time), what their job title was and what responsibilities they had.

Also want to know what year they finished degree and if there were any periods that they were not employed.

1. As far as you are aware, are you in a graduate development program in your organisation? (By GDP I mean a program of activities which graduate recruits are expected to undertake. Activities may include socialising, mentoring, job rotation, training)?
   
   • Yes (go to Section B)
   • No (go to Section C)
Section B

1a. Which of the following activities have you undertaken in this organisation?
1b. How often have you undertaken them?

<table>
<thead>
<tr>
<th>Development programs</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job rotation</td>
<td></td>
</tr>
<tr>
<td>In house seminars/workshops</td>
<td></td>
</tr>
<tr>
<td>External seminars/workshops</td>
<td></td>
</tr>
<tr>
<td>Mentoring system</td>
<td></td>
</tr>
</tbody>
</table>

13 Employee self assessment

- Career planning workshops
- Career workbooks
- Computer software

Organisational Potential Assessment Processes

- Promotability forecast
- Psychological testing
- Assessment centre
- Interview process
- Job assignment

Internal Staffing Information Exchange

- Career information handbooks
- Career ladders
- Career resource centre
- Other career information or systems

15 Individual Counselling/Career

- Supervisor or line manager
- Senior career advisors
• HR staff
• Specialized counselor – internal or external

Job Matching systems
• Job posting
• Skills inventories/audit
• Staffing committees
• Internal placement system

2. Are there any other activities (not listed here) that you have undertaken as part of your development program?

3. How often (if at all) is your development program reviewed with you?

4. Is your graduate development program documented? What documents are kept and who keeps them? Are you willing for copies of the documentation in your possession to be copied to contribute to the research?

5. Who do you think is responsible for arranging your training and development activities?

6. Do you know how long the GDP lasts?

7. What will happen to your career/job title when your GDP program ends?

8. Are you encouraged to apply for training outside of and in addition to the GDP? What support, if any, would be offered for this?
Section C

1a. Which of the following activities have you undertaken in this organisation?
1b. How often have you undertaken them?

<table>
<thead>
<tr>
<th>Development programs</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job rotation</td>
<td></td>
</tr>
<tr>
<td>In house seminars/workshops</td>
<td></td>
</tr>
<tr>
<td>External seminars/workshops</td>
<td></td>
</tr>
<tr>
<td>Mentoring system</td>
<td></td>
</tr>
</tbody>
</table>

17  **Employee self assessment**  18
- Career planning workshops
- Career workbooks
- Computer software

Organisational Potential Assessment Processes
- Promotability forecast
- Psychological testing
- Assessment centre
- Interview process
- Job assignment

Internal Staffing Information Exchange
- Career information handbooks
- Career ladders
- Career resource centre
- Other career information or systems

19  **Individual Counselling/Career**  20
- Supervisor or line manager
- Senior career advisors
• HR staff
• Specialized counselor – internal or external

Job Matching systems
• Job posting
• Skills inventories/audit
• Staffing committees
• Internal placement system

2. Are there any other activities that you have undertaken?

3. Is your training documented? What documents are kept and who keeps them? Are you willing for copies of the documentation in your possession to be copied to contribute to the research?

4. Who do you think is responsible for arranging your training and development activities?

5. Are you encouraged to undertake any additional training? What support, if any, do you think would be offered for this?
Section D

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Strongly disagree</th>
<th></th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I would be very happy to spend the rest of my career in this organisation</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2.</td>
<td>I do not feel a strong sense of belonging to my organisation</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3.</td>
<td>I believe that I have too few options to consider leaving this organisation</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4.</td>
<td>I do not feel any obligation to remain with my current employer</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5.</td>
<td>I do not feel like “part of the family” at my organisation</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6.</td>
<td>I owe a great deal to my organisation.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7.</td>
<td>I do not feel “emotionally attached” to my organisation</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>8.</td>
<td>One of the major reasons I continue to work for this organisation is that leaving would require considerable personal sacrifice; another organisation may not match the overall benefits I have here.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>9.</td>
<td>It would be very hard for me to leave my organisation right now, even if I wanted to</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>10.</td>
<td>I would not leave my organisation right now because I have a sense of obligation to the people in it.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>11.</td>
<td>Too much of my life would be disrupted if I decided I wanted to leave my organisation right now</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>12.</td>
<td>Right now, staying with my organisation is a matter of necessity as much as desire</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>13.</td>
<td>I would feel guilty if I left my organisation now</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>14.</td>
<td>This organisation has a great deal of personal meaning for me</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>15.</td>
<td>One of the few negative consequences of leaving this organisation would be the scarcity of available alternatives</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>16.</td>
<td>I really feel as if this organisation’s problems are my own</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>17.</td>
<td>Even if it were to my advantage, I do not feel it would be right to leave my current organisation now.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>18.</td>
<td>I would feel guilty if I left my organisation now</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
Appendix E – Descriptive Data
Descriptive responses from individuals in a graduate development program

<table>
<thead>
<tr>
<th>Individual ID</th>
<th>Organisation ID</th>
<th>GDP Duration (months)</th>
<th>Tenure (months)</th>
<th>Previous construction</th>
<th>Previous experience (months)</th>
<th>Experience of previous construction</th>
<th>Job rotation</th>
<th>Inhouse seminars</th>
<th>External seminars</th>
<th>Mentor</th>
<th>Career Information</th>
<th>Psychological testing</th>
<th>Interview</th>
<th>GDP Performance review</th>
<th>Frequency</th>
<th>Affective commitment score</th>
<th>Normative commitment score</th>
<th>Continuance commitment score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
<td>36</td>
<td>3-6</td>
<td>Yes</td>
<td>&gt;12</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Monthly</td>
<td>34</td>
<td>24</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>36</td>
<td>3-6</td>
<td>Yes</td>
<td>&gt;12</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
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Descriptive responses from individuals not in a graduate development program

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Annual: 32, 27, 28

29, 30, 23

16, 25, 11
Appendix F – t-test results
Job rotation, whole sample

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Independent Samples Test

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<th>Std. Error Difference</th>
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## Job rotation – no GDP

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### Independent Samples Test

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### Independent Samples Test

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### Independent Samples Test

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Independent Samples Test

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<th>t-test for Equality of Means</th>
<th>95% Confidence Interval of the Difference</th>
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Job interview – no GDP

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<th>Std. Error Mean</th>
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Independent Samples Test

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### Independent Samples Test

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