

**A STUDY OF THE RELATIONSHIP BETWEEN STUDENTS' PARTICIPATION IN
THE COMMERCE EDUCATION DEVELOPMENT UNIT AND THEIR GRADUATE
ATTRIBUTES**

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COMPULSORY DECLARATION:

This work has not been previously submitted in whole, or in part, for the award of any degree. It is my own work. Each significant contribution to, and quotation in, this dissertation from the work, or works of other people has been attributed, cited and referenced.

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ABSTRACT

This study examined the extent to which participation in the University of Cape Town's Commerce Education Development Unit (CEDU) extended programme is related to the presence of social psychological graduate attributes in second and third year CEDU students ($n = 104$). This study used second and third year mainstream students as a comparison group ($n = 175$) as they are assumed to have the required graduate attribute levels for academic success. Data was gathered through a questionnaire using Likert-type scales. A series of analyses were then conducted to test the hypothesis and sub-hypotheses. The main results revealed that after participating in the CEDU extended programme for up to three years, CEDU students have the same perceived levels of the measured graduate attributes as students in mainstream programmes, after the possible effects of three covariates have been taken into account. This study highlights the complexity of developing graduate attributes in previously disadvantaged students of colour in a South African context. The findings of this study provide a basis for future research into the development of graduate attributes in previously disadvantaged students as an antecedent of academic success and employability.

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CHAPTER 1: INTRODUCTION

The attributes expected of university graduates are heavily influenced by the needs and demands of the complex and ever-changing workplace and industry (Possa, 2006; Reissner & Watson, 2010; Sleezer, Gularte, Waldner & Cook, 2004). Industry and universities alike have recognised that having only a university qualification is no longer sufficient for exceptional performance in the workplace (Raybould & Sheedy, 2012). While studying, it is recommended that graduates engage in extra curriculum activities that help them develop a series of skills or attributes that differentiate themselves from other graduates. Employers are demanding graduates that possess a variety of generic attributes in addition to a degree in a given field (Coetzee, 2012). The aim of this research study is to determine whether engagement in the University of Cape Town's (UCT's) Commerce Education Development Unit (CEDU) graduate attribute development interventions is related to the presence of generic psychosocial graduate attributes in CEDU students. Furthermore, the study aims to determine whether CEDU students' levels of generic psychosocial graduate attributes are any different to students in mainstream Commerce programmes. Graduate attributes not only better prepare graduates for the workplace, but allow graduates to transfer their skills developed in tertiary institutions into the workplace and ultimately achieve success (Boyatzis, 1982).

The channelling of resources to develop graduate attributes is greatly needed as the legacy of Apartheid has left many South Africans with an inferior and dysfunctional primary and secondary education system, which in many cases has been inadequate in preparing students for higher education (Dryden-Peterson & Sieborger, 2006; Pym & Kapp, 2011; Scott, 2009; Vincent & Idahosa, 2014). Figures from 2005 illustrate the situation, with a gross enrolment rate in higher education of only 16% in South Africa (for the age group of 20 to 24 year olds), whereas countries like the United States and South Korea have gross enrolment rates of 83% and 91%, respectively (Scott, 2010; UNESCO, 2007). The majority of students enrolled in South African higher education in 2005 were white (60%), where the minority were coloureds (12%) and blacks (12%) (Scott, Yeld, & Hendry, 2007). These racial disparities highlight the persistence of racial inequalities and that only a small intake of students comprises of the top decile of youth in South Africa (Scott, 2009). Improvements are, however, constant as since 2005, black enrolment in South African higher education has increased by approximately 51% (MacGregor, 2009). Unfortunately, increases are compromised by the fact that black students' performance rates are lower than those of white

students, with fewer black than white students graduating each year (Letseka & Maile, 2008; Scott et al., 2007). The result is that less than 5% of enrolled black students ultimately succeed in South African higher education.

With the above in mind, Scott (2009) states that higher education institutions have a choice, to accept the situation in South Africa as unavoidable, and thus not their responsibility, or to willingly make an effort to adjust their practices in the delivery of education, to try and make a contribution to development and the need for graduates. Higher enrolment rates alone are not good enough, these efforts need to be accompanied by efforts to increase higher education success rates, and subsequent employment rates, especially in previously disadvantaged social and ethnic groups (Scott, 2009). Success in this instance is the ability to pass university coursework and complete an academic programme within the minimum allocated time frame (Vincent & Idahosa, 2014). It is thus imperative that structures and approaches are created to increase higher education success rates, and that a continual emphasis is put on redressing past inequities caused by Apartheid, as both an element of social justice and to grow knowledge, skills and attributes needed for development in South Africa (Scott, 2013).

The need for these structures and approaches to rectify ill-preparation and increase higher education success rates of black students in South Africa has been recognised by higher education institutions throughout the country. The University of Cape Town (UCT), for example, has embraced academic development through their Centre for Higher Education Development (CHED) for over two decades (CHED, 2014). The Academic Development Programme (ADP) is the largest of the CHED units and is the main promoter of equity in the student body (CHED, 2014). One of the core functions of this unit is to develop and run programmes that nurture the success of students coming from disadvantaged educational backgrounds (CHED, 2014). These programmes are run through Education Development Units (EDUs) which are decentralised to all of the UCT Faculties. External funders and the university itself make a large investment in academic development and thus the development of the various EDUs and the students within (CHED, 2014). Although EDUs exist in every faculty, this research focuses on the EDU located in UCT's Faculty of Commerce.

UCT's ADP addresses the need for an increase in black student enrolment and higher black student graduation through the implementation of a flexible approach to higher education. In this approach, an extended, specialised curriculum is undertaken in which expert staff run

small, separate extra courses and workshops, and mentors, student advisors and counsellors are available (Pym & Kapp, 2011). The psychosocial courses and workshops, in particular, act as interventions in the development of graduate attributes, which ultimately increases the probability of CEDU students' academic success and their level of employability. Students in the CEDU extended programme have lower admission requirements owing to the possibility that they are challenged by socio-economic factors and language barriers (Yeld, 2007) and the possibility that the schools attended by these students are in need of drastic improvement (Pym & Paxton, 2013; Scott, 2009). These schools do not provide a high standard of education, nor fully cover the traditional curricula (MacGregor, 2009; Pym & Paxton, 2013; Scott, 2009; Warren, 2002). Given this background, and the discrepancy in black and white throughput rates, it is expected that students placed in the CEDU extended programme when they start university have lower perceived levels of academic ability and hard and soft graduate attributes than students placed in mainstream programmes when they start university.

Aims of the Research

This study assumes that the extended programme put in place by the CEDU can provide a foundation for the development of psychosocial graduate attributes, and that the social psychological support increases the likelihood of the development of generic graduate attributes. This assumption is based on the fact that the CEDU extended programme was developed by well-established long serving educationalists, who have spent their careers focusing on the mechanisms to promote academic development and are shown to be leaders in this field. For example, Associate Professor June Pym, the Director of the UCT CEDU recently won a HELTASA/CHE National Excellence in Teaching and Learning Award (HELTASA, 2014), which acknowledges the success of her work in the CEDU and also recognises the success of the CEDU programme. According to the UCT Dean of Commerce, Professor Don Ross, the CEDU's success is shown in the success rates of the programme, where the CEDU staff produced 157 graduates in 2013, resulting in a success rate of 80%. Many of these graduates will go on to qualify as chartered accountants and actuaries, to name but a few. There is a heavy reliance on Pym's published work throughout the chapters that follow, as most of the writing on the CEDU is by her and her colleagues. Additionally, much of the information in this literature review has been drawn from Ian Scott's work, an expert in the field of academic development who has been instrumental in the development of higher education in South Africa.

It is acknowledged upfront that the CEDU extended programme is not the only variable that can affect the development of graduate attributes, thus academic motivation, matriculation performance and university performance are included as covariates. Although many possible covariates could affect the development of CEDU students' graduate attributes, research and correspondence with the CEDU (J. Pym, personal communication, April 2, 2014) proposes that the chosen covariates are the major players. The lack of empirical research on the relationship between the CEDU and graduate attributes leads to this study's primary research question:

Do students in the CEDU, given their matriculation performance, university performance and perceived level of academic motivation, have the same perceived levels of psychosocial graduate attributes (academic self-efficacy, interactive skills and continuous-learning orientation) as students in the mainstream programme, after they have been in the CEDU programme for up to three years?

CHAPTER 2: LITERATURE REVIEW

The following literature review provides a general overview of how generic graduate attributes are defined, and which generic graduate attributes are perceived as important by different stakeholders, including higher education, employers and students. The ensuing literature review is somewhat generalised as there is a lack of research on graduate attributes in South Africa, and the attributes present in black graduates specifically. The review then discusses ADPs in South African universities, and more specifically, the ADP run through CEDU at UCT.

The above discussion comes into context as there are serious concerns regarding an increasingly widening gap between graduates' skills and capabilities and the needs and demands of the work environment (Andrews & Higson, 2008). Thus, higher education's role in the development of graduate attributes has been increased in value by government, industry and higher education themselves (Bath, Smith, Stein & Swann, 2004). However, perceptions differ when considering where the responsibility for the development of graduate attributes lies. Employers believe that higher education is responsible for the development of graduate attributes, however, there are debates within higher education regarding what attributes they are responsible for and how to bring these about (Boyatzis, Stubbs & Taylor, 2002). In addition to the conflict over the responsibility of the development of graduate attributes, research argues that differences in the graduate attributes regarded as important by industry and higher education. It is thus controversial that higher education should be responsible in providing their graduates with more than degree-specific knowledge, and furthermore to ensure that they are employable. Some universities, like the University of Sydney in Australia, have accepted their new vocational role and have embedded graduate attributes into their course curricula (Green, Hammer & Star, 2009). Some confusion still exists regarding this issue in South African universities, where resources are being channelled to develop graduate attributes (Coetzee, 2012; Favish & McMillan, 2009).

Defining Graduate Attributes

Identifying the attributes that make graduates employable is becoming increasingly difficult due to the changing nature of the workplace (de la Harpe & David, 2012; Holtzhausen, 2012). Graduate attributes are defined as the skills, personal attributes and values that a graduate must acquire regardless of their field of study (see Table 1 for examples) (Bath et al., 2004). Attributes are combinations of cognitive skills, like technical knowledge and expertise, and

behavioural characteristics, like attitudes and values, which are a function of an individual's personality (Hodges & Burchell, 2003), and represent the ability to perform in the future (Boam & Sparrow, 1992; Page, Wilson & Kolb, 1993). Boyatzis (1982) states that successful performance depends on the presence of graduate attributes, which he describes as a person's underlying characteristics. These underlying characteristics form three clusters, namely cognitive ability, self-management and relationship management. Similarly, Hodges and Burchell (2003) suggest that successful performance depends on the presence of both cognitive skills and behavioural characteristics. Coll and Zegwaard (2006), however, suggest that the presence of cognitive skills and behavioural characteristics needs to be combined with self-efficacy in order to lead to successful individual performance.

Little research has been conducted on graduate attributes in South Africa. However, Coetzee (2012), a prominent researcher on the subject, states that employability and work readiness can be predicted by "graduateness", where employability is described as the capability of finding and keeping fulfilling work (Minten, 2010) and "graduateness" is described as a graduate's ability to demonstrate a set of generic meta-skills and personal attributes. Coetzee (2012) also states that employability contains elements of self-directedness, self-sufficiency and personal agency in the workplace, which is a similar description to the above discussion, suggesting that the South African understanding of graduate attributes is aligned with the rest of the world.

Research in this area suggests that employers and graduates identify hard technical knowledge and skills as important, but these skills alone are insufficient for successful performance, as successful performance in the workplace requires the utilisation of hard technical knowledge and skills, soft skills (Caudron, 1999; Andrews & Higson, 2008) and self-efficacy (Bandura, 1986). Graduate employers are thus placing a large amount of emphasis on softer skills when recruiting and monitoring performance on the job, and it is thus imperative that these attributes are developed in higher education (Raymond, McNabb & Matthaei, 1993; Weisz, 1999). Hard technical knowledge and skills are linked to specific subject knowledge and include qualifications, knowledge and technical ability associated with a specific industry (Rainsbury, Hodges, Burchell and Lay, 2002). Soft skills include writing, presenting, teamwork, critical thinking and time-management skills, as well as reliability, professionalism and creativity (Andrews & Higson, 2008). Soft skills are required to communicate the hard technical knowledge and skill (Caudron, 1999). Individuals with high self-efficacy approach difficult tasks as challenges to be perfected and not as threats to

be avoided, they set challenging goals and remain committed to them, if they fail they are not discouraged and recover quickly, and they approach threatening situations with the mind-set that they can exercise control over them, ultimately reducing stress and producing personal accomplishments (Bandura, 1993). More specifically, academic self-efficacy is described by Lent, Brown and Larkin (1986) as an individual's expectation of success when completing specific academic tasks. Academic self-efficacy has been associated with achievement and persistence among engineering and science undergraduate students (Brown, Lent & Larkin, 1989; Hackett, Betz, Casas & Rocha-Singh, 1992; Lent et al., 1986), demonstrating that regardless of degree of study, self-efficacy enables a student to manage their learning environment (Burton & Dowling, 2005).

It is evident from the literature that different stakeholders have differing views on how to define graduate attributes, thus leaving little consensus on which graduate attributes higher education institutions should go about instilling in their students.

Generic Graduate Attributes

Generic graduate attributes are the skills, abilities and competencies that are positively associated with work performance in an employee's specialised field, and the skills needed to transfer expertise learnt in the classroom to the workplace, in order to accomplish work demands (Cheah & Yu, 1996; Day, 1988; Jacobsen, 1993; Lam, 1994; Mitchell, 2003; Sandberg, 1991; Sohal, 1997). Thus, an individual can be deemed competent if they possess the generic skills and attributes necessary to complete an undertaken task (Coll & Zegwaard, 2006). The evolving importance of generic graduate attributes in higher education is influenced by an increasing focus on the relationship between higher education and the employment of graduates and the perspective that education is a lifelong process (Cummings, 1998; Martin, Maytham, Case & Fraser, 2005).

Generic graduate attributes are desired by employers and are instrumental in a graduate's level of employability regardless of their field of study (Barrie, 2004). Graduates who have generic attributes like communication and interpersonal skills, leadership and teamwork skills, oral and written skills, cognitive and numeric skills, research skills, problem-solving skills and computer skills are attractive to employers (Ball, 1989; Boud & Middleton, 2003; Cheah & Yu, 1996; Day, 1988; Jacobsen, 1993; Kanapathy, 2001; Lam, 1994; Lee, 2000; Lee, Quek & Chew, 2001; Mason, 1992; Schroder, 1989; Sear, 1994). In addition to these skills, attributes like diligence, flexibility, honesty, dependability and adaptability should be

present in employees for workplace success (Greatex & Phillips, 1989; Lee et al., 2001; Savickas, 2000; Smith, Oczkowski, Noble & Macklin, 2002).

In Malaysia, Quek (2005) performed a study in which he determined which generic attributes are present when graduate employees achieve successful workplace performance. He found that interpersonal skills, knowledge-acquiring skills, flexibility, value-improving skills, practical orientation abilities and cognitive skills are the most important generic attributes in determining graduate employee's performance success. Locally, Coetzee (2012) found eight core attributes that determine a student's "graduateness" and thus employability – problem-solving and decision-making, analytical thinking skills, enterprising skills, ethical and responsible behaviour, presenting and applying information skills, interactive skills, goal-directed behaviour and continuous learning orientation. Graduates with generic attributes stand out, and are more recognisable to employers (Lam, 1994; Quek & Soon, 1999). There is empirical evidence suggesting that when practical-oriented attributes are present in employees, they can perform their work successfully (Appelbaum, Hebert & Leroux, 1999; Quek, 2000; Schroder, 1989). These attributes include being aware of diversity, being able to mobilise and integrate skills and abilities to specific tasks or demands of the workplace, and having a global understanding (Appelbaum, Hebert & Leroux, 1999; Quek, 2000; Schroder, 1989). Graduates who have acquired generic attributes like these are more employable than graduates who have not managed to acquire generic attributes (Quek, 2005).

Generic graduate attributes are important in all spheres of life (Barrie, 2004; Quek, 2005) and cannot be compared to work entry level knowledge-based skills, as they go beyond this, encompassing more than knowledge, but softer interpersonal skills as well (Barrie, 2004). Barrie (2004), Coetzee (2012) and Holtzhausen (2012) suggest that the development of graduate attributes should be emphasised in order to equip graduates with more than the attributes required for employability, higher education should develop students to be responsible citizens of the world, who are effective members of society and promote social good.

Through a review of literature the examples of generic attributes in Table 1 were found (Andrews & Higson, 2008; Chetty, 2012; Coll & Zegwaard, 2006; Quek, 2005)

Table 1
Examples of Generic Graduate Attributes

Graduate Attributes		
Critical thinking	Local and independent thought	Intellectual rigour
Self-efficacy (Academic)	Communication skills	Creativity
Ethical practice	Information management skills	Imagination
Intellectual curiosity	Integrity	Tolerance
Interpersonal skills	Problem-solving skills	Adaptability
Leadership skills	Computer skills	Knowledge-acquiring skills
Teamwork skills	Diligence	Value-improving skills
Oral and written skills	Flexibility	Practical orientation abilities
Cognitive and numeric skills	Honesty	Diversity awareness
Research skills	Dependability	Ability to mobilise and integrate tasks

It is important to consider the perceptions of graduate attributes of different important stakeholders. These stakeholders may include higher education, employers and students themselves. The following section of the review presents research on what these perceptions may be and what graduate attributes these stakeholder groups consider most important.

Higher Education Perceptions of Graduate Attributes

Generic attributes are developed in the process of higher education, regardless of content and field of study (Barrie, 2004). These attributes are thus not gained by attending an additional course or curriculum; they are gained from the higher education experience, where the development of graduate attributes is integrated and embedded into the curricula (Bath et al., 2004). Holtzhausen (2012) concurs and states that it is imperative that higher education programmes are designed in a manner that builds competencies, ultimately leading to enhanced “graduateness” and employability. It is suggested that generic attributes can be developed in all disciplinary contexts, and can be seen in any graduate, regardless of their degree (Barrie, 2004).

Higher education’s role in the development of graduate attributes has been increased in value by government, industry and higher education institutions themselves (Bath et al., 2004). For example, The Dearing Report in the United Kingdom (National Committee of Enquiry into Higher Education, 1997) states that a culture of challenging existing ideas, generating new ideas, disciplined thinking and curiosity should be sustained by higher education in order to create students who become part of the conscience of a democratic society. Research argues that the primary function of higher education institutions is to prepare students for work

through the development of generic and specific attributes (Rainsbury et al., 2002). However, Boyatzis et al. (2002) states that although faculties within American universities acknowledge the importance of graduate attributes, they fail to see the development of these attributes as their responsibility. Research by Barrie (2002, 2003) shows similar findings in that Australian university teachers responsible for the development of students' generic graduate attributes do not have a common understanding of the nature of the attributes nor the teaching and learning processes that facilitate the development of the attributes.

Proponents of the idea of universities taking responsibility for this development suggest that higher education institutions need to actively identify and map opportunities for graduate development across the curricula, which makes existing support and opportunities for the development of graduate attributes explicit to all parties, including students, teachers, management and external stakeholders (Bath et al., 2004). However, instead of actively identifying and mapping opportunities, many institutions are quick to pass the responsibility onto departments like career placement offices or external parties hired to conduct workshops that do not count towards curriculum credits.

Recently in Australia, graduate attribute development became a condition of government funding (Green, Hammer & Star, 2009). In response, Australian universities made a considerable effort in integrating attribute development into their curricula by implementing policies and projects (Green, Hammer & Star, 2009). Bath et al. (2004) suggest that universities in Australia have accepted their new vocational role. However, there is still confusion as to how graduate attributes and attributes should be implemented and developed (Green, Hammer & Star, 2009). The challenge is to integrate attribute development into the curricula at higher education institutions. This develops the whole person by developing attributes that increase the graduates' probability of success (Boyatzis et al., 2002). It seems that soft skills like reliability, professionalism and creativity (Andrews & Higson, 2008) are often less emphasised in higher education institutions (Coll & Zegwaard, 2006). The main reason for this seems to be that they are seen as harder to develop than hard skills (knowledge and technical ability), thus more time, resources and effort are needed to develop and measure them.

Barrie (2004) did a re-examination of the generic graduate attributes Australian universities' claim they develop. In this study, he found three overarching attributes, including both hard and soft skills that are important outcomes of higher education. Firstly, he identified

scholarship, described as a stance or attitude toward knowledge. Secondly, he identified global citizenship, described as a stance or attitude towards the world, and thirdly, he identified lifelong learning, described as a stance or attitude towards oneself. These three overarching attributes are supported by the development of disciplinary clusters of attributes, including research and inquiry, information literacy, personal and intellectual autonomy, ethical, social and professional understanding, and communication (Barrie, 2004).

Higher education institutions often rate a certain set of attributes as important and then develop only those attributes in their students (Coll & Zegwaard, 2006). For example, if a university believes that being competent in the operation of scientific instruments is important, they will run workshops and teach in a way that develops this attribute (Coll & Zegwaard, 2006). On the other hand, when university staff believe that certain attributes are less important, they may fail to develop those skills in their students. The non-development of these skills may not even be intentional, the university may just be uncertain as to how the development of these skills could be integrated into a conventional, mainstream undergraduate programme (Coll & Zegwaard, 2006). What is taught is thus relatively subjective, and dependent on various stakeholder opinions. This subjectivity was considered in a study by De la Harpe and David (2012) who asked academic staff in different Australian universities to rate the importance of various graduate attributes. It was shown that in this context academic staff place the highest value on written communication, willingness, problem-solving, critical thinking and confidence, and place the least value on teamwork, information and communication technology and information literacy. This research differs to Barrie's (2004) study, demonstrating that a set of graduate attributes considered important by higher education has not been universally decided on.

Employer Perceptions of Graduate Attributes

The above discussion proposes that the primary function of higher education is to prepare graduates for the workplace by developing attributes that employers perceive as useful (Rainsbury et al., 2002). However, technical attributes attained through higher education alone are not sufficient for employability. As previously discussed, having only academic knowledge and technical skills is no longer sufficient for successful performance in the workplace (Potgieter and Coetzee, 2013). Successful workplace performance requires the addition of softer skills like behavioural attributes and self-efficacy developed through training, experience, natural abilities or education (Holtzhausen, 2012).

Research from industry's perspective suggests that higher education institutions produce students who are unemployable due to attribute insufficiencies, as personal attributes and behavioural characteristics are underdeveloped (Kruss, 2004). On the other hand, if an applicant has the right personal attributes, but lacks technical skills, they should have the capacity to acquire the necessary technical skills and knowledge required for acceptable performance on the given job (Spencer & Spencer, 1993). However, when there is a lack of training by employers, the expectation on higher education institutes to develop attributes increases, and employers feel a sense of resentment towards higher education institutions, as they should have developed these attributes throughout their education (Spencer & Spencer, 1993).

Differences in the graduate attributes considered as important by employers may differ due to the possibility that different industries require generic attributes as well as differing discipline specific technical knowledge. Employers have trouble agreeing on the balance between the importance of graduates' personal characteristics and discipline specific technical knowledge (Harvey, Burrows & Green, 1992). Research by Liston (1998), Meade and Andrews (1995), Sweeney and Twomey (1997), Stasz (1997) and Weisz (1999), however, state that employers are putting increasing emphasis on personal attributes, rather than specific technical knowledge both in the recruitment of employees and in employee performance. In some research it has even been suggested that a graduate's emotional quotient, instead of the intelligence quotient, should be used as a predictor for employability and performance, as it is more reliable than using hard skills as predictors (Kemper, 1999; McMurchie, 1998). Furthermore, Raymond et al. (1993) argue that employers place major emphasis on generic, behavioural attributes in recruitment of graduates and in the way that graduates are expected to perform on the job. Therefore, these attributes should be developed before recruitment, so that graduates can meet employer needs and expectations (Haber, 1993). Weisz (1999) also found that employers have an expectation that students have developed attributes prior to employment, especially in degree programmes which encompass work-based cooperative education, which is considered the most important educational method by employers and students (Raymond et al., 1993). To illustrate the latter point, Hodges and Burchell (2003) performed a study in New Zealand in which the importance of graduate attributes was compared to the perceived performance of the attributes by the graduates and found that employers desired increased levels of attributes from recent business graduates.

There is limited research in this context in South Africa, but a recent study by Bernstein and Osman (2012) proposes that higher education institutions are challenged by employers, who desire attributes like moral leadership, self-awareness, awareness of others, social responsibility and global citizenship from graduates. Graduates with these qualities are described by Bernstein and Osman (2012) as professional members of society who can think critically, reflect and appreciate diversity and complexity. Thus, to be employable entails not only the application of knowledge to a relevant field, but to communities and broader society.

It appears from the available literature that various factors influence employer expectations of graduate attributes, some of which include the discipline, workplace context and the level of degree obtained by the graduate (Hodges & Burchell, 2003). The skill set expected of the graduate is often dependent on the size of the employer, the region to which the employer belongs and the employer's market orientation (Atkins, 1999). Research suggests that there are various generic graduate attributes and transferrable skills that employers expect from graduates (Bernstein & Osman, 2012; Chetty, 2012; Raybould & Sheedy, 2005). These skills and attributes can be used in different jobs, different professions and at different times of an employee's career (Bernstein & Osman, 2012; Chetty, 2012; Raybould & Sheedy, 2005). In South Africa, some employers consider basic skills, people skills, thinking skills and personal attributes as important clusters of attributes expected of graduates before entering the workplace (Crisp, 2012, Mabuza, 2012, Shuttleworth, 2012). Table 2 illustrates examples of graduate attributes that are expected or required of graduates by employers and considered important for employability. These graduate attributes were found in the studies of Coetzee (2012), Hodges and Burchell (2003), Joseph and Joseph (1997), Maes, Weldy and Icenogle (1997) and Stasz (1997). Although the various studies done by Bernstein and Osman, Crisp, Coetzee, Mabuza and Shuttleworth provide insight into the graduate attribute realm in South Africa, this research is very limiting in comparison to research in the rest of the world.

Ability and willingness to learn was found to be the most important graduate attribute in four different studies (Burchell, Hodges & Rainsbury, 2001; Coll, Zegwaard & Hodges, 2002a, 2002b; Hodges & Burchell, 2003), suggesting that employers find it necessary for graduates to be confident in their abilities and learn new skills in order to stay capable in a changing world (Stephenson, 1997). In essence, this proposes that employers are looking for individuals who are able to adapt and transform in a changing workplace.

Table 2

Graduate Attributes Considered Important By Employers

Analytical thinking skills	Positive attitude	Customer service orientation
Problem-solving	Independence	Order, quality and accuracy
Self-motivation	Energy and passion	Flexibility
Teamwork	Cooperation	Achievement orientation
Ability and willingness to learn	Interpersonal communication	Initiative
Self-control	Planning and organisation	Relationship building
Problem-solving and decision-making	Ethical and responsible behaviour	Presenting and applying information skills
Interaction skills	Enterprising skills	Goal-directed behaviour

Hodges and Burchell (2003) found that attributes considered least important by employers were organisational awareness, impact and influence on others, leadership and developing others. Other attributes considered less important in this study were technical expertise and computer literacy. Norwood & Henneberry (2006) found that employers consider awards earned and a graduate's Grade Point Average (GPA) less important than features such as their character, dedication to their career goals and work experience. It is worth noting that the majority of the attributes considered important by employers are soft skills, whereas less important attributes such as GPA, technical expertise and computer literacy are classified as hard skills. Weisz (1999) found that academic ability and generic attributes are not necessarily related to one another. Considering the lesser importance of GPA and technical skills and knowledge, this suggests that employers feel that if an applicant has the right personal attributes but lacks the technical skills, they should have the capacity to acquire the deficient technical skills and knowledge required for acceptable performance on the given job through training and education (Hodges & Burchell, 2003; Spencer & Spencer, 1993). Furthermore, it proposes that employers consider hard skills "a given", whereas soft skills are less easily acquired.

Student Perceptions of Graduate Attributes

Nguyen, Yoshinari and Shigeji (2005) suggest that there is a need for improvement in the personal attributes of students and that this improvement is required to come from both universities and students themselves. However, research suggests that students hold employers responsible for the development of attributes that the employer finds important and that these attributes are expected to be developed through training in the workplace (Kruss, 2004). Likewise, Japanese students in a study by Nguyen et al. (2005) stated that their friends and part-time work experiences taught them more about attributes than their

university lecturers or parents, suggesting that graduates are of the opinion that many factors contribute to the development of graduate attributes.

In a study by Rainsbury et al. (2002) in New Zealand, no statistical significant differences in the perceived importance of soft and hard skills by students were found. As discussed previously, research postulates that employers consider soft skills more important than hard skills, thus suggesting that students perceive technical skills, knowledge and academic ability to be more important in the workplace than employers. Computer literacy, customer service orientation, teamwork and cooperation, self-confidence and willingness to learn were considered the most important graduate attributes, whereas directiveness, organisational awareness, developing others and impact and influence on others were considered the least important graduate attributes by students. The finding that willingness to learn, which is ranked most important by employers, is also in the top five most important attributes to students, proposes that students agree with the notion that to stay capable in a changing world, they need to be willing to learn. Additionally, Crebert, Bates, bell, Patrick and Cragnolini (2004) suggest that teamwork has been emphasised as important by students as it aids in the development of generic attributes such as leadership skills, interpersonal and communication skills and ethical decision-making skills. Other skills listed as important by students can be found in Table 3 (Hackett et al., 1985; Rainsbury et al., 2002).

Table 3
Graduate Attributes Considered Important By Students

Personal planning	Communication skills	Interpersonal understanding
Relationship building	Technical expertise	Conceptual thinking
Achievement orientation	Information seeking	Organisational commitment
Initiative	Order and quality	Organisational awareness
Flexibility	Self-control	Organisational skills
Analytical thinking	Team leadership	

The review so far has covered research relating to generic graduate attributes and the perceptions that higher education, employers and students have of these attributes. Differences and similarities in the graduate attributes that are considered important can be seen across the three groups, however it is quite clear that all three groups consider hard attributes such as critical and analytical thinking skills and soft attributes like communication skills, vitally important to successful performance in the workplace. Table 4 shows the common graduate attributes considered important by higher education, employers and students.

Table 4

Graduate Attributes Considered Important By Higher Education, Employers and Students

Initiative	Social understanding	Conceptual thinking
Willingness	Research and inquiry	Communication skills
Self-motivation	Information seeking	Interaction skills
Analytical thinking	Ethical understanding	Self-control
Problem solving	Teamwork skills	Autonomy

Research proposes that graduate attributes can be developed through training, experience, natural abilities or education (Holtzhausen, 2012). ADPs, first used in South Africa in 1980, may also be considered sites for the fostering of graduate attributes. The next section of this review will focus on the importance and use of ADPs in South African universities, and will then refine the focus to the placement methods and curriculum of the ADP at UCT, specifically discussing the graduate attributes intended to be developed through the programme and how the programme develops these attributes.

Academic Development Programmes

The term academic development is known internationally, however, the meaning and associations differ in South Africa from the rest of the world (Scott, 2009). The rest of the world uses the term academic development to refer mainly to academic staff development, whereas in South Africa, the term refers to Academic Support/Development Programmes (ADPs). Warren (2002) refers to two different types of ADPs, namely semi-integrated and integrated programmes. Semi-integrated programmes infuse development into mainstream programmes using voluntary tutorial support programmes, supplementary instruction programmes (extra optional sessions in the curriculum), language-based modules, introductory modules and foundation programmes (Warren, 2002). Integrated programmes, on the other hand, explicitly build learning skills into the curriculum, and have been found to be more effective than semi-integrated approaches (Warren, 2002). Integrated programmes include language-based programmes, mainstream modules based on academic development principles, and core entry and senior level modules.

South African higher education institutions have moved towards integrated programme approaches, in order to do two things: firstly, to address racial and ethnic inequity issues in universities, and secondly, to focus mainly on specialised forms of instructional design, teaching and tutoring in order to increase academic success rates of previously disadvantaged students of colour (Scott, 2009). Through this process, it is hoped that these students will

develop more hard and soft graduate attributes that will enable them to succeed academically (Warren, 2002), and furthermore, increase their level of employability.

Addressing racial inequality in universities alone does not guarantee academic success. There are major obstacles facing disadvantaged students wanting to succeed in historically white universities. Not only are they challenged by language and socio-economic factors, but by the assumption that prior secondary school learning has been of a high standard and has covered the traditional curricula (Scott, 2009; Warren, 2002; Yeld, 2007). The latter statement presents a challenge as more often than not, the schools attended by these disadvantaged students are in need of drastic improvement and do not provide a high standard of education, nor fully cover the traditional curricula (Scott, 2009). Furthermore, MacGregor (2009) suggests that the curriculum that is being taught in these schools is not being taught properly, and research proposes that a student who has not been taught well at school will have difficulty succeeding at university (Vincent and Idahosa, 2014). The result of this plight is a gap between the assumed level of academic ability and graduate attributes and the actual level of academic ability and graduate attributes of these students. By understanding this gap, one understands why ADPs are necessary and furthermore what these programmes need to accomplish – the closing of this gap. Using specially designed programmes which provide support at tertiary levels and influence placement, curriculum design and classroom practice and instruction, universities in South Africa are attempting to narrow the gap by as much as possible (Scott, 2009; Warren, 2002).

UCT is one of the universities in South Africa addressing this gap. Their ADP is the biggest CHED development unit and focuses on teaching, research and education, having the status of an academic department. The development unit consists of three centralised units working across the university and six faculty-based units (Figure 1).

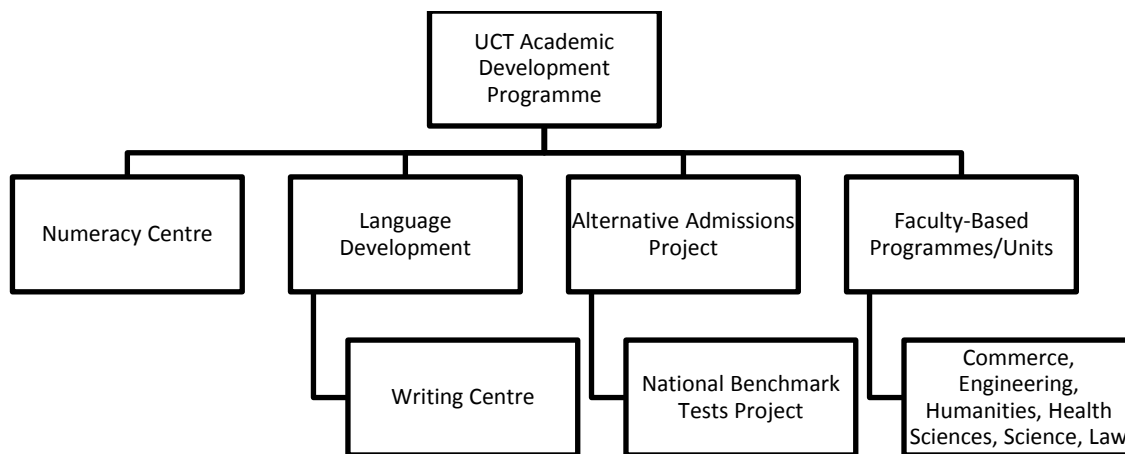


Figure 1. UCT ADP Organogram. Adapted from *Departments Overview*, 2011, Retrieved November 13, 2014, from <http://www.ched.uct.ac.za/departments/overview/>. Copyright 2014 by University of Cape Town.

The primary focus of this research lies in the Commerce Faculty-Based Programme, also known as the Commerce Education Development Unit (CEDU). The CEDU is described by Pym and Paxton (2013) as a unit which provides an opportunity for talented first-generation (the first to attend a higher education institution in their families) students from disadvantaged backgrounds to achieve their full potential. Additionally, the CEDU is a community of socially conscious, thoughtful and literate students (Pym & Paxton, 2013). This proposes that the CEDU is not just concerned with subject matter proficiency, but a holistic approach to the student and their education. As previously stated, ADPs aim to address racial and ethnic inequity and focus on specialised forms of instructional design, teaching and tutoring in order to increase academic success rates of historically disadvantaged groups (Scott, 2009). The following section of the review will describe the student placement processes and the curriculum design used to increase academic success by the CEDU in particular. This in turn will demonstrate the assumption of difference between mainstream and CEDU students on entering university and gap that is being addressed.

CEDU Student Selection and Placement

The CEDU selects students based on race and places students based on performance on the National Benchmark Tests (NBTs). Race is used as a selection method in order to increase numbers in historically disadvantaged groups (black, coloured, Indian or Chinese South Africans or permanent residents) and thus increase racial equality. Consequently, only students belonging to these redress categories may apply to the CEDU. The majority of the students placed in the CEDU are first-generation students who come from working-class

backgrounds, are living in rural and/or township, often impoverished, environments and who do not speak English as their home language (Pym & Paxton, 2013; Yeld, 2007). Language and subject matter literacy barriers thus pose a large threat to these students, as up to 90% of South African learners have to study in English, using English textbooks and writing English tests, assignments and examinations (Pym & Paxton, 2013). These students are well versed in coping with few to no resources as many of them are used to education in disadvantaged, overcrowded schools and are subject to many financial constraints (Pym & Paxton, 2013). Furthermore, the CEDU uses performance results on the NBTs as a placement method, firstly to ensure that students entering the CEDU are in need of the specialised curriculum offered by the CEDU, and secondly to ensure that these students are above the Basic Lower benchmark level of performance (refer to Koch, 2007; MacGregor, 2009; Yeld, 2007) (Table 1). It is important to note that the NBT results are used as additional, not alternative, sources of information by higher education institutions in order to place students in appropriate curricula like the CEDU extended or mainstream programmes – National Senior Certificate (NSC) results obtained by students in secondary schooling are used for higher education selection in addition to the NBT scores (Yeld, 2007). Table 5 shows the NBT scores required for different Benchmark Performance Levels (BPLs). To be placed in the CEDU, a student needs to have Academic Literacy (AL), Quantitative Literacy (QL) and Mathematics NBT scores in the Intermediate Lower BPL. One CEDU student falling into the Basic Upper BPL for either QL or Mathematics is also chosen per year, but this student must have an AL score falling into the Intermediate Lower BPL.

Table 5
National Benchmark Test Required Performance Levels

Benchmark Performance Levels		Academic Literacy		Quantitative Literacy		Mathematics	
		Maximum	Minimum	Maximum	Minimum	Maximum	Minimum
Proficient	Upper	100	83	100	83	100	81
	Lower	82	64	82	70	80	68
Intermediate	Upper	63	51	69	54	67	52
	Lower	52	38	53	38	51	35
Basic	Upper	37	21	37	19	34	17
	Lower	20	0	18	0	16	0

Note. Adapted from *National Benchmark Tests Project*, 2014, Retrieved November 13, 2014, from <http://www.nbt.ac.za/node/69>

If a student belonging to a redress category falls into a BPL higher than Intermediate Lower, they will not be considered for the CEDU extended curriculum programme, but rather for the Commerce mainstream programme. Students belonging to redress categories have lower

admission requirements (both NSC and NBT BPLs) than international or white applicants in the open category (Table 6).

Table 6
Probable Offer Levels for Various Mainstream Commerce Programmes

Mainstream Programme	Probable Offer Level	
	Redress Category	Open Category
BCom (All programmes except Actuarial Science)	70% NSC overall average 70% NSC Mathematics average Intermediate score AL and QL	72% NSC overall average 70% NSC Mathematics average Proficient/Intermediate score AL and QL
BBusSci Management Studies	70% NSC overall average 70% NSC Mathematics average Intermediate score AL and QL	72% NSC overall average 70% NSC Mathematics average Proficient/Intermediate score AL and QL
BBusSci Computer Science	70% NSC overall average 70% NSC Mathematics average Intermediate score AL and QL	72% NSC overall average 80% NSC Mathematics average Proficient/Intermediate score AL and QL
BBusSci and BCom Actuarial Science and Quantitative Finance	78% NSC overall average 80% NSC Mathematics average Intermediate score AL and QL	80% NSC overall average 85% NSC Mathematics average Proficient/Intermediate score AL and QL

At any one time, there are approximately 900 students in different years of study in the CEDU, with approximately 250 of these being in their first year of study. The CEDU is thus relatively big, making up 31% of students belonging to redress categories in the UCT Commerce Faculty. UCT has drastically increased its number of equity students post-1994, with 47% of all students being black (UCT enrolment data, 2009) (as cited in Pym & Paxton, 2013).

Description of the Extended Curriculum Programme

The CEDU has implemented a flexible approach to higher education, where student experience and the creation of a learning community are as important as the curriculum (Pym & Paxton, 2013). In order for the selected CEDU students to succeed academically, augmented and extended BCom and BBusSci programmes were developed, taking into account both the socio-economic backgrounds and academic abilities of the CEDU students.

As discussed, there is an assumption that students entering higher education have levels of academic ability and graduate attributes that will allow them to succeed academically. However, the actual level of academic ability and graduate attributes at which CEDU students enter higher education is different to the assumed level, thus creating a gap between

them and mainstream students. In order to narrow this gap, specialised CEDU staff are dedicated to running extended curriculum programmes in which smaller, separate classes provide a more intimate and personal learning experience. In these classes CEDU staff strive to teach CEDU students the standard curriculum as well as the art of problem-solving, reading, writing and ways of thinking (Pym & Kapp, 2011). These programmes are a year longer than the mainstream programmes. A four year BCom programme and a five year BBusSci programme are offered, compared to the mainstream three year BCom and four year BBusSci programmes respectively.

The CEDU extended programmes include compulsory courses (Step Up and Career Discovery – see Table 8 for more details) which are not in the mainstream programme, and courses which are in the mainstream programme but are taught over longer periods of time and in different periods of the programmes. Some of the desired or perceived necessary attributes are developed in these compulsory augmented courses. Table 7 illustrates the above differences between a mainstream and extended BBusSci Accounting with Finance programme.

Table 7

Bachelor of Business Science in Finance with Accounting for Mainstream and CEDU

	Mainstream	EDU
Year 1	Financial Accounting I Microeconomics I Information Systems I Mathematics 1010 Financial Reporting I Evidence Based Management Macroeconomics I Mathematics 1012 Introductory Statistics Total Credits 162	Business Law I Step Up: Personal Management in the Higher Education Context* Microeconomics* Information Systems I Mathematics 1010* Evidence Based Management Career Discovery* Introductory Statistics* Total Credits 108
Year 2	Marketing I Business Law I & II Microeconomics II Business Statistics Management Accounting I Macroeconomics II Corporate Financial Management Business Ethics Total Credits 168	Financial Accounting I* Macroeconomics I & II Microeconomics II Business Ethics Financial Reporting I Business Law II Mathematics 1012* Total Credits 144
Year 3	Taxation I Company Law I Finance IIA & IIB Information Technology in Business Financial Reporting II Corporate Governance I Management Accounting II People Management Total Credits 180	Marketing I Information Technology in Business Business Statistics Financial Reporting IIA* Corporate Governance I Management Accounting II People Management Corporate Financial Management Total Credits 168
Year 4	Applied Investments Financial Reporting III Strategic Thinking Taxation II Corporate Governance II Business Analysis and Governance Applied Corporate Finance Total Credits 162	Taxation I Company Law Finance IIA & IIB Financial Reporting IIB* Corporate Governance II Management Accounting II Total Credits 144
Year 5		Applied Investments Financial Reporting III Strategic Thinking Taxation II Business Analysis and Governance Applied Corporate Finance Total Credits 144

*Note.** Same content as mainstream course, but taught by CEDU staff over one year instead of half a year. Adapted from *University of Cape Town Faculty of Commerce Handbook 2014*, p. 15 & p. 35, 2014, Cape Town: University of Cape Town.

From Table 7 it can be seen that the programmes also share similarities in that, although the students may be at different points in their programme, many courses are shared by the programmes. After second year, with the exception of Financial Reporting IIA and IIB, the CEDU students are only enrolled in mainstream courses.

The additional supports, or interventions, are added into the extended curriculum as the CEDU staff are of the opinion that in order for the CEDU students to succeed in higher education, they will need academic supports as well as social psychological supports (J. Pym, personal communication, April 2, 2014). This opinion is based on years of experience in working with the CEDU cohorts of students and empirical research. These interventions give the CEDU students an opportunity to develop both hard and soft attributes needed to succeed in higher education. Each CEDU intervention, which develops psychosocial graduate attributes, is listed and described in Table 8 below.

Table 8
CEDU Interventions

Intervention	Description
Additional year	Gives the CEDU students an opportunity to learn the curriculum over a longer period of time and gives the CEDU an opportunity to include additional courses and workshops aimed at improving graduate attributes.
Separate, smaller classes	CEDU courses and workshops are separate from mainstream courses, meaning that these classes have fewer students and thus enable more interaction with lecturers and other students.
Step Up Programme	Helps first year students make the transition into university life. It includes topics on goal setting and planning, time management, stress management and career planning, to mention but a few.
Career Discovery Programme	Teaches students career management skills which help to inform their future career choices.
Mentoring Programmes	Senior CEDU students are allocated to first year CEDU students and meet with them throughout their first year.
Counselling Services	The CEDU clinical psychologist makes initial assessments and then makes a recommendation or referral for first year CEDU students. Includes individual and group therapy sessions.
Leadership Development Programmes	The CEDU offers support, assistance and the development of skills to CEDU student leaders.
Lifeskills Workshops	Topics covered in the workshops include stress management, exam preparation and exam techniques for first year EDU students.

Both mainstream and CEDU students have access to student advisors, tutorial groups, tutors, mainstream lectures and mainstream lecturers which aid in educational development as well as the development of hard and soft graduate attributes. Thus, CEDU students are getting access to the same resources that mainstream students have access to, as well as the additional CEDU resources and interventions. It is thus expected that the abundance of resources available to CEDU students will aid in narrowing the gap between the assumed level of their academic ability and graduate attributes and the actual level of academic ability and graduate attributes.

An interview with Associate Professor June Pym (personal communication, April 2, 2014) revealed that the CEDU staff identified certain attributes that they expect their students to possess after one year in the CEDU extended programme. In the interview it was emphasised that the psychosocial graduate attributes are considered very important by the CEDU staff, especially self-efficacy, interaction and communication skills, leadership skills and teamwork skills. The identified graduate attributes are listed in Table 9 below.

Table 9
Graduate Attributes Expected of CEDU Students

Graduate Attributes		
Critical thinking and reasoning	Self-knowledge	Sense of humour*
Self-efficacy*	Innovativeness	Creativeness
Citizenship*	Flexibility*	Open mindedness*
Leadership skills*	Reflectiveness*	Problem-solving
Identifying, gathering and using information	Effectively using information and communication technology	Applying knowledge effectively
Teamwork*	Working independently*	Communication*
Professional practice*	Writing skills	Interpersonal skills*
Stress management*	Time management*	Public speaking*
Goal setting*	Interpret data and graphs	Reading text with understanding

Note. * Psychosocial graduate attribute

From the above discussion, it can be hypothesised that the interventions put in place through the CEDU extended programme develop psychosocial graduate attributes in their students. The following section of this review presents the conceptual framework for this study.

Conceptual Framework for this Study

This literature review has defined and discussed graduate attributes from the perspectives of higher education, employers and graduates. Furthermore, the review has discussed how the UCT CEDU is attempting to improve the academic abilities and graduate attributes from the

levels that CEDU students possess when entering the higher education system to levels which would increase the possibility of higher education success. Mainstream students enter the higher education system with the BPLs required for successful performance in a given degree. However, the required BPLs of students entering higher education in extended CEDU programmes are lower, suggesting that these students are not fully equipped for higher education success. This suggestion can also be drawn from CEDU staff's personal and educational experience with the CEDU students (J. Pym, personal communication, April 2, 2014). It is thus assumed that students entering the CEDU have lower academic abilities and graduate attributes.

This research investigates the extent to which participation in the CEDU programme is related to the presence of social psychological graduate attributes in CEDU students. Firstly, the choice of measuring only psychosocial graduate attributes was made as it is assumed that academic abilities of mainstream and CEDU students differ, due to the difference in their NBT BPLs. Secondly, because this study is not of a longitudinal nature and mainstream students are assumed to have the required graduate attribute levels for academic success, they are used as a comparison group. Using the information gathered from the CEDU staff, academic self-efficacy, interactive skills and continuous-learning orientation were selected as the psychosocial graduate attributes to be measured in this study. In this study it is acknowledged that the CEDU extended programme is not the only variable that can affect the development of psychosocial graduate attributes, thus academic motivation, matriculation performance and university performance have been recognised as covariates. It is also acknowledged that there may be other covariates, but these account for a fair amount. Further limitations will be dealt with in detail in the last chapter of this study. Ultimately, academic self-efficacy, interactive skills and continuous-learning orientation are desired by employers (Coetzee, 2012; Coll & Zegwaard, 2006), and the development of these graduate attributes aids CEDU students' academic success and consequently, their employment, creating a stronger, more diverse workforce in South Africa.

At present, little research has been done on psychosocial graduate attributes developed by the CEDU, and a need for additional research to be conducted thus exists. This research is guided by the following research question: *Do students in the CEDU, given their matriculation performance, university performance and perceived level of academic motivation, have the same perceived levels of psychosocial graduate attributes (academic self-efficacy, interactive*

skills and continuous-learning orientation) as students in the mainstream programme, after they have been in the CEDU programme for up to three years?

Figure 2 conceptually illustrates the study.

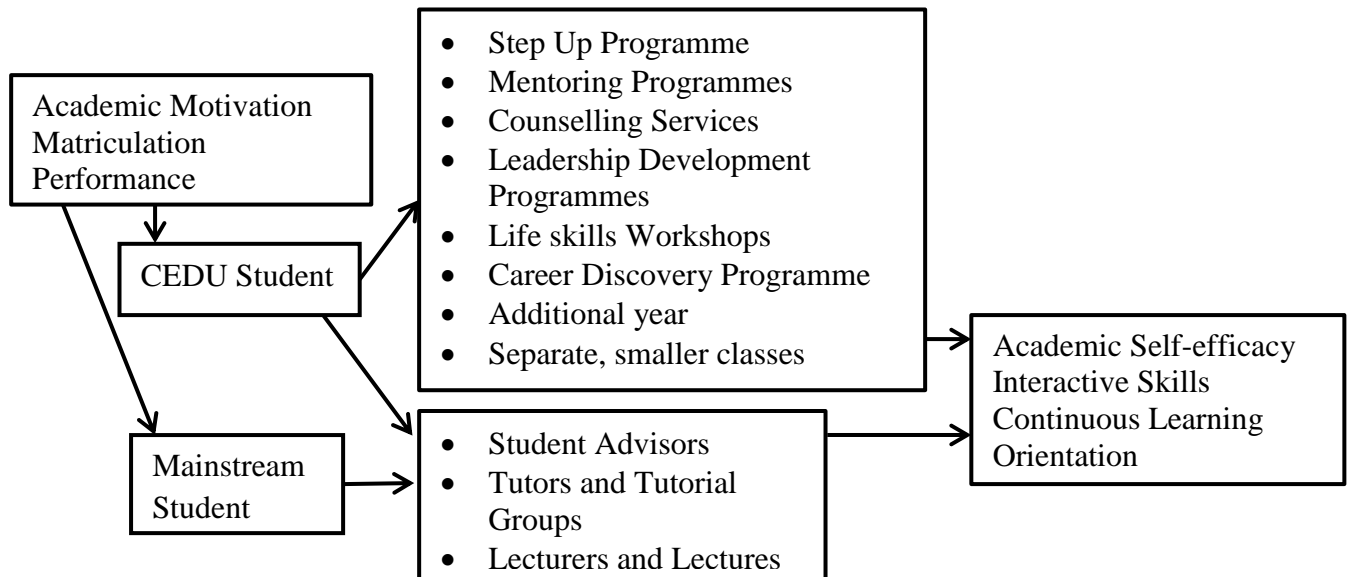


Figure 2. The Relationships between the Student, CEDU and Mainstream Interventions, Covariates and Graduate Attributes.

The following hypothesis will be assessed:

After participating in the CEDU extended programmes for up to three years, CEDU second and third year students have the same perceived levels of academic self-efficacy, interactive skills and continuous-learning orientation as second and third year students in mainstream programmes, after the possible effects of academic motivation and academic performance have been taken into account statistically.

Furthermore, the following sub-hypotheses will be assessed:

1. *Second and third year students in the CEDU extended programme have lower perceived levels of academic performance (matriculation and university performance) than second and third year students in the mainstream programme.*
2. *Correlations exist between second and third year CEDU students' level of participation in the CEDU and the variables in this study.*

CHAPTER 3: METHOD

This chapter describes the research process undertaken in this study; including the research design, sampling procedure, participants, instrumentation and analysis procedures.

Research Design

The study employed a descriptive, cross-sectional correlational research design. This design allowed for the identification of relationships between the various graduate attributes, covariates and the EDU or mainstream engagement. The hypotheses were tested using quantitative data collected through self-report questionnaires.

Sampling Procedure

This research utilised a non-probability, convenience sampling methodology for the sample selection. This sampling technique was used to select participants who are accessible and convenient to reach. The selection of these participants involved going to mainstream and CEDU lectures, which was discussed in the procedure section below.

Participants

The sample consisted of CEDU and mainstream students, where the CEDU sample consisted of students registered in the UCT CEDU in their second or third year of study and the mainstream sample consisted of UCT Commerce students, not registered in the CEDU, in their second or third year of study. Participants in their second or third year of study are the chosen sample as they will have completed their first year of study in which the majority of the CEDU development interventions take place. All the participants in this study are registered in the Commerce faculty.

The sample comprised of 279 participants, of which 104 were CEDU students and 175 were mainstream Commerce students. There are 972 second year students and 933 third year students in the Commerce faculty, however, only 322 of these students were approached and of these, 279 completed the questionnaire, resulting in an 86.6% response rate. The sample comprised predominantly of black (44%), female (65%), third year (51%), BCom (59%) students. The age of participants ranged from 18 to 24 years old, where the mean age was 20.26 ($SD = .877$). Three CEDU participants did not give their age. Table 10 illustrates the demographic sample statistics.

Table 10
Demographic Sample Statistics (n = 279)

Socio-demographic characteristic		CEDU	Non-CEDU
Male	White	0	37
	Black	15	13
	Indian	4	7
	Coloured	6	9
	Asian	0	3
	Other	0	1
	Prefer not to answer	0	4
	Total	25	74
Female	White	0	34
	Black	60	35
	Indian	2	9
	Coloured	17	12
	Asian	0	4
	Other	0	1
	Prefer not to answer	0	6
	Total	79	101
Year of study	2 nd year	62	74
	3 rd year	42	101
	Total	104	175
Programme	BCom	85	80
	BBusSci	19	95
	Total	104	175
Age	18 – 20	71	99
	21 – 23	30	73
	24 and older	0	3
	Did not answer	3	0
	Total	104	175

Instrumentation

The questionnaire consisted of 69 items (Appendix B), composed by using pre-existing scales with high Cronbach alphas in previous research. The independent variable in this study is identified as being a member of the CEDU or mainstream programmes, respectively, and an item in the questionnaire required participants to state their membership to either programme. The questionnaire was designed to measure the dependent variables by measuring the samples' perceived levels of academic self-efficacy, interactive skills and continuous-learning orientation using items from Coetzee's (2012) Graduate Skills and Attributes (GSA) Scale and Chemers, Hu and Garcia's (2001) Academic Self-Efficacy Scale (ASES). The

questionnaire also included scales relating to the covariates, academic motivation, university performance and matriculation performance. Vallerand, Blais, Brière and Pelletier's (1989) Academic Motivation Scale (AMA) was used to measure perceived levels academic motivation in mainstream and CEDU students and three items requesting the students' matriculation and university performance were included.

The questionnaire also gathered information on the samples' demographics, including the age, racial group, gender, year of study and the Commerce programme for which the participant is registered. An item requesting CEDU students' level of participation in the CEDU programme was also included. A description of each scale is provided below.

Graduate Attributes

Academic Self-Efficacy

Bandura (1986) cautioned researchers against attempting to predict academic outcomes using a student's generalised self-efficacy beliefs. It is suggested that self-efficacy should be assessed at the optimal level of specificity which corresponds to the context and domain of function being measured (Owen & Froman, 1988; Pajares, 1996; Pajares & Miller, 1994). Thus, instead of measuring generalised self-efficacy, academic self-efficacy was measured in mainstream and CEDU students using the Chemers et al. (2001) ASE Scale. This scale reflects specific skills that are pertinent to academic achievement. Sample items from this scale include, "I know how to study to perform well on tests" and "I am very capable of succeeding at the university". Participants were asked to rate their agreement with the statements in each item on a 7-point Likert-type scale (1 = very untrue and 7 = very true). The scale consisted of eight items and had an internal consistency of $\alpha = .81$ in the Chemers et al. (2001) study. A high score on this scale indicated a high perceived level of academic self-efficacy.

Interactive Skills and Continuous-Learning Orientation

Coetzee's (2012) GSAS measured perceived levels of interactive skills and continuous-learning orientation. The original GSAS measures eight attributes and consists of 64 items, however, through communication with the CEDU staff (J. Pym, personal communication, April 2, 2014) only two of these attributes were considered relevant to the present study. Thus, the adapted scale consists of 23 items. The interactive skills scale consists of 16 items and has an internal consistency of $\alpha = .96$ in the Coetzee (2012) study, and the continuous-

learning orientation scale consists of seven items and has an internal consistency of $\alpha = .89$ in the Coetzee (2012) study. The items were measured on a 6-point Likert-type scale, where participants expressed their level of agreement or disagreement (1 = strongly disagree and 6 = strongly agree). Samples from these scales include, “I find it easy to confront people’s problems to resolve conflicts” and “I make use of developmental or training opportunities to enhance my competencies, knowledge and skills”. A high score on these scales indicated a high perceived level of interactive skills and continuous learning orientation.

Covariates

Academic Motivation

Applying the same advice to motivation that Owen and Froman (1988), Pajares (1996) and Pajares and Miller (1994) suggest applying to self-efficacy, it was decided to assess motivation at the optimal level of specificity corresponding to this specific domain. Thus, instead of measuring generalised motivation, academic motivation was measured using the AMA scale in mainstream and CEDU participants. The scale consists of 28 items and has an internal consistency of $\alpha = .81$ in the Vallerand et al. (1989) study. Participants were asked to respond to the question, “Why do you go to university?” and rate their level of agreement with the statements in each item on a 7-point Likert-type Scale (1 = does not correspond at all and 7 = corresponds exactly). A sample item is “Because I think that a university education will help me better prepare for the career I have chosen”. Four items on this scale were reverse coded so that a high score on this scale indicated a high level of academic motivation.

University and Matriculation Performance

Participants were asked to select a percentage category in which their university GPA and matriculation Mathematics and English Language scores lay. These categories included 0%-25%, 26%-40%, 41%-50%, 51%-60%, 61%-70%, 71%-80%, 81%-90% and 91%-100%. The matriculation performance categories included the options, “did not do English Language as a subject” and “did Maths Lit”.

Limitations on these items exist. Firstly, the performance level score is self-reported and not obtained from the university database. This method was chosen as there was concern that the confidentiality of participants would be threatened if they provided either their Peoplesoft IDs or student numbers. Secondly, there was concern that if participants felt that their confidentiality was threatened, they may be hesitant to participate in the study, which would

decrease the potential sample size. Lastly, the self-report method was considered the best option practically, as obtaining student records from the UCT database would require pairing a participant’s questionnaire responses with their academic history, and then stripping the identity of the participant from this paired information. In order for responses to remain confidential, an external individual would need to perform this task, which could be costly as well as time consuming.

Procedure

This research was granted ethical clearance from the Commerce Faculty’s Ethics Research Committee and access to students by the UCT Department of Student Affairs. Thereafter, data was collected by distributing hard copy, paper and pencil questionnaires in various Commerce lectures. Two mainstream accounting lectures (ACC2012W) were visited which were attended by second and third year students, some of which belonged to the CEDU, and two CEDU accounting lectures (ACC2113W and ACC2114W) were visited which were also attended by second and third year students, all belonging to the CEDU (Table 11). The convenors of these lectures were contacted via email to request permission to distribute the questionnaire in the given lectures. These lectures were visited at times that suited the lecturer and researcher. The questionnaire was distributed at the beginning of the mainstream and one of the CEDU accounting lectures (ACC2113W), and at the end of the second CEDU lecture (ACC2114W). The questionnaire took approximately 15 minutes to complete and was accompanied by a cover letter, which outlined the purpose of the study, and addressed issues of confidentiality and anonymity (see Appendix A).

Table 11
Number of Respondents in Commerce Lectures Visited

Lecture		Number
ACC2012W first period	EDU	24
	Non-EDU	69
ACC2012W second period	EDU	37
	Non-EDU	106
ACC2113W	EDU	27
	Non-EDU	0
ACC2114W	EDU	16
	Non-EDU	0

Data Analysis

The data was captured in Microsoft Excel and imported to the Software Package for the Social Sciences (SPSS) for analysis. Descriptive analyses were used to determine various sample descriptive statistics, Cronbach's alpha was conducted to test scale internal-consistency reliability and Exploratory Factor Analysis using principal-axis factoring combined with direct oblimin rotation was used to determine the factorial validity of the scales.

A Multivariate Analysis of Covariance (MANCOVA) was performed to test the main hypothesis, combined with a Multivariate Analysis of Variance (MANOVA), univariate Analysis of Variance (ANOVA) and univariate Analysis of Covariance (ANCOVA). The MANOVA and univariate ANOVA analyses were included to investigate the extent of the effects of the covariates. Finally, an ANOVA was used to test the first sub-hypothesis and bivariate Pearson-product moment correlations were used to test the second sub-hypothesis.

CHAPTER 4: RESULTS

Factor Analysis and Reliability

Exploratory factor analysis (EFA) was used to determine the factorial validity of the interactive skills, continuous learning orientation, academic motivation and academic self-efficacy scales. Separate EFAs were run for the items of each of these scales. The Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of Sphericity were used to test the assumption that the data are suitable for factor analysis (Kaiser, 1970). If the KMO test yields a result greater than .60 and the Bartlett's Test is statistically significant ($p < .05$), the data are considered suitable. Table 12 illustrates the results of the KMO and Bartlett's tests, which indicate that factor analysis is suitable for all four scales.

Table 12

Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of Sphericity Results for the Various Scales

Scale	KMO	Bartlett's Test	df
Interactive Skills	.840	707.026**	55
Continuous Learning Orientation	.822	501.068**	21
Academic Self-Efficacy	.814	684.526**	28
Academic Motivation	.828	1993.540**	120

Note. ** $p < .001$.

Principal axis factoring with direct oblimin rotation was used in the factor analysis. Factors with eigenvalues greater than one (Kaiser, 1970) and factor loadings greater than .30 (Kline, 1986) were considered significant and were retained. If an item loaded onto two factors and the difference in factor loadings was smaller than .30, the item was dropped from the analysis as cross-loading was present (Tabachnik & Fidell, 2007).

The reliability of the various scales and subscales which emerged during the exploratory factor analysis was determined using the Cronbach Alpha technique. The scales were considered reliable if they had a Cronbach alpha value of .70 or higher (Nunnally, 1978).

Interactive Skills

Table 13 illustrates the three rounds of principal axis factoring with direct oblimin rotation that were run for the items of the interactive skills scale, including the eigenvalues, explained variance, items that loaded onto the various factors and the items that were removed.

Table 13

Factors Extracted for Each of the Three Rounds of Principal Axis Factoring for the Interactive Skills Scale

	Eigenvalue	Explained Variance (%)	Items that Loaded	Removed Items
Round 1				
Factor 1	4.514	28.212	14, 13, 12, 15, 16	6
Factor 2	1.030	6.436	1, 5, 2, 4	6
Factor 3	.918	5.738	9	6, 9
Factor 4	.476	2.973	8, 7, 3, 10, 11	6
Round 2				
Factor 1	4.013	28.665	8, 7, 3, 11, 10, 15	15*
Factor 2	.999	7.132	1, 5, 2, 4	
Factor 3	.535	3.823	14, 13, 12, 15, 16	15*
Round 3				
Factor 1	3.752	28.864	8, 7, 3, 11, 10	
Factor 2	.945	7.268	1, 5, 2, 4	
Factor 3	.543	4.174	14, 13, 12, 16	

Note. * Cross-loading

In round one, item 6 had factor loadings below .30 and was subsequently removed. Only one item (item 9) loaded significantly onto factor three, where at least three items are required for the factor to be considered adequate (Pallant, 2013). Item 9 was thus also removed after round one. In round two, item 15 loaded onto both factor one (with a factor loading of .327) and factor three (with a factor loading of .350) significantly, but the difference between these factor loadings was less than .30 and item 15 was thus removed from further analyses. The third round indicated that all remaining factors loaded significantly onto either factor one, two or three, and that the interactive skills scale is thus three-dimensional. The items that loaded onto a particular factor were examined and the three subscales were labelled leadership orientation, communication and teamwork competencies, respectively. Four new variables for these subscales were then created and mean scores for each subscale were calculated. The final factor loadings are shown in Table 14.

Table 14

Final Pattern Matrix of Interactive Skills

Item	Leadership Orientation	Communication	Teamwork Competencies
I find it easy to quickly gain respect from others.	.771		
I find it easy to persuade, convince or influence others.	.641		
I find it easy to confront people's problems to resolve conflicts.	.469		
I find it easy to make clear, concise presentations to others.	.398		
I usually make a favourable first impression.	.398		
I can communicate my viewpoints with clarity and fluency in English.		.828	
I take care to use appropriate vocabulary and grammar when communicating with others.		.623	
I find it easy to listen to and understand what others are saying.		.550	
I can use technology effectively to communicate with others.		.503	
I consult others and share my expertise and information			.676
I find it easy to get cooperation and support from others when working in a team			.675
I find it easy to communicate effectively with people from different cultures, backgrounds and authority levels			.588
I seek to progress to roles of increased responsibility and influence			.329

Leadership orientation, communication and total interactive skills had acceptable internal-consistency reliability, but the teamwork competencies scale was the only scale that showed an alpha coefficient below the cut off value of .70 decided upon (Table 15).

Table 15

Reliability of Interactive Skills Subscales

Scale	Number of items	Cronbach Alpha	Corrected item-total correlations
Leadership Orientation	5	.725	.438 < r < .546
Communication	4	.745	.490 < r < .628
Teamwork Competencies	4	.690	.493 < r < .572

Upon further examination it was found that if item 16 was removed, the Cronbach alpha coefficient would increase to .711, making the scale internally consistent. It was further noted that this item did not have face validity as it did not conform to the theme of "teamwork competencies" (Table 16); thus the removal of this item was considered necessary.

Table 16
Items of the Teamwork Competencies Subscale

Item	
12	I find it easy to communicate effectively with people from different cultures, backgrounds and authority levels.
13	I find it easy to get cooperation and support from others when working in a team.
14	I consult others and share my expertise and information.
16	I seek to progress to roles of increased responsibility and influence

Table 17 illustrates the correlations between the three factors, where communication and leadership orientation, communication and teamwork competencies, and leadership orientation and teamwork competencies are all significantly positively correlated.

Table 17
Correlations Between Interactive Skills Factors

Factor	Leadership orientation	Communication
Communication	.456**	1
Teamwork competencies	.496**	.359**

Note. ** $p < .001$.

Continuous Learning Orientation

Two factors emerged when principal-axis factoring combined with direct oblimin rotation was run on the continuous learning orientation scale. Items 1 and 2 loaded significantly onto factor two, and items 3 to 7 loaded significantly onto factor one (Table 18). Because only two items loaded onto factor two, it was decided to assume that the continuous learning orientation scale is unidimensional. A principal-axis factor analysis set to extract only one factor was then run, and all items loaded significantly onto the one factor (*eigenvalue*: 2.554, *explained variance*: 36.483%). A mean continuous learning orientation score using all seven items could thus be created for the scale.

The 7-item continuous learning orientation scale had an acceptable Cronbach alpha coefficient of .798 ($.477 < r < .590$), thus it was concluded that the scale had factorial validity and internal-consistency reliability.

Table 18

Factors Extracted in the Continuous Learning Orientation Scale Using Principal Axis Factoring

Item	Round 1		Round 2
	Factor 1	Factor 2	Factor 1
I follow up on goals, tasks and assignments to ensure successful completion.		.612	.534
I monitor my performance against deadlines and milestones.		.786	.534
I make sure that I keep myself up to date on technical knowledge and new developments in my field.	.439		.576
I am always on the lookout for ways to improve my knowledge and skills, and develop myself as a person	.612		.662
I know how to ask the right questions to get needed information and to properly size up a situation.	.808		.609
I accept and tackle demanding goals with enthusiasm.	.575		.615
I make use of developmental or training opportunities to enhance my competencies, knowledge and skills.	.645		.681

Academic Self-Efficacy

When principal-axis factoring with direct oblimin rotation was run on the items of the academic self-efficacy scale, two factors emerged. Items 4 to 8 loaded onto factor one significantly and items 1 and 2 loaded onto factor two significantly. Item 3 loaded onto both factors one and two, but the difference between the factor loadings was smaller than .30, so it was decided to remove the item (Table 19). This, however, meant that factor two only had two items, so it was assumed that the academic self-efficacy scale is unidimensional. A principal axis factor analysis set to extract only one factor was then run, and all items loaded onto the one factor significantly ($.516 < \text{factor loading} < .731$). A mean score for the scale could then be created from the 8 academic self-efficacy items.

Table 19

Factors Extracted in the Academic Self-Efficacy Scale Using Principal Axis Factoring

	Eigenvalue	Explained Variance (%)	Items that Loaded	Removed Items
Round 1				
Factor 1	3.100	38.750	3, 4, 5, 6, 7, 8	3*
Factor 2	.757	9.465	1, 2, 3	3*
Round 2				
Factor 1	2.587	36.953	4, 5, 6, 7, 8	15*
Factor 2	.756	10.801	1, 2	
Round 3				
Factor 1	3.000	37.504	All items	

Note. * Cross-loading

The 8-item academic self-efficacy scale had a relatively high Cronbach alpha coefficient of .821 ($.458 < r < .656$). The scale was thus considered to have both factorial validity and internal-consistency reliability.

Academic Motivation

Five factors emerged when principal-axis factor analysis with direct oblimin rotation was run on the academic motivation scale. Table 20 illustrates the results obtained from each of the rounds run. In round one, items 8, 13, 14, 16 and 23 were removed due to high cross-loadings, and item 24 was removed due to its factor loading being smaller than .30. In round two and three, a further four items were removed due to unacceptably high cross-loadings (items 6 and 20) and low factor loadings (items 10 and 17). A four-dimensional scale thus remained. The items that loaded onto each factor were examined and the four subscales that emerged were labelled internal fulfilment and personal accomplishment, purpose for being at university, money motive and desire for accomplishment, respectively. A mean score was then calculated for each of the new subscales.

Table 20

Factors Extracted for Each of the Five Rounds of Principal Axis Factoring for the Academic Motivation Scale

	Eigenvalue	Explained Variance (%)	Items that Loaded	Removed Items
Round 1				
Factor 1	7.821	27.934	11, 18, 9, 25, 2, 4, 23, 16, 13	13*, 16*, 23*, 24
Factor 2	3.163	11.297	26, 19, 5, 12, 3	24
Factor 3	2.342	8.364	22, 15, 1, 8, 14	14*, 8*, 24
Factor 4	1.192	4.257	28, 21, 7, 27, 20, 14, 13, 6	13*, 14*, 24
Factor 5	.589	2.103	23, 16, 8, 17, 10	8*, 16*, 23*, 24
Round 2				
Factor 1	5.674	25.792	11, 18, 9, 2, 25, 4, 6, 20	20*, 6*, 17
Factor 2	2.953	13.423	26, 19, 5, 12, 3	17
Factor 3	1.831	8.321	22, 15, 1, 10	17
Factor 4	1.029	8.678	28, 21, 7, 27, 20, 6	20*, 6*, 17
Round 3				
Factor 1	4.529	23.835	11, 18, 9, 2, 25, 4	10
Factor 2	2.909	15.313	26, 19, 5, 12, 3	10
Factor 3	1.823	9.596	22, 15, 1	10
Factor 4	1.006	5.296	28, 21, 7, 27	10
Round 4				
Factor 1	4.446	24.702	11, 18, 9, 2, 25, 4	
Factor 2	2.810	15.613	26, 19, 5, 12, 3	
Factor 3	1.821	10.116	22, 15, 1	
Factor 4	.950	5.278	28, 21, 7, 27	

* *Cross-loading*

Table 21 illustrates the internal-consistency reliability of the academic motivation scales. All four scales had acceptable Cronbach alpha coefficients and were thus considered to have factorial validity and internal-consistency reliability.

Table 21
Reliability of Academic Motivation Sub-Scales

Scale	Number of items	Cronbach Alpha	Corrected item-total correlations
Internal Fulfilment and Personal Accomplishment	6	.856	.547 < r < .730
Purpose for being at University	5	.847	.420 < r < .785
Money Motive	3	.748	.505 < r < .666
Desire for Accomplishment	4	.821	.549 < r < .763

The final factor loadings are shown in Table 22.

Table 22

Final Pattern Matrix of Academic Motivation

Item	Internal fulfilment and personal accomplishment	Purpose for being at university	Money motive	Desire for accomplishment
For the pleasure that I experience when I read interesting authors.	.836			
For the pleasure that I experience when I feel completely absorbed by what certain authors have written.	.733			
For the pleasure I experience when I discover new things never seen before.	.722			
Because I experience pleasure and satisfaction while learning new things.	.633			
For the "high" feeling that I experience while reading about various interesting subjects.	.615			
For the intense feelings I experience when I am communicating my own ideas to others.	.552			
I don't know; I can't understand what I am doing in school.		.869		
I can't see why I go to university and frankly, I couldn't care less.		.792		
Honestly, I don't know; I really feel that I am wasting my time in school.		.791		
I once had good reasons for going to university; however, now I wonder whether I should continue.		.717		
Because I think that a university education will help me better prepare for the career I have chosen.		.479		
In order to have a better salary later on.			.787	
Because I want to have "the good life" later on.			.742	
Because with only a high-school degree I would not find a high-paying job later on.			.595	
Because I want to show myself that I can succeed in my studies.				-.914
To show myself that I am an intelligent person.				-.680
To prove to myself that I am capable of completing my university degree.				-.644
Because university allows me to experience a personal satisfaction in my quest for excellence in my studies.				-.558

Table 23 illustrates the correlations between the four factors, where money motive and internal fulfilment and personal accomplishment, money motive and purpose for being at university, desire for accomplishment and internal fulfilment and personal accomplishment, and desire for accomplishment and money motive are all significantly positively correlated.

Table 23
Correlations Between Academic Motivation Factors

Factor	Internal fulfilment and personal accomplishment	Purpose for being at university	Money motive
Purpose for being at university	-.068	1	
Money motive	.117*	.323**	1
Desire for accomplishment	.481**	-.041	.302**

Note. * $p < .05$; ** $p < .001$.

Descriptive Statistics

The descriptive statistics of mainstream and CEDU students for all scales are provided in Table 24. As mentioned above, the scales used in this study are either of a one-dimensional, three-dimensional or four-dimensional nature. Therefore mean scores of each dimension of the scales were computed.

Table 24
Descriptive Statistics for Mainstream and CEDU Students

Scale	N			Mean			Standard Deviation			Minimum			Maximum		
	Total	Non-CEDU	CEDU	CEDU and Non-CEDU	Non-CEDU	CEDU	CEDU and Non-CEDU	Non-CEDU	CEDU	CEDU and Non-CEDU	Non-CEDU	CEDU	CEDU and Non-CEDU	Non-CEDU	CEDU
Leadership Orientation	279	175	104	5.596	4.624	4.547	.626	.616	.644	2.60	2.60	3.20	6.00	6.00	6.00
Communication	279	175	104	5.210	5.256	5.132	.612	.588	.647	2.50	2.50	3.25	6.00	6.00	6.00
Teamwork Competencies	279	175	104	4.701	4.712	4.683	.717	.696	.754	2.00	2.00	3.00	6.00	6.00	6.00
Continuous Learning Orientation	279	175	104	4.626	4.662	4.566	.656	.652	.661	2.00	2.00	3.14	6.00	6.00	5.86
Academic Self-Efficacy	279	175	104	5.222	5.320	5.055	.791	.786	.775	2.25	2.88	2.25	7.00	7.00	6.63
Internal Fulfilment and Personal Accomplishment	279	175	104	4.492	4.439	4.582	1.231	1.193	1.293	1.00	1.50	1.00	7.00	7.00	7.00
Purpose for being at University	279	175	104	6.243	6.164	6.217	1.108	1.306	1.267	2.20	2.80	2.20	7.00	7.00	7.00
Money Motive	279	175	104	5.937	4.834	5.031	.985	1.468	1.467	1.00	1.00	2.50	7.00	7.00	7.00
Desire for Accomplishment	279	175	104	4.908	5.874	5.563	1.468	1.182	1.526	1.00	1.00	1.00	7.00	7.00	7.00
English Matric Result	277	173	104	6.190	6.440	5.770	.893	.858	.791	4.00	4.00	4.00	9.00	9.00	8.00
Mathematics Matric Result	277	173	104	6.620	6.970	6.040	1.009	.924	.869	4.00	4.00	4.00	8.00	8.00	8.00
Grade Point Average	277	173	104	5.130	5.330	4.810	.909	.909	.813	3.00	3.00	3.00	8.00	8.00	7.00

Results Relating to Hypotheses

A MANCOVA was conducted to determine whether differences in continuous learning orientation, academic self-efficacy, leadership orientation, communication and teamwork competencies exist between CEDU and mainstream students, taking into account their internal fulfilment and personal accomplishment, purpose for being at university, money motive, desire for accomplishment, matriculation performance and university performance (GPA). Before the MANCOVA could be run, certain assumptions needed to be tested.

Firstly, reasonable correlation between the dependent variables and between the covariates and dependent variables needed to be present. All the dependent variables were significantly positively related, but many non-significant correlations were found between the dependent variables and covariates (Table 27). However, when the communalities in the academic motivation exploratory factor analysis were examined, they were all above .30, suggesting that these items shared common variance (Nguyen & Belgrave, 2012).

Secondly, the covariates needed to be independent of each other. An ANOVA revealed that internal fulfilment and personal accomplishment, purpose for being at university, money motive and desire for accomplishment did not have significant differences between CEDU and mainstream students ($p > .05$), however, matric English, matric Mathematics and Grade Point Average were significantly different and thus not independent ($p < .001$). However, when the third assumption for homogeneity was tested, relationships between the dependent variables and interaction terms were examined, and no significant differences were found, suggesting that the covariates were independent of one another.

Fourthly, the dependent variables used in the MANCOVA needed to be normally distributed. The standardised residuals, unstandardised predicted values and Cook's distance diagnostics were analysed using standardised residual histograms, scatterplots of standardised residuals versus predicted values and scatterplots of standardised residuals versus Cook's distance diagnostics. Continuous learning orientation, academic self-efficacy, leadership orientation and teamwork competencies were all considered normal when their histograms and scatterplots were examined, however, communication was not. When the scatterplot for standardised residuals versus Cook's distance diagnostics was examined for communication, it could be seen that participant 257, an influential observation, was having an undue influence on the normality of the variable. This participant's mean scores for continuous learning orientation, academic self-efficacy, leadership orientation, communication and

teamwork competencies were all much lower than the sample mean scores, and when this participant's responses were examined, it seemed as though the participant was responding to items in a random manner. This participant was thus removed from further analyses. Thereafter, the communication standardised residuals versus Cook's distance diagnostics scatterplot was examined again, and no influential observations were observed, thus communication was considered adequately normal.

Because the above assumptions were satisfied, the MANCOVA could be run. A MANOVA was run before the MANCOVA, which showed that there were no significant differences in perceived levels of continuous learning orientation, academic self-efficacy, leadership orientation and teamwork competencies between CEDU and mainstream students (Wilks' $\lambda = .964$, $F_{1,267} = 2.038$, $p = .036$). The follow up univariate post hoc tests employing a Bonferonni correction (overall alpha of .05) revealed that differences exist in perceived levels of academic self-efficacy between mainstream and CEDU students (Table 25). Huberty and Morris (1989) suggest that performing univariate ANOVA and ANCOVA analyses after MANOVA and MANCOVA analyses is seldom appropriate, however, multiple univariate ANOVA and ANCOVA tests are traditionally used to investigate the nature of the multivariate effect found. Tonidandel and LeBreton (2013) state that prevalent organisational researchers continue to use this method as their dominant follow-up procedure (see Ferrin, Kim, Cooper & Dirks, 2007; Heilman & Okimono, 2007; Vignovic & Thompson, 2010; Walker, Field, Giles, Armenakis & Bernerth, 2009). It was thus decided to follow the traditional method and perform the univariate post hoc tests employing a Bonferonni correction (with an overall alpha of .05) after the multivariate analyses.

The multivariate outcome was much stronger after the application of the covariates and it appears that the covariates reduced some of the error variance. The univariate post hoc tests employing a Bonferonni correction (overall alpha of .05) showed that after the effect of the covariates had been taken into account, there were no significant differences in continuous learning orientation, academic self-efficacy, leadership orientation, communication and teamwork competencies between CEDU and mainstream students (Wilks' $\lambda = .985$, $F_{1,274} = .780$, $p = .565$). This non-significant difference was confirmed across the dependent variables (Table 25).

Table 25

Univariate Post-Hoc Tests Employing Bonferonni Corrections (Overall Alpha of .05)

Dependent Variable	ANOVA			ANCOVA		
	df	F	Sig.	Total df	F	Sig.
Continuous Learning Orientation	1,276	1.435	.232	1,267	.367	.545
Academic Self-Efficacy	1,276	8.153	.005*	1,267	1.619	.204
Leadership Orientation	1,276	1.219	.271	1,267	.109	.742
Communication	1,276	3.647	.057	1,267	1.627	.203
Teamwork Competencies	1,276	.162	.688	1,267	.302	.583

Note. * $p < .05$

Results Relating to Sub-Hypotheses

An ANOVA was used to test whether CEDU students and mainstream students differ in their levels of the matric English, matric Mathematics and Grade Point Average. Table 26 shows the results of this test. Mainstream matric English was significantly higher ($M = 6.440$, $SD = .858$) than CEDU matric English ($M = 5.77$, $SD = .791$), mainstream matric Mathematics was significantly higher ($M = 6.970$, $SD = .924$) than CEDU matric Mathematics ($M = 6.040$, $SD = .869$), and the mainstream GPA was significantly higher ($M = 5.33$, $SD = .909$) than the CEDU GPA ($M = 4.81$, $SD = .813$).

Table 26

ANOVA Showing Differences Between Mainstream and CEDU Students

Scale	F	Total df
Matric English	41.974**	276
Matric Mathematics	69.143**	276
Grade Point Average	23.117**	276

Note. * $p < .05$, ** $p < .001$

Table 27 shows correlations that were run between all the dependent variables and covariates, as well as year and age. The most interesting result shown in Table 27 is from the correlations done using only CEDU participants, to measure correlations between participation in the CEDU and the other variables. It was found that participation in the CEDU was significantly negatively correlated to matric English, meaning that the lower the participant's matric English proficiency, the higher their participation in the CEDU.

Table 27
Correlations Between Variables

	Leadership Orientation	Communication	Teamwork Competencies	Continuous Learning Orientation	Academic Self-efficacy	Internal fulfilment and personal accomplishment	Purpose for being at university	Money Motive	Desire for Accomplishment	English Matric Result	Mathematics Matric Result
Leadership Orientation	1										
Communication	.456**	1									
Teamwork Competencies	.496**	.359**	1								
Continuous Learning Orientation	.536**	.397**	.524**	1							
Academic Self-Efficacy	.436**	.411**	.366**	.639**	1						
Internal Fulfilment and Personal Accomplishment	.123*	.038	.133*	.357**	.263**	1					
Purpose for being at University	.063	.292**	.185**	.234**	.236**	-.068	1				
Money Motive	.082	.105	.135*	.128*	.081	.117*	.323**	1			
Desire for Accomplishment	-.050	-.023	-.013	.137*	.098	.481**	-.041	.302**	1		
English Matric Result	.103	.151*	.109	.089	.158**	.018	.083	.038	-.037	1	
Mathematics Matric Result	.051	.028	.069	.127*	.211**	.012	-.043	-.036	.028	.377**	1
University GPA	.014	.052	.030	.114	.316**	.052	.147*	-.045	.019	.353**	.407**
CEDU students' participation in the CEDU	-.038	-.007	-.173	.097	.092	.190	-.074	-.101	.027	-.201*	-.005

Note. * $p < .05$, ** $p < .001$

CHAPTER 5: DISCUSSION

This study aimed to investigate the extent to which participation in the CEDU extended programme is related to the presence of social psychological graduate attributes in CEDU students. The CEDU extended programme was created to address the gap between the level of academic ability and graduate attributes that students need to possess in order to succeed in higher education, and the actual level of academic ability and graduate attributes that CEDU students possess when entering the higher education system. In other words, the CEDU attempts to develop the CEDU students' academic ability and graduate attributes through the use of an extended curriculum with various interventions, so that they are able to succeed in higher education, and in turn, have increased levels of employability. These interventions include an additional year of study, separate, smaller classes, the Career Discovery programme, Step Up programme, mentoring programmes, counselling services, leadership development programmes and life skills workshops (CEDU, 2014).

In this chapter, the psychometric quality of the scales used in this study will be discussed. Additionally, there will be a discussion about whether second and third year CEDU students have adequate perceived levels of the graduate attributes required for academic success and a high level of employability. This chapter includes a discussion on the main findings of this study, which provide empirical evidence to support the main hypothesis. The findings suggest that after participating in the CEDU extended programmes for up to three years, CEDU second and third year students have similar perceived levels of academic self-efficacy, interactive skills and continuous-learning orientation as second and third year students in mainstream programmes (after the possible effects of academic motivation and academic performance have been taken into account statistically). This study also found evidence that students in the CEDU reported to have lower levels of academic performance (matriculation and university performance) than students in the mainstream programme and that correlations exist between the reported level of participation in the CEDU and the variables in this study. This study focused predominantly on the CEDU extended programme and the development of psychosocial graduate attributes in CEDU students, where mainstream students were used mostly as a comparison group. Thus, it must be noted that the primary focus of the discussion below regards CEDU students. The chapter is concluded by discussing the limitations of this research, implications for stakeholders and recommendations for future research.

Psychometric Quality of Scales

Little research has been done on graduate attributes in South Africa, and there are thus limited measures available for the assessment of graduate attributes in a South African context. Given that only one of the scales used in this study was developed in South Africa (Coetzee, 2012), it is necessary to discuss the psychometric quality of the scales, to ensure that these scales have proved to be reliable measures in the South African context of this study.

In Coetzee's (2012) study, the 16-item interactive skills scale was univariate, however, after principal axis factor analysis with direct oblimin rotation was performed in the current study, three factors emerged. The three new subscales had internal consistency coefficients ranging from .711 to .745, whereas the original univariate scale had an internal consistency reliability coefficient of .960. The 7-item continuous learning orientation scale was found to have an internal consistency coefficient of $\alpha = .798$ in the current study, whereas Coetzee (2012) found that the subscale had an internal consistency reliability coefficient of .890. Although the Cronbach alpha coefficients on these scales are lower than the original Cronbach alpha coefficients, these scales are considered internally-consistently reliable as they have coefficients greater than .70 (Nunnally, 1978). The lower Cronbach alpha coefficients could be a result of the smaller sample size ($n = 279$ compared to $n = 1102$) (Kececioglu, 2002). Coetzee's (2012) GSAS scale has not been used in many empirical studies in the past, yet the adequate internal consistency reliability found in the two subscales used in this research suggests that these are solid measures of interactive skills and continuous learning orientation in South African students.

The 8-item Chemers et al. (2001) ASE scale, developed in California, had an internal consistency of $\alpha = .821$ in this study, compared to the internal consistency coefficient found in the original study of $\alpha = .810$. With regard to academic motivation, Vallerand et al. (1989) found that the 28-item scale was univariate with an internally consistent reliability coefficient of $\alpha = .81$. However, after principal axis factor analysis with direct oblimin rotation was performed in the current study, four factors emerged. These subscales had good internal consistency reliability, with Cronbach alpha coefficients ranging from .748 to .856.

The acceptable internal consistency reliability of the scales suggests that these scales are acceptable measures of psychosocial graduate attributes in a South African context. This is an encouraging result as it means that these scales can be used in future South African research

with confidence. Findings in this study must therefore be due to actual similarities in psychosocial graduate attributes between mainstream and CEDU students, and not due to any problems in the scales.

Generic Graduate Attributes in CEDU and Mainstream Students

Graduates with generic attributes stand out, and are more recognisable to employers (Lam, 1994; Quek, 2005; Quek & Soon, 1999), thus the development of generic graduate attributes in CEDU and mainstream students is important. Many of the graduate attributes that the CEDU staff attempt to develop through the extended programme are considered important by employers, and thus increase CEDU students' employability and their ability to perform in the workplace (Barrie, 2004). These attributes include communication skills, self-efficacy, interpersonal skills, leadership skills, teamwork skills, oral and written skills, problem-solving skills, time-management skills, professionalism, creativity, presentation skills and lifelong learning (Ball, 1989; Barrie, 2004; Boud & Middleton, 2003; Brown et al., 1986; Cheah & Yu, 1996; Coetzee, 2012; Coll & Zegwaard, 2006; Day, 1988; Hackett et al., 1992; Jacobsen, 1993; Kanapathy, 2001; Lam, 1994; Lee, 2000; Lee, Quek & Chew, 2001; Lent et al., 1986; Mason, 1992; J. Pym, personal communication, April 2, 2014; Rainsbury et al., 2002; Quek, 2005; Schroder, 1989; Sear, 1994).

The measured psychosocial attributes were selected for two reasons. Firstly, because of the importance placed on the development of these attributes by the CEDU staff (J. Pym, personal communication, April 2, 2014) and secondly, because of the finding that an individual needs to possess self-efficacy in addition to behavioural skills and cognitive skills in order to perform successfully in the workplace (Coll & Zegwaard, 2006). The selected attributes thus included academic self-efficacy, continuous learning orientation, leadership orientation, communication skills and teamwork competencies. The perceived levels of these attributes were all above the various scales' respective midpoints for both mainstream and CEDU students, which suggests that both mainstream and CEDU students have high perceived levels of the skills, personal attributes and values that are required for successful performance (Bath et al., 2004; Boam & Sparrow, 1992; Page, Wilson & Kolb, 1993). It is more expected that mainstream students possess these psychosocial graduate attributes, given that they have less disadvantaged backgrounds than CEDU students.

Using the reasons for the selection of the measured attributes as a guide, the following section of this chapter will discuss the perceived levels of CEDU students' academic self-efficacy,

soft skills and hard skills (Table 24), and whether these perceived levels are sufficient for both academic success and employability. Furthermore, how these attributes are developed through the CEDU programme will be discussed. This demonstrates the positive outcomes of the CEDU extended programme that other higher education institutions could possibly learn from.

Academic Self-efficacy

Academic self-efficacy is described as an individual's expectation of success when completing specific academic tasks (Lent et al, 1986). CEDU students had perceived levels of academic self-efficacy (5.055) well above the midpoint of the ASE scale (3.5), however, CEDU students' perceived levels were slightly lower than mainstream students (5.320), suggesting that they may not feel as confident in their academic endeavours as mainstream students do.

CEDU student's lower expectation of success when completing academic tasks may be attributed to various different factors. Firstly, these students may not feel as confident in their academic abilities as they as in many cases the quality of their secondary schooling system has not adequately prepared them for the level of performance expected of them. Secondly, CEDU students are often the first in their family to attend university (Pym & Paxton, 2013), and may have few role models that have a higher education. CEDU students thus come into the system with less contextual knowledge which compromises their confidence. This confidence needs to be developed through their experiences on campus and in the CEDU programme, as their backgrounds have often not allowed for the development of this needed confidence. This could result in these students' finding it hard to believe that succeeding at university is possible, given that no one in their family has previously done so. Lastly, the majority of CEDU students do not speak English as their home language, yet study in English, writing English tests, assignments and examinations (Pym & Paxton, 2013). Although CEDU students in this study reported relatively good matric English averages of between 61% and 70%, it is understandable if these students did not feel confident in aspects of academic self-efficacy such as researching, writing and taking notes in English.

Even though CEDU students' perceived levels of academic self-efficacy were lower than mainstream, their reported levels were still high compared to the scale midpoint. Given that we expect academic self-efficacy to be low in CEDU students when they enter the university, the high perceived level may be in part a result of the CEDU psychosocial interventions.

According to June Pym (personal communication, April 2, 2014), all of the CEDU interventions are expected to develop self-efficacy, and thus academic self-efficacy. These interventions include the extended curriculum, Career Discovery programme, Step Up programme, mentoring programmes, counselling services, leadership development programmes and life skills workshops.

Behavioural Skills/Soft Attributes

CEDU students were found to have relatively high levels of various behavioural skills and soft attributes, including continuous learning orientation, leadership orientation, communication skills, teamwork competencies and academic motivation.

Continuous Learning Orientation

Education is a lifelong process (Cummings, 1998; Martin et al., 2005) and the high perceived level of continuous learning orientation in CEDU students (4.566) suggests that they have developed the ability to monitor their performance, ensure successful completion of goals and tasks and are eager to improve their knowledge and accept and tackle demanding goals. Continuous learning orientation is one of Coetzee's (2012) eight core attributes that determine a student's "graduateness". A high perceived level of continuous learning orientation thus increases an individual's level of "graduateness", which in turn increases employability (Coetzee, 2012). Increased employability suggests that mainstream and CEDU students with high perceived levels of continuous learning orientation may be attractive to employers.

The Career Discovery programme focuses on career planning and aims to raise students' self-awareness and enhance their ability to make informed, effective career decisions. This programme may contribute to CEDU students' desire to improve their knowledge and accept and tackle demanding goals as they are more aware of the careers available to them and what it will take to be successful in them. Through this process, CEDU students may develop the ability to reflect on their learning, which they could use in many other contexts. Barrie (2004) describes lifelong learning as one of the overarching attributes that is an important outcome of higher education, thus the finding that CEDU students perceive good levels of this attribute suggests that the graduate attribute development systems in place in the CEDU may be proving to be successful. Furthermore, CEDU students are expected to have low levels of continuous learning orientation when entering the university, thus higher reported levels of

this attribute is an encouraging finding as it suggests that the CEDU programme is not only helping CEDU students succeed in higher education, but making them more employable too.

Interactive Skills

Reported levels of leadership orientation in CEDU students were low compared to other attributes (4.547), but were still above the midpoint of the 6-point Likert-type scale, suggesting that the lower scores are not necessarily a weakness. Leadership skills are considered important by students (Crebert et al., 2004), but many of the students in the CEDU have not had much experience as leaders. This could be due to there being limited opportunities to take on formal leadership roles while CEDU students try to get up to speed on their curricula. Given the above, it would be expected that CEDU students' perceived leadership skills levels are low, however, the finding that CEDU students have perceived levels of leadership skills above the scale midpoint suggests that the support, assistance and skill development offered through the leadership development programme may be proving to be successful.

Findings in this study suggest that CEDU students are as confident in communicating in English as mainstream students are. High perceived levels of communication in CEDU students (5.132) is an encouraging finding as the majority of the students in the CEDU do not speak English as a home language (Pym & Kapp, 2013). Research suggests that communication increases employability (Ball, 1989; Boud & Middleton, 2003; Cheah & Yu, 1996; Day, 1988; Jacobsen, 1993; Kanapathy, 2001; Lam, 1994; Lee, 2000; Lee, Quek & Chew, 2001; Mason, 1992; Schroder, 1989; Sear, 1994), and is an important outcome of higher education (Barrie, 2004; De la Harpe & David, 2012), and is considered important by graduates (Hackett et al., 1985; Rainsbury et al., 2002). Thus, high perceived levels of communication are important for both academic and workplace success. CEDU staff consider communication to be one of the most important graduate attributes that should be developed in CEDU students (J. Pym, personal communication, April 2, 2014). Communication is developed through smaller classes and more time allocated to teaching various courses, thus CEDU students have the opportunity to ask questions and interact with both the lecturers and other students. Interventions such as life skills workshops and the Step Up, leadership and mentoring programmes require constant interaction between students and between staff and students. Communication skills may also be developed through referrals to the CEDU's Writing Centre, where grammar, style and vocabulary are focused on.

CEDU students reported good levels of teamwork competencies (4.683), suggesting that these students have the ability to consult others, cooperate and gain support in a team and communicate effectively with people from different backgrounds. Teamwork is considered an important graduate attribute by employers (Ball, 1989; Boud & Middleton, 2003; Cheah & Yu, 1996; Day, 1988; Jacobsen, 1993; Kanapathy, 2001; Lam, 1994; Lee, 2000; Lee, Quek & Chew, 2001; Mason, 1992; Schroder, 1989; Sear, 1994), thus the finding that both mainstream and CEDU students reported good levels of teamwork competencies may increase CEDU students' employability. Teamwork competencies may be developed through group projects assigned to CEDU students in their separate CEDU extended programme and mainstream classes, as well as through the leadership development programmes, as research has found that teamwork aids in the development of leadership skills (Crebert et al., 2004).

Academic Motivation

CEDU students perceived lower levels of internal fulfilment and personal accomplishment than most of the other measured psychosocial graduate attributes (4.582). Furthermore, CEDU students perceived the highest level in purpose for being at university (6.217). This indicates that CEDU students are motivated to be at university and know why they are at university. CEDU students may report high levels of this attribute as they often come from poor socio-economic backgrounds and thus see the obtaining of a university degree as a way out of those circumstances for them and their families. The thought of a better socio-economic future may be a large motivator for CEDU students to succeed at university. Furthermore, CEDU students may feel a responsibility to succeed given the opportunities afforded to them, relative to others in their communities. At the same time, a high perceived level in purpose for being at university shows that CEDU students are aware that employers expect graduates to have developed generic attributes before recruitment, so that employer needs are met in terms of how employees should perform (Haber, 1993; Raymond et al., 1993; Weisz, 1999). CEDU students report high levels of desire for accomplishment (5.563), which proposes that these students have the desire to show to themselves that they are intelligent, can succeed and are capable of completing a university degree. CEDU students may report high levels of this attribute as they are first-generation university students, and may thus feel that they need to prove to themselves and their communities that succeeding at university is possible for someone with their historically disadvantaged background. Achieving this academic success would suggest that there is hope of a more resourceful future for someone with this background in post-Apartheid South Africa.

CEDU students report to attend university for the possibility of future financial gains, as they report relatively high levels of the money motive (5.031). These students are often from rural and/or township, often impoverished, working-class class backgrounds in which they are used to coping with little to no resources (Pym & Paxton, 2013). The finding that these students attend university in order to find a high paying job and have better salary later in life is thus not surprising - it would make sense that these students are eager to better their economic, geographic and social circumstances. Furthermore, most of the CEDU students pursue degrees in Commerce in order to increase the potential of securing employment and improving their current circumstances (Pym & Paxton, 2013).

Cognitive Skills

This study did not measure the cognitive ability of mainstream or CEDU students, however, self-report items in the questionnaire asked the participants to select their matriculation performance in English and mathematics, and their current university GPA. CEDU students reported to have averages of between 61% and 70% for matric English and 71% and 80% for matric maths. These average self-reported scores are higher than expected, given that students accepted into the CEDU extended programme have BPLs of Lower Intermediate for the AL (38% to 52%), QL (38% to 53%) and mathematics (35% to 51%) NBTs (UCT, 2013). CEDU students also reported to have averages of between 51% and 60% for their current GPAs. One of the best measures of cognitive ability is a student's prior marks obtained at university, even though this measure may also reflect past study behaviours (Plant, Ericsson, Hill & Asberg, 2005).

Because CEDU students' GPAs are lower, they have lower levels of hard skills or technical ability and knowledge. However, Spencer and Spencer (1993) postulate that if an individual has the right personal attributes, but lacks technical skills, they should have the capacity to acquire the necessary technical skills and knowledge required for acceptable performance on the given job through training and experience. Furthermore, Norwood & Henneberry (2006) found that employers consider awards earned and a graduate's Grade Point Average (GPA) less important than features such as their character, dedication to their career goals and work experience, suggesting that CEDU students' lower GPAs do not propose a real impediment to their level of employability.

The above discussion suggests that CEDU students report the adequate levels of self-efficacy, behavioural skills and cognitive skills that Coll and Zegwaard (2006) suggest are required for

increased employability and successful performance in the workplace. This suggests that the CEDU extended programme is helping CEDU students achieve academic success and increase their employability.

The following section of this chapter will discuss the findings related to the main hypothesis.

Findings relating to the main hypothesis

The main finding of this study suggests that after CEDU students have been in the CEDU programme for up to three years, there are no significant differences in mainstream and CEDU students' perceived levels of academic self-efficacy, continuous learning orientation and interactive skills when academic motivation, matriculation performance and university performance are added as covariates. This section will discuss the effect that the covariates had on the dependent variables and furthermore, will discuss what the results of the MANCOVA suggest about the CEDU extended programme interventions.

Effects of the Covariates

The covariates were added as academic self-efficacy, continuous learning orientation and interactive skills were hypothesised to be affected by academic motivation, matriculation performance and university performance. The only statistically significant difference found when inspecting the ANOVA was in perceived levels of academic self-efficacy between mainstream and CEDU students. When comparing the results of the ANOVA and ANCOVA, one could deduce that academic motivation, university performance and matriculation performance may have affected the perceived level of academic self-efficacy, continuous learning orientation and interactive skills. The inclusion of the covariates in the ANCOVA decreased the significance of the differences between mainstream and CEDU students in academic self-efficacy, continuous learning orientation, leadership orientation and communication by between $p = .146$ and $p = .471$. The addition of the covariates affected the difference in perceived academic self-efficacy the greatest, resulting in the observed significant difference in perceived levels of academic self-efficacy becoming non-significant (from $p = .005$ to $p = .204$). Furthermore, the effect of the addition of the covariates is demonstrated in the increased significance in one of the factors of interactive skills, teamwork competencies, from $p = .688$ to $p = .583$. These findings propose that the inclusion of the covariates was a good decision, as recognising the major players that affect perceived levels of academic self-efficacy, continuous learning orientation and interactive skills produced a more accurate result.

CEDU Extended Programme

Because this study is not quasi-experimental in nature and thus lacks initial baseline data, a causal claim stating that the CEDU interventions caused the similarity in graduate attributes cannot be made. However, the MANCOVA results (Wilks' $\lambda = .985$, $F_{1,274} = .780$, $p = .565$) indicate that the CEDU extended programme may be increasing the levels of psychosocial graduate attributes in students who belong to redress categories and who are attaining scores of between 35% and 53% on their NBTs. This finding can be drawn from the results as it is expected that CEDU students report lower levels of academic ability and graduate attributes than mainstream students. CEDU students do not speak English as their home language, are subject to many economic and financial constraints, and come from impoverished rural and/or township environments in which secondary schooling systems have a low quality of education (MacGregor, 2009; Pym & Paxton, 2013; Scott, 2009; Warren, 2002; Yeld, 2007). Moreover, results in this study indicate that CEDU students who attained between 35% and 53% on their NBTs have similar reported levels of academic self-efficacy, continuous learning orientation, leadership orientation, communication and teamwork competencies as mainstream students attaining between 51% and 100% on their NBTs (when the covariates are taken into account). These results indicate that the CEDU interventions may thus be proving to be successful. Table 28 shows the CEDU interventions, and which of the measured psychosocial attributes the various interventions are possibly improving.

Table 28

Psychosocial Attributes Developed by Various CEDU Interventions

Intervention	Psychosocial Attributes
Additional year	Academic self-efficacy
Separate, smaller classes	Academic self-efficacy, communication, teamwork competencies
Step Up Programme	Academic self-efficacy, communication
Career Discovery Programme	Academic self-efficacy, continuous learning orientation
Mentoring Programmes	Academic self-efficacy, communication
Counselling Services	Academic self-efficacy
Leadership Development Programmes	Academic self-efficacy, leadership skills, communication, teamwork competencies
Life skills Workshops	Academic self-efficacy, communication

The following section of the chapter discusses the findings related to the sub-hypotheses tested in this study.

Findings relating to the sub-hypotheses

Empirical evidence was found to support the two sub-hypotheses tested in this study, confirming that students in the CEDU perceive lower levels of academic performance (matriculation and university performance) than students in the mainstream programme, and that correlations exist between the reported level of participation in the CEDU and the variables in this study.

Mainstream and CEDU Students' Academic Performance

The average mainstream student in this study reported to have averages of 71% to 80% for matric English, 81% to 90% for matric maths and 61% to 70% for their current GPA. CEDU students, on the other hand, reported to have averages of between 61% to 70% for matric English, 71% to 80% for matric maths and 51% to 60% for their current GPA. Findings from the ANOVA performed support the first sub-hypothesis, and suggest that mainstream students have significantly higher matric and university performance than CEDU students. From the results it can be deduced that CEDU students have averages approximately 10% lower than mainstream students in all three spheres of academic performance. This could in some instances be expected as CEDU students are challenged by language barriers, socio-economic factors and more often than not, have attended schools which are in need of drastic improvement and do not provide a high standard of education, nor fully cover the traditional curricula (Pym & Paxton, 2013; Scott, 2009). The findings relating to this sub-hypothesis indicate that the perceived levels of academic performance may be accurate, as the difference in matric performance of mainstream and CEDU students reflects the actual faculty data and suggests that the participants have answered honestly, given the self-report nature of the items in the questionnaire.

Level of Participation in the CEDU

The second sub-hypothesis is somewhat supported by the findings in this study. Participation in CEDU is significantly negatively correlated to matric English scores, but not correlated to any other variables in the study. This finding indicates that students who are less confident in their English abilities participate more in the CEDU programme and interventions. The CEDU extended programme was designed to help students who are challenged by language barriers achieve academic success. Thus, this result reflects the reality and suggests that the CEDU extended programme may be proving to be successful in engaging the intended CEDU students and improving their perceived levels of graduate attributes.

Limitations in this study exist. These will be discussed below, as well as the implications for various stakeholders and the recommendations for future research.

Limitations of the Study

Various limitations in this study need to be acknowledged. This study employed a cross-sectional design and compared mainstream and CEDU students without using any baseline data. Thus, no causal relationships between the CEDU interventions and the high reported levels of graduate attributes in CEDU students when compared to mainstream students could be found. The study only showed the levels at which the students were currently at, taking into account what we understand about the two groups of students when they begin at university and that they had already been at the university for one to two years, and had thus experienced the graduate attribute development interventions.

This study is limited to second and third year mainstream and CEDU students in Commerce faculty at the University of Cape Town. This means that findings cannot be generalised to EDUs and student groups in other institutions and faculties. Limiting the study to second and third years was necessary considering the majority of CEDU interventions take place in their first year, however, it meant that the sample would be small.

This study also employed self-report measures, which could have been influenced by social desirability bias (Arnold & Feldman, 1981). This is especially applicable to the matriculation and university performance items, where, for ethical reasons, self-report measures have been chosen over obtaining student records. As discussed in the method, there was concern that the confidentiality of participants would be threatened if they provided either their Peoplesoft IDs or student numbers, and that if participants felt that their confidentiality was threatened, they may be hesitant to participate in the study, decreasing the potential sample size. The self-report method was also considered the best option practically, as obtaining student records from the UCT database could be costly as well as time consuming.

Convenience sampling techniques were employed, which prevented a representative sample from being obtained. The sample consisted of BCom and BBusSci students registered only in the accounting stream. This was mainly because the majority the 2012 and 2013 CEDU cohorts are registered in these streams and by going to these lectures the majority of these CEDU cohorts could be sampled. Additionally, this research includes the possibility of

mono-method bias, as only one data collection method in the form of a questionnaire was used.

Implications for Higher Education, Employers and Students

The development of academic ability and graduate attributes in students who belong to redress categories is essential for a diverse and capable South African labour force, which possesses high levels of employability (Moleke, 2005). Research suggests that a student who has not been taught well at school will have difficulty succeeding at university (Vincent and Idahosa, 2014). This presents a problem, given that the legacy of Apartheid has left many South Africans with a dysfunctional secondary schooling system, students in many cases inadequately prepared for higher education (Dryden-Peterson & Sieborger, 2006; Pym & Kapp, 2011; Scott, 2009; Vincent & Idahosa, 2014). Creating a diverse and capable labour force in South Africa thus has implications for all involved stakeholders, mainly including higher education, employers and students.

In order to continue the constant improvements in redress category enrolment and academic success, staff in higher education institutions in South Africa need to continue to embed the development of graduate attributes into their curricula (Bath et al., 2004), and furthermore, continue to develop and invest in integrated ADP approaches. This will address racial and ethnic inequity issues in universities, and focus on specialised forms of instructional design, teaching and tutoring for students who have not been adequately prepared for higher education through secondary schooling. Through this process, students in redress categories will develop increased levels of hard and soft graduate attributes, which will enable them to succeed academically (Warren, 2002), and furthermore, increase their level of employability.

The literature review conducted in the first chapter suggests that it is well known that there are differences in the graduate attributes considered important by higher education and employers. If the staff at a higher education institution rate a certain set of graduate attributes as important, they will channel resources into developing those graduate attributes in their students, often regardless of employer or student opinions (Coll & Zegwaard, 2006). Thus, it is imperative that employers and higher education staff liaise in order to determine which graduate attributes are considered most important by employers and which attributes graduates coming into the workplace usually lack, so that these attributes can be developed through various interventions in the institutions.

Recommendation for Future Research

The main recommendation for future research would be to use a quasi-experimental or longitudinal design to assess the relationship between the CEDU interventions and the CEDU students' psychosocial graduate attributes. In this design, CEDU and mainstream students would complete the questionnaire before they begin their first year, at the end of their first year and possibly at the end of their second, third, fourth and fifth years. A mainstream sample given the same questionnaire at the same times could be used as a control group, to compare the relationship found over time. This research could also employ additional different methods of data collection such as focus groups and interviews in order to obtain both qualitative and quantitative data.

Future research could include all of the Education Development Units across faculties. Not only will this increase sample size, but increase the generalizability of the results and assess the EDU development interventions as a whole. A more purposive sampling technique could also be employed in which a more representative sample is obtained, thus reducing possible existing bias.

Actual student records instead of self-report measures for a more accurate representation of matriculation and university performance could be used. This, however, could be a limitation if students feel that their confidentiality could be breached, but if successful could decrease potential social desirability and possibly lead to more accurate findings.

Conclusion

Given that there is an increasingly widening gap between graduates' skills and capabilities and the needs and demands of the work environment (Andrews & Higson, 2008), the role of higher education in the development of graduate attributes has been increased in value by government, industry and higher education themselves (Bath, Smith, Stein & Swann, 2004). Unlike other countries, however, the function of higher education institutions in South Africa is twofold: to develop academic ability and generic and specific graduate attributes so that historically disadvantaged students are able to succeed in higher education (Holtzhausen, 2012), and furthermore to increase employability and prepare students for work (Rainsbury et al., 2002).

As discussed throughout this study, many students belonging to redress categories are challenged by language barriers, socio-economic factors and by poor standards of secondary

school learning, which proves to be inadequate in preparing these students for higher education (Scott, 2009; Warren, 2002; Yeld, 2007). Often these challenges are not recognised, resulting in a gap between the assumed level of academic ability and graduate attributes that these students possess, and the actual level of academic ability and graduate attributes that these students possess, given their circumstances. Understanding this gap is crucial, as it will allow one to understand why the development of ADPs is necessary in South Africa, and furthermore what these programmes need to accomplish – increased academic success and employability through the development of graduate attributes.

The findings in this study suggest that there are no significant differences in the perceived levels of academic self-efficacy, continuous learning orientation and interactive skills between mainstream and CEDU students who have been in the CEDU extended programme for up to three years, when academic performance and academic motivation are taken into account. This suggests that, given the understanding that CEDU students enter the higher education system with lower levels of academic ability and graduate attributes than mainstream students, the CEDU extended programme may play a major role in the similarity of the perceived levels of the attributes between mainstream and CEDU students. This may be due to the additional academic and social psychological supports, or interventions, that are added into the CEDU extended curriculum. These include an additional year of learning, separate, smaller classes, the Career Discovery programme, Step Up programme, mentoring programmes, counselling services, leadership development programmes and life skills workshops (CEDU, 2014).

The findings in this study suggest that the interventions put in place by the CEDU develop academic ability and graduate attributes in CEDU students so that they are able to succeed in higher education, and furthermore so that they are employable when leaving the university. The development of employable graduates belonging to redress categories leads to a diverse South African labour force, ultimately moving away from the legacy of Apartheid.

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APPENDICES

Appendix A



Dear Student

The attached questionnaire consisting of 69 items asks a variety of questions about graduate attributes. Demographic details are requested at the end of the questionnaire, please remember that this will be kept confidential, but are important for the success of this dissertation. Previous research has demonstrated that the demographic variables are essential variables to consider, when analysing results.

Through your participation we hope to understand the phenomena of graduate attributes in the local context. The results of the survey will be useful in the field of organisational psychology and we hope to share the results by sharing them with UCT and also disseminate the findings in a higher education journal. It should take you about 20 minutes to complete.

We do not know of any risks to you if you decide to participate in this survey. We guarantee that your responses will remain confidential and will not be identified with you. You are free to withdraw from the study at any time. The Commerce Ethics Committee at the University of Cape Town has approved this study and the questionnaire.

By completing and submitting this questionnaire, you are acknowledging that your participation in this study has been of your own free will.

If you have any questions or concerns about completing the questionnaire or about being in this study, contact Bridgette Kew, tel. 0825690036.

Thank you for your participation.

Appendix B

QUESTIONNAIRE

Using the scale below, indicate to what extent you agree with each of the following statements.

Strongly disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6

1. I can communicate my viewpoints with clarity and fluency in English.	1	2	3	4	5	6
2. I find it easy to listen to and understand what others are saying.	1	2	3	4	5	6
3. I find it easy to confront people's problems to resolve conflicts.	1	2	3	4	5	6
4. I can use technology effectively to communicate with others.	1	2	3	4	5	6
5. I take care to use appropriate vocabulary and grammar when communicating with others.	1	2	3	4	5	6
6. I can gain support from others for recommendations and ideas.	1	2	3	4	5	6
7. I find it easy to persuade, convince or influence others.	1	2	3	4	5	6
8. I find it easy to quickly gain respect from others.	1	2	3	4	5	6
9. I usually show respect for the views and contributions of other team members.	1	2	3	4	5	6
10. I usually make a favourable first impression.	1	2	3	4	5	6
11. I find it easy to make clear, concise presentations to others.	1	2	3	4	5	6
12. I find it easy to communicate effectively with people from different cultures, backgrounds and authority levels.	1	2	3	4	5	6
13. I find it easy to get cooperation and support from others when working in a team.	1	2	3	4	5	6
14. I consult others and share my expertise and information.	1	2	3	4	5	6
15. I am able to build wide and effective networks of contacts to achieve my goals.	1	2	3	4	5	6
16. I seek to progress to roles of increased responsibility and influence.	1	2	3	4	5	6
17. I follow up on goals, tasks and assignments to ensure successful completion.	1	2	3	4	5	6
18. I monitor my performance against deadlines and milestones.	1	2	3	4	5	6
19. I make sure that I keep myself up to date on technical knowledge and new developments in my field.	1	2	3	4	5	6
20. I am always on the lookout for ways to improve my knowledge and skills, and develop myself as a person	1	2	3	4	5	6
21. I know how to ask the right questions to get needed information and to properly size up a situation.	1	2	3	4	5	6
22. I accept and tackle demanding goals with enthusiasm.	1	2	3	4	5	6
23. I make use of developmental or training opportunities to enhance my competencies, knowledge and skills.	1	2	3	4	5	6

Using the scale below, indicate to what extent you agree with each of the following statements.

Very Untrue	Untrue	Somewhat Untrue	Neutral	Somewhat True	True	Very True
1	2	3	4	5	6	7

24. I know how to schedule my time to accomplish my tasks.	1	2	3	4	5	6	7
25. I know how to take notes.	1	2	3	4	5	6	7
26. I know how to study to perform well on tests.	1	2	3	4	5	6	7
27. I am good at research and writing papers.	1	2	3	4	5	6	7
28. I am a very good student.	1	2	3	4	5	6	7
29. I usually do very well in school and at academic tasks.	1	2	3	4	5	6	7
30. I find my university academic work interesting and absorbing	1	2	3	4	5	6	7
31. I am very capable of succeeding at the university.	1	2	3	4	5	6	7

WHY DO YOU GO TO UNIVERSITY?

Using the scale below, indicate to what extent you correspond to each of the following statements.

Does not correspond at all	Corresponds a little		Corresponds moderately	Corresponds a lot		Corresponds exactly
1	2	3	4	5	6	7

32. Because with only a high-school degree I would not find a high-paying job later on.	1	2	3	4	5	6	7
33. Because I experience pleasure and satisfaction while learning new things.	1	2	3	4	5	6	7
34. Because I think that a university education will help me better prepare for the career I have chosen.	1	2	3	4	5	6	7
35. For the intense feelings I experience when I am communicating my own ideas to others.	1	2	3	4	5	6	7
36. Honestly, I don't know; I really feel that I am wasting my time in school.	1	2	3	4	5	6	7
37. For the pleasure I experience while surpassing myself in my studies.	1	2	3	4	5	6	7
38. To prove to myself that I am capable of completing my university degree.	1	2	3	4	5	6	7
39. In order to obtain a more prestigious job later on.	1	2	3	4	5	6	7
40. For the pleasure I experience when I discover new things never seen before.	1	2	3	4	5	6	7
41. Because eventually it will enable me to enter the job market in a field that I like.	1	2	3	4	5	6	7
42. For the pleasure that I experience when I read interesting authors.	1	2	3	4	5	6	7
43. I once had good reasons for going to university; however, now I wonder whether I should continue.	1	2	3	4	5	6	7
44. For the pleasure that I experience while I am surpassing myself in one of my personal accomplishments.	1	2	3	4	5	6	7
45. Because of the fact that when I succeed in university I feel important.	1	2	3	4	5	6	7
46. Because I want to have "the good life" later on.	1	2	3	4	5	6	7

47. For the pleasure that I experience in broadening my knowledge about subjects which appeal to me.	1	2	3	4	5	6	7
48. Because this will help me make a better choice regarding my career orientation.	1	2	3	4	5	6	7
49. For the pleasure that I experience when I feel completely absorbed by what certain authors have written.	1	2	3	4	5	6	7
50. I can't see why I go to university and frankly, I couldn't care less.	1	2	3	4	5	6	7
51. For the satisfaction I feel when I am in the process of accomplishing difficult academic activities.	1	2	3	4	5	6	7
52. To show myself that I am an intelligent person.	1	2	3	4	5	6	7
53. In order to have a better salary later on.	1	2	3	4	5	6	7
54. Because my studies allow me to continue to learn about many things that interest me.	1	2	3	4	5	6	7
55. Because I believe that a few additional years of education will improve my competence as a worker.	1	2	3	4	5	6	7
56. For the "high" feeling that I experience while reading about various interesting subjects.	1	2	3	4	5	6	7
57. I don't know; I can't understand what I am doing in school.	1	2	3	4	5	6	7
58. Because university allows me to experience a personal satisfaction in my quest for excellence in my studies.	1	2	3	4	5	6	7
59. Because I want to show myself that I can succeed in my studies.	1	2	3	4	5	6	7

Using the options below, please select an answer:

60. My matric (grade 12) English Language average was between:	0%-25%	26%-40%	41%-50%	51%-60%	61%-70%	71%-80%	81%-90%	91%-100%	Did not do English as a subject
61. My matric (grade 12) Mathematics average was between:	0%-25%	26%-40%	41%-50%	51%-60%	61%-70%	71%-80%	81%-90%	91%-100%	Did Maths Lit as a subject
62. My university grade point average (GPA) is between:	0%-25%	26%-40%	41%-50%	51%-60%	61%-70%	71%-80%	81%-90%	91%-100%	

Please provide an answer for the following:

63. Are you a registered Education Development Unit (EDU) student?	Yes	No					
64. If yes, rate your level of participation in the EDU	Percentage						
65. Gender	Male	Female					
66. Year of study	2 nd	3 rd					
67. Age							
68. Commerce programme	BCom	BBusSci					
69. Race	White	Black	Indian	Coloured	Asian	Other	Prefer not to answer