

Exceptional academic achievement in South African higher education

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Supervisor: Professor Renuka Vithal

Declaration

I, Nicholas Munro, declare that

1. The research reported in this thesis, except where otherwise indicated, is my original research.
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3. This thesis does not contain other persons' data, pictures, graphs or other information, unless specifically acknowledged as being sourced from other persons.
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Date

Dedication

This thesis is dedicated to my father, a historical exemplar of exceptionality, and Anton, an evolving expression of exceptional love.

Acknowledgements

A PhD is produced through the candidate's active engagement in socially meaningful activity. I acknowledge the following who participated in this activity with me:

- My supervisor, Professor Renuka Vithal, who saw in me what I was not always able to see in myself. Her definitive critique and encouragement have been instrumental in this thesis.
- The co-supervisors on the higher education cohort, and in particular Michael, Goretti, and Frances, who always provided thoughtful and constructive critique on my writing.
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- The School of Education PhD cohort model of supervision – an example of a current activity system that is informed by several educational, political, and cultural-historical activity systems. The cohort model provided personal and tangible evidence of the validity of activity theory and activity systems in action. As a result of my experience in the cohort, I will always aspire to position myself in activity systems that encourage contradiction and collective struggle and support.
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- My research participants, who were an inspiration to work with. I relied on many of their emotions and strategies to bring the PhD to completion.

I also acknowledge my partner, Anton, for tolerating my physical and emotional absence, and for giving me the space to engage in the intense and socially meaningful activity required for the production of this thesis. The support and encouragement of my mother, Pam and Jack, and Judy are also acknowledged. This study was funded through a University of KwaZulu-Natal Competitive Teaching and Learning Research Grant.

Abstract

This thesis reports on a study which explored the equity of representation within the phenomenon of exceptional academic achievement in South African higher education. The significance of the thesis rests with its unique position among a prevailing higher education discourse of academic underachievement and high levels of failure. In this way, this study offered a complementary strengths-based perspective within the South African higher education domain. Firstly, the study was located in a historical-contextual framework, and secondly grounded within three conceptual frameworks. These included a critical quantitative stance, a social cognitive framework, and a sociocultural framework. The latter framework specifically incorporated cultural-historical activity theory and was offered as an integrative stance from which the phenomenon of exceptional academic achievement in South African higher education could be most effectively conceptualised. In response to the historical-contextual and conceptual frameworks, the study first sought to identify the profile of exceptional academic achievement in South African undergraduate students. Given the critical nature of the study, the second and third research questions sought to explore those students who did not fit the profile of exceptional academic achievement.

In resonance with the historical-contextual and conceptual frameworks and the research questions, a critical dialectical pluralist stance was assumed, and a critical dialectical mixed methodology was employed. This methodology involved two interlinked phases, and these were embedded within a case study of a racially transformed and internationally ranked South African higher education institution. In the first phase of the study, a logistic regression model for exceptional academic achievement in South African higher education was developed. The model was developed from a sample of 20 120 graduates from the University of KwaZulu-Natal, who completed undergraduate degrees between the years 2006 and 2010. The model identified that even when controlling for financial aid, matriculation score, and matriculation English symbol, white female students were 16 times more likely to excel when compared to African female students, and seven times more likely to excel when compared to African male students. In the second phase of the study, 18 academically exceptional African female and African male

undergraduate students were purposively invited to participate in the study. Their first task involved an interpretation of the logistic regression model, this interpretation being garnered through the students' participation in three focus group discussions. Of the original 18 students, eight then embarked on an auto-photographical data production process and participated in photo-elicitation interviews with the researcher.

Using the theorised activity system within cultural-historical activity theory as a heuristic device, three systems of academic activity were constructed and analysed. The constructions generated evolving and historical activity systems of exceptional academic achievement, and a third institutional system of academic activity. The analyses highlighted the regulatory role of collective emotions in exceptional academic achievement, and in particular, the importance of the resolution of an injustice-based anger and edu-emotional struggle, with a vision for the future and the development of a positive edu-emotional valence. The three activity systems offer a conceptual perspective of exceptional academic achievement in higher education that is persistently unjust, however prospectively hopeful. The current and historical dynamics involved in the academic trajectories of undergraduate African students who excel are offered as a way in which a transformative and socio-political object of exceptional academic achievement could be attained. This object is constituted by an iterative trajectory within a fragile and homologous space between enabling and constraining environments. Importantly, these environments are positioned as having the potential to yield outcomes of both exceptional academic achievement and academic underachievement in higher education.

Author note

When approaching the study underpinning this thesis, the researcher adopted what was recently crystallised as a critical dialectical pluralist stance (Onwuegbuzie & Frels, 2013). Although evidence of researcher reflexivity (Lather, 1986) is integrated within the entire thesis, a brief author note is provided upfront to orientate the reader to the researcher's professional (and personal) background and positionality before and during the study.

At the time this study was being conceived, I had been working as a student counsellor in the South African higher education environment for ten years. This involved employment at the Durban University of Technology and the University of KwaZulu-Natal. My professional education was in the applied domain of counselling psychology, and much of my post-training work in the higher education context involved facilitating the holistic development of students. This development involved the design and implementation of both individual and group-based interventions, many of which had a particular focus on enhancing psychological functioning, career readiness, and academic achievement in students. Over time, however, I became troubled by what I interpreted as a pervasive higher education discourse that seemed to focus on what was “wrong” with students, especially in terms of their academic functioning. Although my day-to-day experiences with students undoubtedly affirmed an articulation gap between school and higher education (as well as levels of academic underpreparedness for higher education), I failed to see the value of deficit discourses that emphasised students' weaknesses over their strengths and potentialities. Recently, counselling psychology as a field of practice in South Africa was delineated as being distinctly strengths-oriented, and underpinned by values of social justice, human rights, and community development (Young, 2013). In retrospect I realise now that, at the time of commencing this study, the aforementioned orientation and values were inherently what drove my pursuit of the study, as well as my day-to-day professional and personal activity.

Although I am still working at the University of KwaZulu-Natal, the nature of my employment in higher education has changed since commencing the study. Whereas I continued in my role as a student counsellor during the first year of the study, I had the opportunity from the second year

to move into a teaching and research role. Even though my role has technically changed from student support to teaching and research, the current study speaks to the notion of South African higher education as a whole. This thesis is therefore not necessarily about how students in higher education could be supported to excel academically, nor is it about what lecturers could do to enhance students' academic achievement. Rather, this thesis is about a philosophical stance that is projected to facilitate social change and transformation through exceptional academic achievement in higher education.

I am a white man, and was raised in an English speaking home. In the South African context (and globally I argue), these were and still are aspects of identity that unfairly empower the individual who holds them. These aspects of identity have enabled me the opportunity to struggle towards an exceptional academic achievement trajectory in higher education. However, I have come to appreciate that this struggle is meaningless unless conceptualised as part of a larger collective struggle where all individuals have equal opportunities within a struggle-to-exceptionality trajectory.

Abbreviations

AERA	American Educational Research Association
ANOVA	analysis of variance
APA	American Psychological Association
CANSA	the Cancer Association of South Africa
CART	classification and regression tree
CHAT	cultural-historical activity theory
CHE	Council on Higher Education
DBE	Department of Basic Education
DMI	Division of Management Information
DPs	duly performed certificates
DOE	Department of Education
DOHET	Department of Higher Education and Training
FGD	focus group discussion
HELTASA	Higher Education Learning and Teaching Association of Southern Africa
KZN	KwaZulu-Natal
LASSI	Learning and Study Strategies Inventory
MCQ	multiple-choice questionnaire
NSFAS	National Student Financial Aid Scheme
OECD	Organisation for Economic Co-operation and Development
PEI	photo-elicitation interview
SRL	self-regulated learning
UJ	University of Johannesburg
UKZN	University of KwaZulu-Natal
USA	United States of America
UTLO	University Teaching and Learning Office
VIF	variance inflation factor

Spelling of specific terms/names

Artefact	Unless quoting directly from a specific text, the British spelling of artefact has been used.
Ilyenkov	In various texts, Evald V. Ilyenkov's surname is spelled variably as Ilyenkov and Il'enkov. The former is used in this thesis.
Leontiev	In various texts, Aleksei N. Leontiev's surname is spelled variably as Leontiev, Leontyev, and Leont'ev. The former is used in this thesis.

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Part 1. (Exceptional) Academic Achievement: Literature, and Historical-Contextual and Conceptual Frameworks

Chapter 1. (Dis)orientation and Historical-Contextual Framework

Chapter 2. From a Dominant Social Cognitive Framework to an Emerging Sociocultural Framework

Chapter 1. (Dis)orientation and Historical-Contextual Framework

1.1 Introduction and Overview of Chapter

The South African higher education environment is well oriented to high levels of student academic underachievement and subsequent low levels of retention and throughput. In addition, given the unique socio-economic, political, and historical context, African¹ students are disproportionately represented at these levels of academic underachievement, and are at a greater risk for failure and drop-out (Council on Higher Education [CHE], 2013). It is therefore unusual for a South African higher education study to disorient itself from the pervasive problem of academic underachievement, selecting rather to foreground the phenomenon of exceptional academic achievement. The reason behind this disorientation is made explicit throughout this first chapter, however rests with the assumption that “without serious, sustained attention to the goals of excellence in academic achievement and consequences tied to not reaching these goals, no real improvement is likely to happen in the education of those on the bottom of the achievement gap” (Rivera, 2005, p. 83). Therefore, although this was a study about exceptional academic achievement in undergraduate South African higher education, the study acknowledged a dialectical relationship between exceptional academic achievement and academic underachievement.² In addition, it is assumed that contextually relevant notions of equity and transformation are incorporated within this dialectical relationship. In this way, the current study was grounded in the contemporary South African higher education transformation agenda which affords concurrent priority to notions of equity and development (Wolpe, Badat, & Barends, 1993). It is also suggested that the current equity and development priorities

¹ Racial discourses in contemporary South African society continue to refer to four main race categories. These include African, coloured, Indian, and white. Although it is acknowledged that the use of racial categories may serve to entrench their existence, they continue to have currency for purposes of redress in resources and in law.

² A dialectical relationship between academic underachievement and exceptional academic achievement is proposed in light of the fact that one cannot be referred to without invoking the other. Notions of dialecticism and dialectical relationships are developed further in Chapter 2, while Chapter 10 presents a synthesis and reorientation from a dialectical stance.

incorporate notions of excellence, or in the context of this study, exceptional academic achievement.

Chapter 1 comprises four sections. Firstly, a historical-contextual framework is developed and used to highlight a contemporary problem of academic underachievement in South African higher education.³ Relevant literature is reviewed within this framework, and a pervasive focus on the problem of academic underachievement is problematised, thereby disorientating and disrupting a deficit discourse that seems to dominate current academic achievement debates. Secondly, a reformulated “problem” pertaining to the phenomenon of exceptional academic achievement in South African higher education is presented and operationalised for this study. Thirdly, the objectives and research questions for the study are briefly introduced, and fourthly, Chapter 1 is concluded with an overview of the structure of the thesis.

1.2 Historical-Contextual Framework

The unique historical and contextual factors influencing physical access to, academic achievement within, and graduation from higher education are an essential starting point when considering debates around academic achievement in South Africa. The recognition of these historical-contextual factors is resonant with a socially and culturally situated understanding of learning and academic achievement, and places an emphasis on the social and historical circumstances surrounding learning efforts and academic achievement outcomes (Kozulin, Gindis, Ageyev, & Miller, 2003). This kind of recognition is suggested to facilitate a broader understanding of the current status of academic achievement debates in South African higher education, as well as to provide a foundation for theorising about future directions in the field. With this in mind, a historical-contextual framework was developed for this study and is graphically represented in Figure 1-1. The framework was informed by the CHE’s review of

³ In South Africa, the term “higher education” usually refers to all post-school qualifications offered on the Higher Education Qualifications Sub-Framework (Department of Higher Education and Training [DOHET], 2012). This would include programmes offered across three institutional types, namely traditional universities (mostly degree programmes), comprehensive universities (degrees and diploma programmes), and universities of technology (mostly diploma programmes) (CHE, 2009). In this thesis, however, the term higher education mostly refers to undergraduate degree offerings at traditional South African universities.

three main themes pertaining to successful student participation in South African higher education (CHE, 2010), as well as dominant historical features of South African (educational) history. Two components are incorporated within the historical-contextual framework, the first including a timeline of three themes, and the second pertaining to a set of intersecting variables⁴ positioned over the timeline. Integrated within these two components are quantitative representations of academic (under)achievement in the South African higher education sector. The three themes are reflected in text-boxes on a timeline (in Figure 1-1), and have been identified as “gaining physical access to higher education”, “educational disadvantage and facilitating epistemological access”, and “improving retention and throughput”. These three themes are briefly considered before an account of the intersecting variables of race, gender, socio-economic status, previous educational achievement, and language in relation to academic achievement is provided.

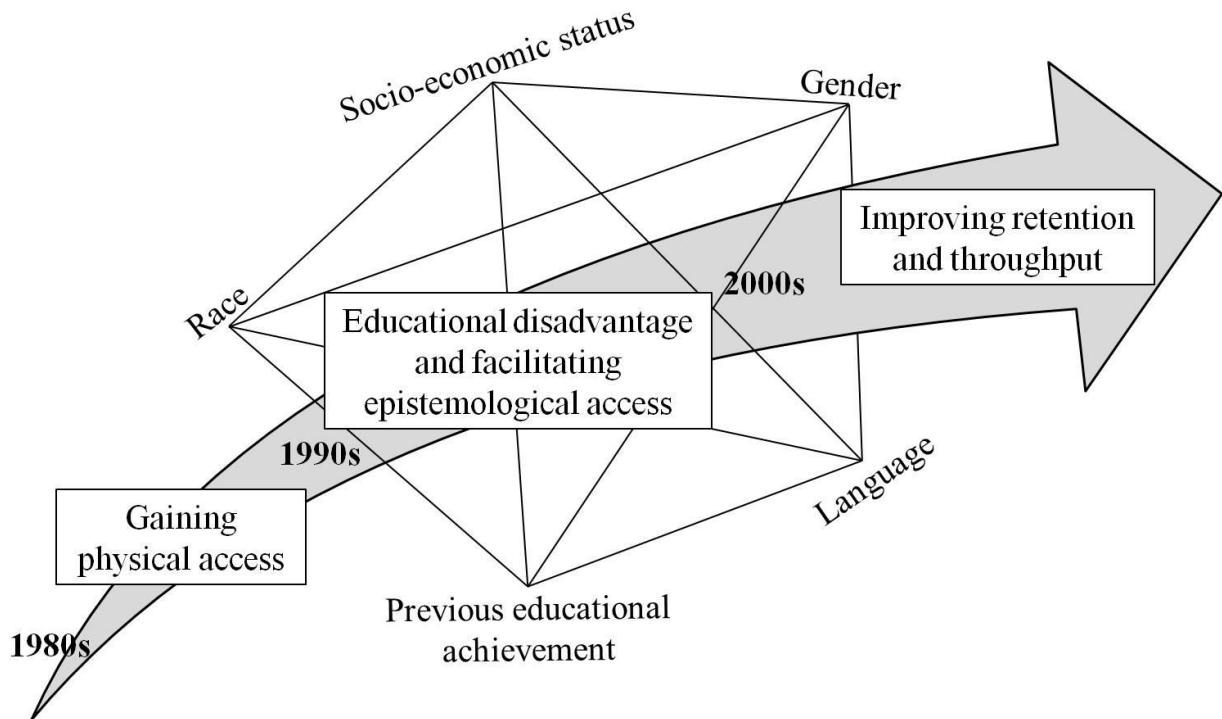


Figure 1-1. Historical-contextual framework

⁴ Although it is acknowledged that human nature and activity cannot be reduced to a set of variables, the term “variables” will be used in this thesis in relation to elements that pertain to measurement.

1.2.1 Three themes in South African higher education.

Prior to 1994 the South African Apartheid⁵ government effectively created a racially unequal higher education system that severely constrained the quality and variety of education for black⁶ South Africans (Bunting, 1994). In particular, the Bantu Education Act of 1953 facilitated the establishment of separate higher education systems for African, coloured, Indian and white⁷ South Africans, while the admission to white universities for black South Africans was prohibited through the Universities Amendment Act of 1959 (Mabokela, 1997). It is with this historical background in mind that a theme pertaining to gaining physical access to higher education arose in the 1980s. At a time in South African history when access to social, cultural, and educational systems for black South Africans was politically and legally constrained, social justice concerns around physical access to higher education were highly relevant. These concerns took the form of both liberal and radical perspectives (CHE, 2010). Whereas the former advocated for increased access to higher education for the purposes of economic growth and development (De Lange, 1981), radical perspectives argued that equitable access to (higher) education needed to be integrated with overarching social, political, and economic reform (Cross, 1986). Although not directly related to academic achievement, physical access concerns in the 1980s pertained to the right for equitable academic participation in higher education, an obvious precursor for academic achievement.

As South Africa transitioned to democracy in the 1990s, the possibility of participating in and gaining access to previously restricted higher education institutions became available for more

⁵ For the purposes of this study, “Apartheid” refers to the system of racial segregation that was enforced in South Africa between 1948 and 1994. Under this system, participation in civic life (including access to education) was unequally regulated and provided for according to a person’s racial classification (Soudien, 2010).

⁶ In this thesis, the term “black” is occasionally used to denote all population groups other than white (i.e., South Africans who identify as African, coloured, and Indian), this being consistent with the terminology used by the CHE (2010).

⁷ Consistent with the current norms for reporting by the South African government (especially Statistics South Africa), four population groups are referred to in this thesis: African, coloured, Indian and white. Capitalisation of these race categories in this thesis adheres to trends observed in recent DOHET (2012), CHE (2013), and Statistics South Africa (2013) publications.

South Africans. This effectively resulted in an increase in the number of non-traditional⁸ students in higher education, students who were identified as being underprepared for the demands of higher education (CHE, 2010). During the 1990s therefore, a higher education focus on remediating educational disadvantage emerged, especially in light of the realisation that –

... formal access to the institutions that distribute knowledge is different from, and not a sufficient condition for, epistemological access. To register as a student at a university is not yet to have gained access to the knowledge that the university distributes. (Morrow, 1994, p. 40)

Morrow (1994) further suggests that epistemological access cannot “be supplied ... [or] ‘done’ to the learner ... [or] ‘automatically’ transmitted to those who ... attend classes regularly” (p. 40). Whereas physical access could be provided, epistemological access requires a student to access the implicit forms of (higher) education academic practice.⁹ Students who are underprepared for higher education and/or who come from educationally disadvantaged backgrounds are likely to struggle to access and apply these forms of academic practice, unless they are specifically assisted to do so (Slonimsky & Shalem, 2004). Although there are multiple conceptions of what constitutes educational underpreparedness and disadvantage in (South African) higher education, current consensus operationalises the educational shortcomings in higher education academic practice that students may have as a result of prior schooling experiences (CHE, 2013). In the humanities and social sciences, this could include shortcomings in engaging critically with text, whereas in the sciences, these shortcomings could involve gaps in grounding scientific and mathematical concepts and procedures. Overall, however, academic achievement debates in the 1990s in South African higher education were primarily oriented towards understanding

⁸ Jama, Mapasela, and Beyliefeld (2008) define non-traditional students in the South African context to include typically black students who come from educationally and socio-economically disadvantaged backgrounds. Their perspective on non-traditional students in South Africa is widely shared (Cross & Carpentier, 2009).

⁹ Although Slonimsky and Shalem (2004) acknowledge the role of discipline specific activities, they highlight the disciplined activities of distanciation, appropriation, research, and articulation as relevant forms of higher education academic practice.

epistemological access challenges, educational disadvantage, and resultant academic underachievement by students.¹⁰

A third theme of improving retention and throughput is reflected on the far right of Figure 1-1, and signals national and institutional focuses on the quantification of the success of student movement through the higher education system. Although international student retention theories emerged in the 1970s (Bean, 1980; Spady, 1970; Tinto, 1975), a definitive focus on student retention and throughput in South African higher education only seemed to gain momentum in the early part of the 21st century (CHE, 2010). This focus was likely to have arisen in response to the sharp contrast between increasing participation rates and decreasing throughput rates, an increased focus on cost-efficiency, and a revised funding framework for South Africa higher education that placed an emphasis on funding in relation to throughput (CHE, 2010). In addition, even though student enrolment and participation in South African higher education increased rapidly, participation levels still seemed to fall below worldwide higher education participation levels.¹¹ In an attempt to account for the cost-effectiveness of higher education, and to address the poor performance of the sector, the past decade has therefore witnessed an increase in focus on retention and throughput. This has included the quantitative description and analysis of data that describes student participation, access, retention, completion, and graduation (CHE, 2010). Specifically, the graduation rate¹² for a traditional South African university is around 22% (CHE, 2009), while the completion rate¹³ for the 2006 cohort of students registered for bachelor's degrees is reported at 52% (CHE, 2013). By comparison, the average completion rate for

¹⁰ Although the notion of epistemological access was originally focused on the individual student, some earlier perspectives also questioned the role of the institution in facilitating this access (Jansen, 2001).

¹¹ South Africa has a higher education participation rate of around 16%, whereas an average participation rate of 20% is observed for socio-economically comparable countries (Fisher & Scott, 2011). "Higher education participation" rate refers to the proportion of the population in the 18-24 year age range who are enrolled in higher education (Scott, Yeld, & Hendry, 2007). The higher education participation rate peaks in North America and Western European countries at around 71%, while worldwide participation rates average 26% (UNESCO Institute for Statistics, 2009).

¹² "Graduation rate" refers to the proportion of students graduating in relation to the number of students enrolled in national higher education (CHE, 2009).

¹³ "Completion rate" refers to the proportion of students who successfully proceed to completion after enrolling for degrees (CHE, 2013).

tertiary-type A programmes¹⁴ in countries belonging to the Organisation for Economic Co-operation and Development (OECD) is 70%, and these peak between 80-90% in Japan, New Zealand, Norway, Poland, and Sweden (OECD, 2013). Although the range of completion rates for OECD countries is wide, none drop below 45% (OECD, 2013). Multiple individual and systemic factors such as funding constraints, career/degree change, and personal circumstances are likely to influence higher education graduation and completion rates, however, on average low rates are also a likely indicator of poor academic achievement and slow throughput in the sector.

In conjunction with the recognition that low participation and low graduation and completion rates in South African higher education are a concern from a financial and human capital development perspective (DOHET, 2012), these rates are also likely indicators of a system of low academic performance and academic underachievement. It is understandable then, that a major area of focus for South African higher education over the past decade has been that of representing quantitative rates of academic (under)achievement in the sector, and not the phenomenon of exceptional academic achievement. Although a current and historical focus on academic underachievement is understandable, I suggest that it is from the perspective of academic achievement at the exceptional end of the continuum that complementary and innovative insights could be achieved.

As identified earlier, the historical-contextual framework represented in Figure 1-1 incorporates two components. The first refers to the three themes discussed above, while the second component refers to a set of intersecting variables. These variables are represented as race, gender, socio-economic status, previous educational achievement, and language. While there are numerous other layered and intersecting variables that feature in the current and historical academic achievement and student participation debates in South African higher education, the aforementioned variables are emphasised due to the regularity with which they appear in relevant

¹⁴ Tertiary-type A programmes are categorised by the OECD (2013) as largely theory-based programmes that typically lead to research and highly specialised professional careers.

literature. Each of the five variables will be considered in relation to academic achievement in South African higher education.

1.2.2 Five intersecting variables in South African higher education.

Almost two decades ago, South Africa's Department of Education (DOE)¹⁵ emphasised the need to enhance the “success [academic achievement] rates of black students in general, and of African, Coloured and women students in particular” (DOE, 1997, p. 15). Despite increases in enrolments for African, coloured, and Indian students in South African higher education over the past decade (DOHET, 2012), these increases are still under-representative of national population estimates.¹⁶ Additionally, as mentioned above, the relative increase in access to higher education over the past ten years has not been accompanied by corresponding increases in educational output (throughput), this being especially so for black students. In their study of seven selected South African higher education institutions, Borhat, Mayet, and Visser (2010) identified that African females graduate at a rate of 1:2 (i.e., for every African female student who graduates from higher education, two African female students leave the system prematurely). In contrast, white females graduate at a rate of 3:1, and white males and Indian females at a rate of 3:2. A graduation to premature exit rate of 1:1 was observed for African and Indian males.

One South African study of academic achievement in higher education suggested that when compared to male students, female students were significantly more motivated in relation to academic endeavours (Sikwhari, 2007). In addition to being more motivated, Ochse (2003, 2005) identified white female students as achieving higher academically, while the past decade has witnessed a national trend of female students outperforming their male counterparts in South African higher education (Gibbons, 2010). Internationally, Lundy (2010) summarises that, although some family and socio-economic factors occasionally explain the relative advantage of female students in the United States of America (USA), on the whole, female students have

¹⁵ South Africa's Department of Higher Education and Training was established in 2009. Prior to this, higher education governance was managed by the then Department of Education (<http://www.hesa.org.za/partnersandlinks/departments-higher-education-training-dhet>).

¹⁶ Statistics South Africa (2013) estimates that 79.8% of the South African population are African, with 9% being coloured, 2.5% Indian, and 8.7% white.

gradually begun to outperform male students over the past four decades in higher education. Similarly, Lundy (2010) explains that, on average, the attainment of a bachelor's degree is more likely in white and Asian students than in African-American, Latino, and Native American students.

Overall, academic achievement and subsequent throughput in South African higher education seems to vary according to race and gender, with African students being most at risk for academic underachievement and drop-out (Letseka, Cosser, Breier, & Visser, 2010). Although some advances in the equity of access to South African higher education on the basis of race (and gender) have been made, representative academic achievement at throughput level does not yet appear to have materialised for the various race groups.

In turning to the third variable contained within Figure 1-1 (i.e., socio-economic status), O'Connor (2009) asserts that socio-economic status is “unequivocal... in affecting individuals' educational and social outcomes” (p. 124). Specifically, Bowen, Kurzweil, and Tobin (2005) report on a large-scale study of USA higher education students' academic performance and socio-economic status, noting that students from a low socio-economic status are proportionally underrepresented in high academic achievement categories (e.g., achievement of academic honours and/or election to honours societies). Similarly, South Africa's Human Sciences Research Council has reiterated that academic achievement and success rates are worse for students from lower socio-economic circumstances (Letseka & Maile, 2008), while three South African case studies on access and academic success consistently emphasise student poverty as a dominant constraining factor in the higher education academic achievement trajectory (Cross, Shalem, Backhouse, Adam, & Baloyi, 2010; Jansen, Tabane, & Sehlapelo, 2010; Ravjee, Hames, Ludwig, & Barnes, 2010).

Previous educational achievement in the South African higher education context (the fourth variable in Figure 1-1) generally refers to a student's performance in a set of national school-leaving examinations, commonly referred to as “matric” (Lubisi & Murphy, 2002). Universities allocate a point score to the level at which different subjects are passed in the matriculation

examinations (<http://www.cao.ac.za/Programmes.aspx?content=Programmes>). Higher performance in the matriculation examinations generally increases a student's matriculation score, and hence the student's chances of selection to higher education. By implication then, matriculation scores also have potentially long-term effects on an individual's academic and career path and subsequent socio-economic status. As such, it is essential that the matriculation results are reliable and have predictive validity for academic achievement in higher education (Foxcroft & Stumpf, 2005, June).

Although the reliability and predictive validity of school-leaving results are likely to be contentious in any country, in a context with a history and persistence of racially based educational and socio-economic disadvantage, difficulties arise when comparisons are made between students from diverse educational and social backgrounds (Loock & Grobler, 2004). Within this context, South African matriculation results have been found to possess differential predictive validity for students (and in female students) who came from historically black and historically white schools (Huysamen, 2001). In his initial analysis, Huysamen (2001) found that South African matriculation results over-predicted the higher education academic performance of students from historically black schools and males from historically white schools, while the matriculation results for female students from historically white schools were under-predictive of their academic performance in university courses. Other South African studies pertaining to the predictive validity of matriculation results (Foxcroft & Stumpf, 2005, June; Van der Flier, Thijs, & Zaaïman, 2003) reinforce the differential predictive validity according to race. However, these studies also highlight a closer correlation between matriculation results and academic achievement in mathematics and science students in higher education, than the matriculation results and academic achievement in higher education for non-mathematics and non-science students. Given that the entry requirements for mathematics and science-based degrees at South African higher education institutions are generally higher than those for other degrees, the latter findings also reiterate that students with high matriculation examination results are more likely to achieve in higher education when compared to those with lower matriculation examination results (Foxcroft & Stumpf, 2005, June).

In addition to identifying poverty and socio-economic status as likely constrainers of academic achievement in higher education, Jansen et al. (2010) also highlight language as relevant for consideration in the South African context (the fifth variable in Figure 1-1). Given that the majority of South African students are taught and assessed in higher education in a language other than their mother tongue, it is possible that this poses some learning and academic achievement difficulties. Despite institutional and national policies that advocate a move towards multilingualism and mother-tongue instruction in South African higher education, English as a medium of instruction and assessment persists in the majority of South African higher education institutions (Greenfield, 2010). In explaining the interaction between mother-tongue instruction and epistemological access, Mgqwashu (2011) asserts that advanced cognitive skills and concepts are best taught and learnt via a student's mother tongue. Undoubtedly, deficits in academic achievement are not purely ascribable to the linguistic pedagogic dimension, but Mgqwashu (2011) maintains this as a significant role-player in the academic achievement equation. In alignment with this, a governmental task team concluded that the academic performance of South African non-mother tongue matriculation examinees was significantly compromised (Umalusi, 2004). Similarly, it may be relevant to question which role language plays in the attainment of exceptional academic results in South African higher education.

In summary, the five aforementioned variables were presented separately in relation to their potential role in academic achievement in South African higher education. Although race was the primary way in which education systems, rights, and opportunities were stratified during Apartheid in South Africa, an *intersectionality* perspective is incorporated into the framework in Figure 1-1. This perspective necessarily involves other domains of social identity (i.e., gender, socio-economic status, previous educational achievement, and language). Intersectionality can be understood as “the relationships among multiple dimensions and modalities of social relations and subject formations” (McCall, 2005, p. 1771); therefore, facilitating an understanding of the category of race as necessarily *intersected* with other social, biological, and educational domains. Although the complexity of all social, cultural, and biological categories would be relevant in the historical-contextual framework presented in Figure 1-1, those of race, gender, socio-economic status, previous educational achievement, and language were highlighted due to their current and

historical relevance. It is the intersection between these various dimensions of identity and the cumulative effect and dynamic interplay of dimensional combinations that I argue are relevant to consider in (exceptional) academic achievement debates.

Over the past three decades, several struggles pertaining to successful student participation in South African higher education have ensued (CHE, 2010). Whereas this initially involved the struggle for physical access to participate, the latter two decades have involved the struggle to participate successfully in higher education. Research into the struggle for successful academic participation has revealed concerning levels of underachievement, and the persistence of the relationship between this underachievement and race, gender, socio-economic status, and language (CHE, 2010). In addition, previous educational achievement in the South African context remains enmeshed with race, socio-economic status, and educational disadvantage, thus compromising the predictive validity of the previous educational achievement on higher education outcomes. Given the current state of academic underachievement by students in the higher education sector, it is perhaps understandable that there has been a focus on remediating these levels of underachievement (Wilson-Strydom, 2010). Although not explicitly stated or probably intended, quantitative approaches to representing academic underachievement (as identified above) could be viewed from a *quantitative criticalist* perspective (Stage, 2007). This is because these approaches have exposed inequities within levels of academic underachievement in the South African higher education system, and this has in turn directed institutional and national intervention on the issue. The term “quantitative criticalist” (a researcher who conducts critical quantitative research) appears to have been first specified by Stage (2007) in a special issue of *New Directions for Institutional Research*. Informed by a critical theory paradigm, critical quantitative research could be positioned between research that is critical in orientation, and research that is positivist or postpositivist in stance. Although mainstream quantitative approaches may have functioned historically to reinforce oppressive social and cultural systems, their current and future applications could be used to expose inequity and injustice as long as they are applied to do so (Stage, 2007).

Despite the value of exposing inequities within the level of academic underachievement, a prevailing focus on the “failing/trailing” end of the continuum appears to have overshadowed the potential role that insights into the “exceptional/leading” end of the academic achievement continuum could have on higher education. Even though the past decade has witnessed a shift away from a concern with educational disadvantage and dropout to a concern with retention and throughput (CHE, 2010), this shift is still only reflective of a passing (and not exceptional) level of academic achievement.

1.2.3 The problem with a focus on the problem of academic underachievement.

In effect, a pervasive focus on the problem of academic underachievement appears to have dominated debates and research in South African undergraduate education over the past three decades (CHE, 2010). Although the value and need for the investigation and monitoring of the problem of academic underachievement is not being challenged, what is posed as problematic is the resultant conflation of academic underachievement with constructs of race, educational and socio-economic disadvantage, and language. (Kloot, Case, & Marshall, 2008; Marshall & Case, 2010; Soudien, 2008; Swanson, 2002). It is suggested that this conflation reinforces a mode of deficit thinking in South African higher education, a mode of thinking which tends to accentuate what is wrong with students, especially in terms of their educational histories, and capacities to meet the academic demands of higher education (Boughey, 2007; Smit, 2012). Valencia (1997) cautions that deficit modes of thinking are protean, and have their roots in oppressive and racist discourses. In the South African higher education context, the protean nature of deficit thinking could be identified through the evolution of notions of separate education, educational disadvantage, educational underpreparedness, and educational remediation as represented in the three themes contained within Figure 1-1. It seems as though these notions featured (and continue to feature) in South African higher education, reinforcing the problem with the individual student, and not necessarily taking into account the complexity of other domains. Other relevant domains are likely to include the structural components of the higher education institutions within which the student is positioned, as well as the structural components of the cultures and societies within which higher education institutions are positioned (Jansen, 2001).

In effect then, this study on exceptional academic achievement was conceived in response to a dominant higher education deficit discourse that seemed to perseverate on the academic shortfalls that individual students had, the problems of the schooling systems they came from, and to some extent the inadequacies that higher education institutions had in accommodating contemporary South African students. Although there has been a national shift towards retention, throughput, and student success (CHE, 2010; HELTASA, 2009; Scott et al., 2007) there still seems to be an absence of engagement with exceptional academic achievement in South African higher education. A complementary focus on high performance and exceptional academic achievement in higher education is suggested as being valuable for two reasons. Firstly, the focus could signal a move towards balancing deficit paradigms of academic underachievement with paradigms of strength and achievement. Secondly, a complementary focus on exceptional academic achievement could also offer insight into the dynamics of failure and success in higher education. If more is known about who excels and why they excel, this could inform national, institutional, and individual endeavours that aim to address academic underachievement. In effect, the aforementioned reasons capture the rationale for this study on exceptional academic achievement in South African higher education, and also signify the proposed disorientation from a focus on academic underachievement.

1.3 Disorientation from Academic Underachievement: The Phenomenon of Exceptional Academic Achievement

For the purposes of this study, exceptional academic achievement in South African higher education was not conceptualised as a research “problem”. Instead, it was conceptualised in response to (and disorientation from) the problem of academic underachievement and the resultant deficit discourse around academic underachievement. Specifically, exceptional academic achievement was assumed to describe a level of academic achievement by students who consistently obtain academically exceptional results in undergraduate modules, and graduate at the top end of an academic achievement scale. The study was located at the University of KwaZulu-Natal (UKZN), where a consistently high level of academic achievement

at the undergraduate level culminates in a student graduating *cum laude* or *summa cum laude*.¹⁷ Therefore, although exceptional academic achievement could be technically categorised, it was also understood to exist at the high extreme of an academic achievement continuum, and in dialectical tension with academic underachievement.

As a phenomenon that does not appear to be explicitly explored in South African higher education discourses, I advocate that this is an oversight and therefore position exceptional academic achievement in contemporary South African higher education as a highly relevant and necessary area of inquiry. Part of the rationale for this necessity rests with the assumption that understanding exceptional academic achievement facilitates an understanding of academic underachievement (as mentioned above). In addition, it is suggested that exceptional academic achievement has inherent institutional, social, and individual value. For the individual student who graduates from an undergraduate programme with an exceptional academic record, it is likely to afford him/her status and prestige, as well as increased opportunities for funded postgraduate study and/or priority in graduate recruitment programmes. In turn, these opportunities may have long-term socio-economic and transformative impact for the individual and their family. At an institutional level, the facilitation of academic engagement and achievement is core to its functioning, and so it is also likely that any higher education institution would value exceptional academic achievement. In confirmation of this, a South African higher education priority of “equity ... [and] high-level excellence and innovation” was recently advocated (DOHET, 2012, p. 7), while 15 of the 23 public South African universities explicitly list academic and other forms of excellence and exceptionality as part of their institutional vision and mission statements.

1.4 Objectives and Research Questions

The rationale for the current study was indirectly provided through the discussion of the problem of academic underachievement in South African higher education, and the phenomenon of

¹⁷ At UKZN, a student who completes a degree in minimum time, passes all modules at first attempt and obtains a credit weighted average of at least 75% across all modules will graduate *cum laude*. If the student meets the aforementioned conditions and has a credit weighted of at least 80%, the student will graduate *summa cum laude* (UKZN, 2013a).

exceptional academic achievement. The rationale is reiterated in the methodology chapter (see section 3.3). The major objective for this study was then to explore the phenomenon of exceptional academic achievement in South African higher education. However, it was essential that this objective was moderated by the historical-contextual framework presented above, and thereby accommodative of relevant themes of (in)equity, transformation, and development. This study was framed around the following questions and sub-questions:

- 1) What is the profile of academically exceptional undergraduate students in South African higher education?
 - a) Who are these students when considering variables¹⁸ of race, gender, language proficiency, matriculation score, degree/discipline, and financial aid status (inferred socio-economic status)?
 - b) Which of these variables are and which are not predictive of or associated with exceptional academic achievement?
- 2) *How* do unlikely or underrepresented examples of academically exceptional undergraduate students in South African higher education (i.e., students who do not fit the profile of exceptional academic achievement) achieve academic exceptionality? Specifically, ...
 - a) What strategies do underrepresented examples of academically exceptional undergraduate students use to achieve academically exceptional results?
 - b) What processes or structures are underrepresented examples of academically exceptional undergraduate students exposed to or engaged in?
- 3) *Why* do unlikely or underrepresented examples of academically exceptional undergraduate students in South African higher education (i.e., students who do not fit the profile of exceptional academic achievement) achieve academic exceptionality? Specifically, ...
 - a) What motivates underrepresented examples of academically exceptional undergraduate students to excel academically?

¹⁸Sociocultural and educational “variables” such as race, gender, and educational background are not ontologically perceived as static phenomena, but rather as dynamic cultural domains that may interact during the pursuit of exceptional academic achievement. Nonetheless, these variables are recognised as part of a contextual and educational transformation discourse in South African higher education, and are therefore necessary to incorporate as static constructs. Therefore, static classifications of these phenomena formed part of the initial phase in this study, and were used as part of a purposive sampling technique for the second and third phases.

1.5 The Structure of the Thesis and an Overview of the Study

This thesis is structured in five parts. The first part (Chapters 1 and 2) explores the historical-contextual and conceptual frameworks (and relevant literature associated with these frameworks) in relation to the phenomenon of exceptional academic achievement in higher education. The second part (Chapter 3) delineates the methodology used in the current study, while the third part (Chapters 4 and 5) reports on the descriptive findings and data-driven analyses from the study. The fourth part of the thesis presents an analysis of three systems of exceptional academic activity (Chapters, 6, 7, and 8), while the fifth part (Chapters 9 and 10) function to synthesise and theorise the phenomenon of exceptional academic achievement in higher education.

The argument for this thesis culminates in Chapter 10 with a socio-political object of exceptional academic achievement in South African higher education. Whereas Chapter 1 functioned to establish a historical-contextual framework from which this study on exceptional academic achievement could be grounded, Chapter 10 presents an outcome from this grounding framework where a fragile and homologous space between enabling and constraining environments is theorised. In Chapter 2, two conceptual frameworks for potentially conceptualising and explaining the phenomenon of exceptional academic achievement in higher education are presented. Specifically, Chapter 2 is structured around two sections, the first examining a social cognitive framework where a focus on individual effort and achievement is prioritised. In the second section (2.3), a sociocultural framework (and specifically cultural-historical activity theory) is discussed, and the potential value of a framework that enables the dialectical representation of the individual and the collective within the phenomenon of exceptional academic achievement is highlighted. Relevant literature is reviewed within the conceptual frameworks that are developed for this study.

Drawing on the historical-contextual and conceptual frameworks presented in the first part of the thesis, a methodology for (and overview of) this empirical study on exceptional academic achievement in South African higher education was formulated. This is presented in the second part of the thesis (Chapter 3). Specifically, a critical dialectical mixed methodology was drawn upon to formulate a methodological approach, this involving a two phase process. Phase 1 (a

quantitative phase) involved the development of a logistic regression model for exceptional academic achievement in South African higher education. Based on this logistic regression model (with a specific focus on inverting the model), sampling decisions were made to recruit qualitative research participants who were unlikely to excel academically, but who were nonetheless in the process of doing so. The qualitative research participants then embarked on an extended data production process, this including participation in focus group discussions, producing auto-photographical compilations, and participating in photo-elicitation interviews. The limitations for the study are also addressed in Chapter 3; however, these are integrated within the chapter and are therefore not restricted to a “limitations” section.

In response to the critical dialectical mixed methodology described in Chapter 3, the third part of the thesis (specifically Chapters 4 and 5) is structured to provide descriptive accounts of the phenomenon of exceptional academic achievement. Whereas Chapter 4 provides a uniquely quantitative representation (and *qualitative* explanation) of exceptional academic achievement at a collective institutional level, Chapter 5 provides a summary of descriptive and photographic-infused accounts of exceptional academic achievement at an individual level.

In the fourth part of the thesis, Chapter 6 extends the individual descriptions of exceptional academic achievement by operationalising the theoretical and analytical constructs from a sociocultural framework and cultural-historical activity theory. Here, the construction and analysis of an evolving system of exceptional academic activity is reported on. Sociocultural approaches are necessarily historical, and therefore Chapter 7 is grounded historically via the construction and analysis of a historical system of exceptional academic activity. Chapter 8 presents an institutional system of (exceptional) academic activity, and is also a manifestation of the novel application of activity theory as an integrative analytic device. Specifically, activity theory is used in Chapter 8 to synthesise quantitative and qualitative forms of data, yielding an account of exceptional academic activity at an institutional level.

Contemporary applications of activity theory identify that “a collective, artifact-mediated [*sic*] and object-oriented activity system, seen in its network relations to other activity systems, is

taken as the prime unit of analysis” (Engeström, 2009a, p. 56). Congruent with these applications, Chapter 9 presents the intersections within and between the three activity systems constructed and analysed in Chapters 6, 7, and 8. In particular, the contradictions and tensions, and emotional reflections and regulatory functions of the three intersecting activity systems are discussed. As mentioned above, the thesis is concluded with a socio-political object of exceptional academic achievement in South African higher education. This object was necessarily formulated in relation to the contextual and conceptual frameworks that grounded the study and the methodological and analytic activities engaged in by the researcher.

1.6 Concluding Remarks

Chapter 1 presented a historical-contextual framework for this study on exceptional academic achievement in South African higher education. Within this framework, three themes pertaining to successful student participation and academic achievement in higher education were explored. In addition, five intersecting variables that seemed to have featured regularly over the past three decades in research and debate around academic achievement in South African higher education were incorporated within this framework. Furthermore, a focus on the problem of academic underachievement was identified, which in turn was suggested as being problematic.

Specifically, it was suggested that the focus on academic underachievement tends to reinforce deficit modes of thinking and conflated notions of race, gender, socio-economic status, previous educational history, and language, with higher education academic achievement. In response to the focus on the problem of academic underachievement in South African higher education, I advocated for complementary attention to the phenomenon of exceptional academic achievement. This was rationalised as being valuable and relevant at individual, social, and institutional levels in contemporary South African higher education, as well as being consistent with a current transformation agenda of equity and development.

Having grounded this thesis historically and contextually, and having provided a quantitative overview of the academic (under)achievement landscape in South African higher education, the following chapter presents a discussion on the potential use of both a social cognitive and a sociocultural framework to conceptualise and explain exceptional academic achievement.

Chapter 2. From a Dominant Social Cognitive Framework to an Emerging Sociocultural Framework

2.1 Introduction and Overview of Chapter

In Chapter 1, a historical-contextual framework was developed for this study on exceptional academic achievement in South African undergraduate higher education. Relevant literature was reviewed within the development of this framework. Given the unique South African context, this framework incorporated three themes pertaining to the struggle for successful student participation and academic achievement in higher education. In addition to these three themes, the historical-contextual framework incorporated a set of intersecting variables that were included as a result of the regularity with which they appeared in academic achievement debates. During the development of the historical-contextual framework, two important points regarding academic achievement in South African higher education were highlighted. First, it became apparent that a deficit mode of thinking seemed to dominate conceptualisations of students in higher education (e.g., through notions of disadvantage, remediation, academic underachievement, and failure). Even though recent discourses of retention and throughput signal a shift towards academic success, they do not yet seem to represent or incorporate accounts of exceptional academic achievement. Second, a quantitative trend in the representation of student participation, access, retention, graduation, and throughput was noted. Although these quantitative representations are valuable, they do not appear to account for rates of exceptional academic achievement. As a result, it was identified that a gap existed in the exploration of exceptional academic achievement in South African higher education, both at a quantitative representational level and at an explanatory level.

Chapter 2 is aimed at moving away from a purely quantitative review and representation of academic (under)achievement in higher education. This chapter provides a review of relevant literature pertaining to two conceptual frameworks that also offer explanations of the dynamics involved in the attainment of exceptional academic achievement. In the first section of Chapter 2, a dominant social cognitive framework for explaining exceptional academic achievement is presented, and in the second section of this chapter, a sociocultural framework is presented.

2.2 A Social Cognitive Framework for Exceptional Academic Achievement: An Individual–Social Dualism

Mainstream psychological explanations of (exceptional) academic achievement seem to focus on the acquisition and application of certain qualities and/or skills in individual students, and how these could be directed towards the goal of academic achievement. These mainstream approaches are often identifiable as cognitive, social cognitive, and behavioural orientations to student learning and academic achievement. Underlying assumptions of individualism (or liberal individualism) and individual–social dualism are evident in these approaches (Henriques, Hollway, Urwin, Venn, & Walkerdine, 1998). Moreover, these underlying assumptions are likely to incorporate a latent Cartesian view of a stable unitary self, where a subjective inner world is perceived as separate from an objective external reality (Mkhize, 2004). In the context of South African higher education, these approaches would prioritise an individual student’s inherent intellectual abilities, efforts, and agency as primarily driving exceptional academic achievement outcomes.

Traditionally, notions of innate cognitive ability and psychometric intelligence dominated research into the phenomenon of exceptional achievement across a variety of academic and non-academic domains of human activity (Sternberg, Grigorenko, & Ferrari, 2002). Although still popular today, intelligence, intelligence testing, and static models of understanding human ability can be critiqued as being highly deterministic and culturally biased (Cockcroft & Lather, 2013). Moreover, the assessment of “intelligence” via psychometric testing does not reliably account for and explain the attainment of exceptional achievement, whether in the academic domain or not (Simonton, 1994). Over the past 30 years, there has been a shift in focus towards more dynamic models of understanding academic achievement, models which attempt to explore and describe the individual, social, and contextual processes and factors that may contribute to academic achievement (Sternberg et al., 2002). Nonetheless, correlational studies between psychometric intelligence and academic achievement have still featured in South African higher education studies over the past two decades (see Mouton, 1991; Swartz, 1998; Van Eeden, De Beer, & Coetzee, 2001; Van Zyl, 1989). The most recent of these confirms that scores on intellectual measures and actual academic performance are largely unrelated (Skuy & Skuy, 2005). As

popularity around measures of intelligence waned, there seems to have been a corresponding increase in interest and inquiry into non-intellective factors (especially social cognitive perspectives on self-regulated learning) and the role that these may play in academic achievement (Cockcroft & Lather, 2013). The following section explores the proposed role of self-regulated learning in the exceptional academic achievement domain.

2.2.1 Self-regulated learning.

Social cognitive approaches to self-regulated learning (SRL) and motivation are commonly presented as strategies and processes that distinguish high achieving students from students who do not excel academically (Bandura, 1997; Pajares & Miller, 1994; Zimmerman, 1995). Rooted in Albert Bandura's social cognitive theory (originally referred to as "social learning theory"), human functioning and learning is proposed to arise from the bidirectional interactions between personal, behavioural, and environmental domains (Bandura, 1986). In contrast to purely cognitive approaches to learning, social cognitive approaches propose and explain supposed reciprocal relationships between social, cognitive, and behavioural processes. A core component of social cognitive theory is the concept of human agency, which involves the notion of "intentionally mak[ing] things happen by one's actions" (Bandura, 2001, p. 2). Contemporary social cognitive research, however, endeavours not only to understand the "self" and agentic components of learning, but also aims to incorporate the fundamental principle of "triadic reciprocity" as proposed by Bandura (1986, p. 23). In this way, the reciprocal determinism of three components is acknowledged, namely "self" (personal and cognitive factors), behavioural, and environmental components. Here it is affirmed that self, behavioural, and environmental factors mutually influence and determine each other, and all three of these components would be relevant to integrate in the construct of SRL to explain exceptional academic achievement.

For the purposes of constructing the argument in this thesis, it was relevant to consider certain questions in relation to SRL. In particular, it was important to define *what* SRL is, and in doing so to identify its structure and function. This necessarily included reference to the motivational components of SRL, as well as the various cognitive and metacognitive processes that exist within SRL (Zimmerman, 2002b). These descriptions provided a frame for conceptualising the

phenomenon of exceptional academic achievement, and in particular what it is that exceptional students do to attain exceptional results. Finally, it was also of value to consider *how* SRL is assumed to be acquired from a social cognitive perspective, and *why* it would be employed by high achieving students. Responses to the latter two questions provided important insight into the ontological assumptions of a social cognitive perspective of SRL and exceptional academic achievement.

2.2.1.1 The structure and function of self-regulated learning (what).

Social cognitive approaches define SRL as the processes whereby students “personally activate and sustain cognitions, affects, and behaviours that are systematically oriented toward the attainment of learning goals” (Schunk & Zimmerman, 2008, p. vii). This definition includes cognitive and metacognitive strategies, as well as the interaction of these strategies with behavioural and environmental elements. Motivational elements are implicit in the definition via reference to the individual having to generate and sustain various cognitive, metacognitive, affective, and environmental processes internally, as well as to direct these in the learning context towards academic achievement. In summarising five central tenets around the regulation of learning, Hadwin, Järvelä, and Miller (2011) specify that such regulation is necessarily intentional and goal-directed, metacognitive, social, and inclusive of behaviours, cognitions, and motivation/affect. They also assert that it is necessary for some level of challenge to be present in order to stimulate the regulation of learning.

SRL should not be perceived as a unitary skill, construct, or process, but rather as the outcome of several underlying and dynamic sub-processes (Zimmerman, 2002a). In conceptualising the function and structure of these dynamic sub-processes, Zimmerman and Campillo (2003) locate these within a three-phase cyclical model. The model, a before, during, and after arrangement, suggests that SRL typically progresses through three phases involving forethought, performance, and self-reflection. Within these three phases, nine self-regulatory sub-processes are proposed to feature. These nine sub-processes are goal setting, task strategies, self-instruction, self-monitoring, imagery, time management, environmental structuring, help seeking, and self-evaluation/reflection (Zimmerman, 2002a). These sub-processes are probably immediately

recognisable as components of many academic skills development programmes in higher (and other levels of) education. The three phases, as well as the nine self-regulatory sub-processes mentioned above are reflected in Figure 2-1 (below), and are likely to be evident in students who excel in higher education, as well as experts from a variety of disciplines and domains of performance.

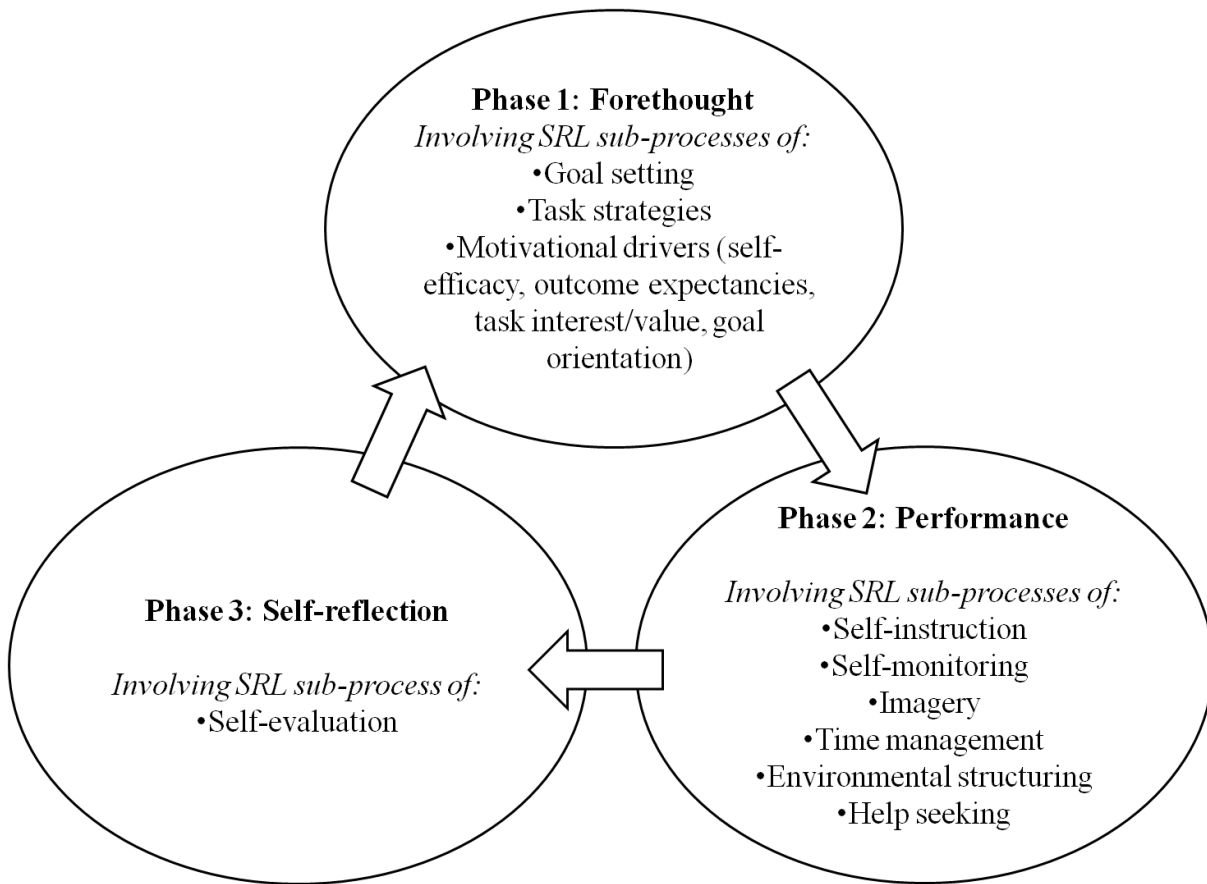


Figure 2-1. Adapted social cognitive model of SRL phases and sub-processes (adapted from Zimmerman & Campillo, 2003)

The forethought phase (Phase 1 in Figure 2-1), proposed to occur prior to a set of learning efforts taking place, predominantly draws on the two aforementioned SRL sub-processes of goal setting and task strategies. Goal setting, which could include students specifying projected actions or outcomes in relation to their studies, has been explored extensively in multiple higher education

studies (Friedman & Mandel, 2010; Jeng & Shih, 2008; Usher & Kober, 2012). Invariably, results from the aforementioned studies affirm a positive correlation between the act of goal setting and high academic achievement outcomes for students in higher education.

The second sub-process within Phase 1 (task strategies) refers to the capacity to identify and select appropriate study-related methods for a relevant study task (e.g., use of section headings to order and prioritise study processes, or using mnemonics as a memory aid). In the higher education academic achievement domain, several studies have made use of the Learning and Study Strategies Inventory (LASSI) to explore (among other learning and study components) the relationship between study-related task strategies and academic achievement (see Griffin, MacKewn, Moser, & VanVuren, 2012; Moseki & Schulze, 2010; Yip, 2007, 2009, 2012). Results from the aforementioned studies have found that students who are aware of and able to use a variety of appropriate task strategies directed towards the attainment of learning goals are more likely to excel academically when compared to those whose knowledge and application of task strategies are limited.

The second (performance) phase of the model reflected in Figure 2-1 includes six SRL sub-processes, namely self-instruction, self-monitoring, imagery, time management, environmental structuring, and help seeking. It is suggested that these processes primarily occur during the actual implementation of behavioural actions directed towards the learning process (Zimmerman & Campillo, 2003). Within the social cognitive domain of SRL, self-instruction involves the use of dynamic self-dialogue to guide and instruct cognitive and emotional learning processes (Hardy, 2006), whereas self-monitoring is perceived to be a process where a student would self-assess progress on a learning task. If the self-monitoring is effective, internal feedback from this is likely to direct further (probably modified) action, thereby enabling the student to be more successful in the learning (Butler & Winne, 1995). Zimmerman and Campillo (2003) also propose that during the performance phase, the self-regulatory sub-process of imagery features dominantly. Involving the use of mental images or visualisations, imagery is likely to assist a student in achieving successful learning outcomes by providing a metacognitive match between imagined and actual behaviours and outcomes. Two recent studies highlighted the positive association between academic achievement outcomes and self-monitoring (Bercher,

2012; Gynnild, Holstad, & Myrhaug, 2008), while Kim's (2008) study on instrumental practice for higher education music major students suggested that practice effectiveness was enhanced through the use of self-guided verbalisations (i.e., self-instruction) and visual and aural imagery. In addition, Cavazos, Johnson, and Sparrow (2010) identified that Hispanic students' academic challenges were ameliorated via the use of (among other strategies) self-talk/self-instruction.

Three other self-regulatory sub-processes (i.e., time management, environmental structuring, and help seeking) are also highly relevant for academic achievement outcomes in higher education. Time management, for example, is a specific sub-scale of the LASSI, and features persistently as a self-regulatory strategy that is positively associated with high academic achievement outcomes (Griffin et al., 2012; Moseki & Schulze, 2010; Ning & Downing, 2010; Yip, 2009). This is not a universal finding, however, with a South African study finding no relationship between academic achievement and time management for African engineering students (Swart, Lombard, & de Jager, 2010). Similarly, Seabi (2011) identified that the LASSI sub-scales of attitude, motivation, freedom from anxiety, and test strategies appeared to be more strongly associated with academic achievement than the subscale of time management. It is probable that these two South African studies not only highlight potential validity and applicability shortfalls with self-report time management measures from USA in the South African context, but also the non-discrete and interconnected nature of the construct of time management in the learning process. This is verified in Plant, Ericsson, Hill, and Asberg's (2005) study on grade point average and time spent studying, their findings affirming value in the quality (and not quantity) of time spent studying in relation to academic achievement outcomes. This raises questions about time management as being beyond scheduling time to study, to include what (and how) it is that students do during scheduled time.

Environmental structuring involves selecting and/or setting up favourable study environments, and is readily acknowledged as a self-regulatory sub-process that could help students enhance their academic achievement outcomes. More specifically, environmental structuring could involve students arranging their physical space in ways that promote their learning and minimise distractions (e.g., arrange a desk, organise ready access to study material at the desk, avoid

studying in noisy venues) (Nota, Soresi, & Zimmerman, 2004). In addition to the role that institutional environments play in enhancing academic performance in students, students' efforts at manipulating their own micro study environments to suit their individual needs have also been identified as relevant in relation to academic achievement outcomes (Kuh, Kinzie, Schuh, & Whitt, 2005; Strydom & Mentz, 2010).

The self-regulated sub-process of help seeking has also been identified as an essential component to academic attainment (R. S. Newman, 2008). In support of this assertion in the higher education context, Cavazos et al. (2010) identified help seeking (in conjunction with other behaviours) as an important strategy for Hispanic students in American higher education systems to overcome both academic and personal challenges.

The final (self-reflection) phase of Zimmerman and Campillo's (2003) model of the structure and function of self-regulatory learning processes is proposed to involve primarily the SRL sub-process of self-evaluation. Incorporating a predetermined personal or objective standard, it is suggested that students who effectively self-evaluate their achievements are likely to attribute these achievements to their own efforts, as well as incorporate these evaluations back into a self-regulatory learning feedback cycle. Overall, Zimmerman and Campillo's (2003) model provides a dynamic three-phase process for conceptualising the manner in which a student may develop and sustain self-regulatory behaviours, and direct these towards the attainment of learning outcomes. In addition, the aforementioned social cognitive definition and three-phase model of SRL implicitly involve motivational elements that may inform and reinforce the use of self-regulatory processes.

2.2.1.1.1 Motivation and self-regulated learning.

Although there are multiple dimensions to the construct of motivation from a social cognitive perspective, two aspects are important to acknowledge. Firstly, motivation is recognised as an internal state (a feeling, drive, condition, and/or need), and secondly, this state may direct behaviour towards a particular goal (Kleinginna & Kleinginna, 1981). Cognitive and social cognitive approaches to understanding motivation therefore mostly position motivated behaviour

as arising from an individual's internal choice or decision, a choice that is then directed towards the attainment of the individual's goals (Elliott & Dweck, 2005).

Within the social cognitive self-regulatory cycle, several motivational elements are proposed, namely self-efficacy, outcome expectancy, learning goal orientation, intrinsic interest, task value, future time perspective, and causal attributions (Zimmerman, 2011). The three most commonly researched motivational elements appear to be self-efficacy, outcome-expectancy, and future goal orientation, and the following discussion will be limited to a social cognitive construct of motivation generally, and then these three sub-processes specifically.

In their longitudinal study involving SRL, motivation and academic achievement in undergraduate business students from Hong Kong, Ning and Downing (2010) highlight the reciprocal interrelationship between four motivational constructs, components of SRL, and academic achievement. Similarly, in her exploration of the cognitive and metacognitive strategies used by successful South African dentistry students, McMillan (2010) affirmed the supportive role that positive motivation plays in the use of SRL techniques directed towards academic attainment. In addition, positive relationships between motivational constructs (such as self-esteem, self-efficacy, and identity) and academic achievement were also affirmed in two other research studies (Jaret & Reitzes, 2009; Turner, Chandler, & Heffer, 2009). Sikhwari's (2007) study, based at the University of Venda, also positively linked self-concept, motivation and academic achievement, while Ochse (2003, 2005) explored the influence of outcome expectancy and self-perception on academic achievement. Finally, the positive relationship between academic delay of gratification, future time perspective, and academic achievement has also been proposed (Bembenutty & Karabenick, 2004).

Self-efficacy and outcome expectancy represent different types of motivational expectancies within a social cognitive framework. Whereas "self-efficacy" refers to a person's beliefs about their potential to initiate and effect a future path of action, "outcome expectancies" refers to how that person is likely to assess the consequences of future actions (Zimmerman, 2011). For example, students may believe that they are able to act upon and complete a specific learning

task (e.g., complete an assigned essay), however they may also expect that the outcome of their actions would be poor (e.g., expect a low mark). In this instance, high self-efficacy would be a motivator for action; however low outcome expectancy may detract from this motivation to act. When unpacking the motivational construct of self-efficacy, it is useful to highlight Bandura's (1986) prioritising of humans' self-reflective capacity. In doing so, he suggested that humans had the capacity to be self-evaluative and self-efficacious. Related to this, Bandura (2001) also began to emphasise an agentic perspective to human existence whereby individuals can "intentionally make things happen by [their own] actions" (p. 2). In this way, the efficacy belief system is inherently grounded within a human agentic perspective. So, although motivation may be activated by multiple factors, Bandura (2004) contends that these factors "are rooted in the core belief that one has the power to effect changes by one's actions" (p. 622). It is in line with this underlying belief, that the motivational elements of self-efficacy and outcome expectancy have featured dominantly in SRL and academic achievement research (Bandura, 1997; Pajares, 2008).

In addition to setting goals as an SRL strategy, goal orientation has also been theorised as a motivational source within the forethought phase of the self-regulatory cycle. Most commonly, researchers have referred to either performance or learning goal orientations, emphasizing the latter as being more conducive for SRL and academic achievement outcomes (Zimmerman & Labuhn, 2012). Students who primarily adopt a learning goal orientation are focused on learning and mastery processes, these processes being likely to drive self-regulatory capacity and academic achievement. In contrast, students who primarily adopt a performance goal orientation tend to focus on generating favourable competence judgments from others (Zimmerman & Labuhn, 2012). Performance goal orientation is therefore more focused on outcomes as compared to learning and mastery processes, and therefore supposedly less conducive to the development of SRL. Although some research has confirmed the above (e.g., Abar & Loken, 2010; McMillan, 2010), the adoption of a learning or performance goal orientation is unlikely to be a discrete or separate choice. Additionally, performance goal orientations are not always motivationally and academically maladaptive, especially when adopted in conjunction with a strong learning or mastery inclination (Kolić-Vehovec, Rončević, & Bajšanski, 2008; Pintrich, 2000).

Although the various SRL sub-processes appear to have been extensively explored in the domain of higher education, they offer a perspective on academic achievement that is oriented towards individual students controlling their internal and external worlds. Whereas this stance in itself is not problematic, I suggest it does pose problems for contexts where a separation between internal and external is not logical or desirable, and/or where external worlds have been structured in largely unequal ways. In unequal contexts, it is unlikely that the external world is equally controllable for all individuals, and so certain perspectives on SRL that emphasise individual control may be problematic (McCaslin, 2009). In a system like South Africa with a long-standing history of inequality and residual inequity, it is relevant to ask how individuals with a cultural historical experience of inequality exert individual control over unequal external worlds.

2.2.1.2 Ontological assumptions (how and why).

As indicated above (see subsection 2.2.1), clarifying the process of SRL acquisition (how), as well as why a student may employ SRL sub-processes reinforces important underlying assumptions that are implicit in social cognitive approaches to SRL. I suggest that these assumptions may not resonate well with contemporary aims for a transformed higher education system where concurrent emphasis is placed on equity and development, with exceptional academic achievement outcomes.

Schunk (2001) highlights a process of SRL acquisition across four levels of “observation”, “emulation”, “self-control”, and “self-regulation”. He suggests a developmental process that is initiated socially through observation, which then moves towards a process of emulation of a model/person. These two levels of externally managed (self)-regulation are proposed to transform over time into two internal levels of self-control and self-regulation. From a social cognitive perspective, Bandura’s (1986) concept of “triadic reciprocity” (p. 23) as mentioned above, features throughout all levels of the acquisition of SRL. Depending on the age and developmental stage of a student, the student may observe and emulate a role-model (e.g., teacher, lecturer, and peer), and over time internalise these forms of external regulation into internal levels of self-control and self-regulation. This increased self-regulatory functionality would in turn have an impact on the social and environmental context within which a student

then operates. However, social cognitive perspectives on SRL acquisition incorporate “an ontological commitment to procedural and strategic knowledge structures *possessed by the learner* [emphasis added]” (Martin, 2004, p. 136). In light of this, it is assumed that the student as an individual exists, as do intrapsychic processes and structures that direct the student’s actions and outcomes. These intrapsychic processes and structures are knowable through inquiry, thereby representing the epistemological assumptions of social cognitive theory. More recent social cognitive approaches to agentic action have been extended to include proxy and collective agency (i.e., reliance on others and group attainment respectively). However, these modes of agency are not understood as operating “independently of the beliefs and actions of the individuals who make up a social system” (Bandura, 2001, p. 14).

Having described the structure, functionality, and acquisition of SRL, it is finally relevant to conceptualise why a student would use SRL. In the above description, SRL has been explicitly positioned as a powerful process that could enable students to control themselves and their environments to enhance their individual learning pursuits and academic achievement outcomes. An outcome of this control could include personal freedom and the attainment of individual goals (Bandura, 1997). What is relevant to reiterate at this point are constructs of *control* (internal or external), and notions of *personal freedom* and *individual pursuits*. Under the guise of helping a student develop self-reliance and purpose, I suggest that it is also possible that this help may incorporate subtle forms of control and manipulation, concurrently reinforcing a dominant culture of individualistic aspiration. In support of this, Roth (2011) suggests that dominant Western motivation research could be understood as “a tool of the ruling classes to make people (students, workers), do what they do not feel like doing” (p. 45). It is important to ask whether there are options for conceptualising motivation, SRL, and exceptional academic achievement from a less individual and control-oriented focus. I argue that a sociocultural framework may offer this, and section 2.3 provides a discussion of the possible application of this framework to the phenomenon of exceptional academic achievement in contemporary South African higher education.

2.3 A Sociocultural Framework for Exceptional Academic Achievement: An Individual–Social Dialecticism

Although mainstream quantitative representations (see section 1.2) and social cognitive approaches (see section 2.2) have dominated explanations and conceptions of learning and academic achievement, sociocultural views have started to gain momentum and prominence over the past two decades (Göncü & Gauvain, 2012). A sociocultural framework for explaining exceptional academic achievement is explored in section 2.3, and relevant literature embedded within this framework is reviewed. This sociocultural framework (and cultural-historical activity theory in particular) is offered as an approach which may enable a conceptualisation and explanation of exceptional academic achievement that transcends the differentiation between notions of individual and social. Specifically, the underlying assumptions pertaining to a sociocultural framework are proposed to offer a viable stance to conceptualise and explain concurrent constructs of exceptional academic achievement and an African higher education context with a transformative and equity-driven agenda. In addition, the critical origins of sociocultural thought and cultural-historical activity theory enable a particular application in rapidly developing and transforming societies like South Africa. In contrast to the quantification of an academic underachievement problem in South African higher education (presented in section 1.2), social cognitive and sociocultural frameworks offer the potential to explain the phenomenon of exceptional academic achievement in South African higher education. I argue that the limitations of each framework (i.e., quantitative, social cognitive, and sociocultural) necessitate a blended approach to exploring and conceptualising the phenomenon of exceptional academic achievement in South African higher education.

Lev S. Vygotsky, a Russian psychologist who worked and wrote in the early part of the 20th century in a post-revolutionary Soviet context (Cole & John-Steiner, 1978), is often positioned as a key sociocultural theorist who has informed contemporary sociocultural thinking (Göncü & Gauvain, 2012). Strongly grounded in the philosophies of Hegel, Marx, and Engels, Vygotskian and sociocultural theory position a dialectical approach as “the keystone ... to the study and interpretations of man’s [*sic*] higher psychological functions” (Vygotsky, 1978, p. 61). In characterising the nature of a dialectical approach, Vygotsky (1978) draws on Engels’

contrasting of dialecticism with naturalism (in itself a dialectical act). Specifically, he identifies that, although a dialectical approach acknowledges the influence of nature on human beings, this approach recognises that human beings also influence nature, and by virtue of this influence “create new natural conditions for [their] existence” (Vygotsky, 1978, p. 60). From a Hegelian perspective, dialectical thought processes may involve the proposition of a stance (e.g., that nature influences human beings), a contradiction to the stance (e.g., that human beings in turn influence nature) and then a reconciliation of the contradiction to the stance (e.g., that in affecting nature, human beings create a new nature within which to exist). In this way, a dialectical stance would involve a thesis, an antithesis to the thesis, and finally a synthesis (Ratele, 2004). Where Bandura’s notion of triadic reciprocity (see subsection 2.2.1) advocates for an understanding that constructs of the internal self, external behaviour, and the environment reciprocally determine each other, the notion of dialecticism materialises the tensions between social and individual constructs, and allows for an analysis of what happens *between* these constructs (Tudge & Winterhoff, 1993).

Specifically, a sociocultural framework may offer a strategy to move beyond dualistic conceptions of the individual and the social, even where those conceptions acknowledge that a reciprocal relationship exists between them. In addition, a sociocultural framework may provide an avenue to theorise equity and transformation not in opposition to excellence and quality, but as necessary and integral to it. This is because a dialectical stance is inherently focused on the necessity and integration of contradiction and paradox (Riegel, 1976). From a preliminary dialectical stance for example, I suggest that quantitative approaches to representing (exceptional) academic (under)achievement generate the position that academic achievement is strongly related to membership to certain sociocultural groups (a thesis). Social cognitive approaches offer an antithesis to this thesis, namely that individual students (through SRL), regardless of their group membership, can regulate their way to exceptional academic achievement. The following sociocultural approach is positioned as a potential synthesis of the quantitative and social cognitive positions presented in Chapters 1 and 2. Here, static constructs of race, gender, and socio-economic disadvantage can be disrupted, while an opportunity also exists to move beyond purely individualistic paths for exceptional academic achievement.

2.3.1 Defining socioculturalism: The human mind as mediated.

Although there are multiple definitions of socioculturalism (McInerney, Walker, & Liem, 2011), Schoen (2011) suggests that “sociocultural philosophy is concerned with how individual, social, and contextual issues impact human activity, especially learning and behaviour” (p. 12). Similarly, Mkhize (2004) emphasises that sociocultural approaches allow an understanding of how psychological processes (which could include learning and behaviour) “emerge from the social basis of life” (p. 54). Moreover, a sociocultural framework is necessarily historically situated and mediated by culture, where culture could be conceptualised as a dynamic and intersubjective experience of communal human engagement (Göncü & Gauvain, 2012).¹⁹ In drawing together aspects from various definitions of a sociocultural approach (to human existence, learning, and academic achievement), five key principles, as identified by Lantolf (2000), are relevant to highlight:

- Culture is constituted by human participation in interpersonal activity with other members of that culture.
- Culture has an essential role in mediating the content of the intrapersonal human mind.
- A sociocultural approach necessitates a triadic concern with individual, social and contextual aspects of human activity and learning.
- Social and interpersonal are important factors in the development of psychological processes.
- Learning and other psychological processes are historically situated, and therefore require a historical perspective.

Lantolf (2000) also identifies that “the most fundamental concept of sociocultural theory is that the human mind is *mediated*” (p. 1). The term “mediated” (or “mediation”) is used purposively by Daniels (2012, p. 70) when he further explores the concept of dialecticism. In this

¹⁹ Göncü and Gauvain’s (2012) explication of culture specifically refers to children and theories of educational psychology. However, in defining a sociocultural approach to the educational psychology of children, I argue that the authors also indirectly refer to sociocultural approaches that theorise learning in any age group.

exploration, it is proposed that the mediated relationship between the social and the individual (or human mind) is not necessarily direct. Specifically,

[t]he dual process of shaping and being shaped through culture implies that humans inhabit “intentional” (constituted) worlds within which the traditional dichotomies of subject and object, person and environment, and so on, cannot be analytically separated and temporally ordered into independent and dependent variables. (Cole, 1996, p. 103)

Cole’s (1996) assertion against the analytical separation of “subject and object, person and environment” (p. 103) into variables implies a qualitative research methodology in sociocultural approaches to learning and academic achievement. Cole (1996) further encourages that relevant intrapersonal and interpersonal constructs in human existence are theorised dialectically and materialised concurrently during inquiry.

Earlier, the origins of sociocultural thought and dialecticism were attributed to the work of Vygotsky (see section 2.3). Similarly, the concept of mediation can also be historically located in Vygotsky’s work. Although Vygotsky’s (1978) original construct of mediation referred specifically to the use of signs for regulating (mediating) internal psychological operations (Miller, 2011), his construction is useful in illustrating the broader developed principle of mediation as described above (see subsection 2.3.1). In response to traditional stimulus-response theories of human action, Vygotsky (1978) proposed a triangular representation of a “complex, mediated act” (p. 40) (Figure 2-2). Figure 2-2 exemplifies this triangular representation, illuminating the mediated relationship (i.e., X) between stimulus (S) and response (R). From a Vygotskian perspective then, a simple stimulus–response process is understood as being a complex process, a process that is mediated by something else (i.e., X).

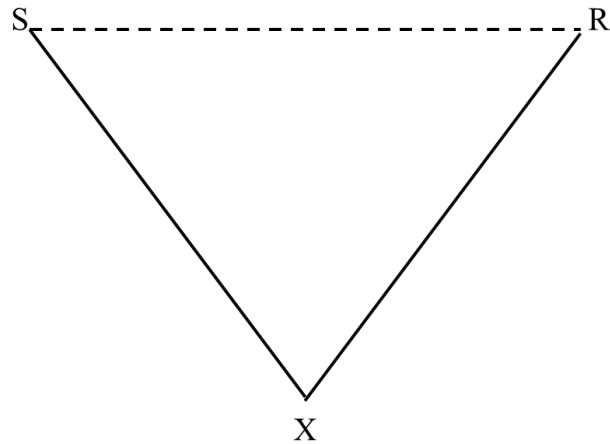


Figure 2-2. Vygotsky's triangular representation of a complex mediated act

For example, in a learning environment, a student's learning processes should not be understood as in simple response (R) to what is being taught (a stimulus [S]), but rather as a process that is mediated by "a second order stimulus (sign) that is drawn into the operation" (Vygotsky, 1978, p. 39). The second-order stimulus (X) or sign could be comprised of a number of potential cultural systems of meaning, this being especially exemplified in human language systems (Reunamo & Nurmilaakso, 2007). Language, word meaning, and symbolic representations are examples of psychological tools (i.e., systems of signs) that could be used to direct academic activity. It is important to differentiate between internally oriented psychological tools (e.g., language systems) and externally oriented tools and artefacts (Miettinen, Paavola, & Pohjola, 2012). In contemporary higher education learning and academic achievement environments, I suggest that examples of the latter could include textbooks, other study-related material, computers (machines), and computer software (such as academic search engines, online learning sites/Moodle, and research software). These are examples of cultural tools which could be seen as mediating the teaching and learning process. They are perceived as cultural tools in the sociocultural sense of "culture", which as defined earlier by Göncü and Gauvain (2012) is constituted by human participation in interpersonal activities with other members of that community.

Importantly, Vygotsky (1978) claims that the mediated nature of human action has important psychological effects. Specifically, he asserts that mediated sign usage enables humans to move beyond that which would be possible through biological development alone, to more advanced behavioural and psychological processes. Combined with tool usage, the use of signs in human activity is theorised to bring about higher forms of mental functions (Vygotsky, 1978). Although originally theorised in relation to specific higher psychological operations (e.g., attention, memory, perception), I argue that this principle may be drawn upon in understanding self-regulation and SRL as a higher psychological function that in turn may mediate or enable exceptional academic achievement. Following on from the aforementioned example then, a student's learning would not only be in response (R) to what is being taught (S), but could also be mediated with unfamiliarity of a word used by the lecturer (a sign), in combination with the student's use of an electronic search engine (tool) to become familiar with the word. In this example, the clarification of the word through the search engine would form part of the mediated learning activity.

Although some contemporary readings of Vygotsky (see e.g., Miller, 2011) infer that his original work advocated against the conflation of signs (or psychological tools) with technical tools (e.g., physical objects ranging from early human-made tools to contemporary devices such as computers and digital cameras), recent developments in sociocultural thought have certainly theorised along these lines. For example, Vygotskian influences inform activity theory (Engeström & Miettinen, 1999), yet a dominant feature of activity theory is a wider inclusion of both psychological and technical tools in understanding how the human mind (and behaviour) is mediated (Miller, 2011). Attempts at conceptualising exceptional academic achievement in contemporary South African higher education would probably benefit from a wider understanding of the concept of mediation, and in light of this, I suggest that cultural-historical activity theory (CHAT)²⁰ may offer a comprehensive framework for doing so. In addition, activity theory provides a mechanism for overcoming the individual–social separation often

²⁰ There are a variety of forms and permutations of activity theory. Although the terms “activity theory”, “cultural-historical activity theory”, and “CHAT” can be used interchangeably (Daniels, 2008), I will mostly use the term “activity theory” to refer to cultural-historical activity theory.

implicit in other psychological theories. Moreover, the theory facilitates the embodiment of culture and the individual in a historical, current, and on-going activity process (Van Vlaenderen & Neves, 2004), and may therefore represent a particular application of sociocultural thought that has relevance at multiple individual, social, historical, and institutional levels.

Although the phrases “cultural-historical”, “socio-cultural”, and “socio-historical” are frequently used interchangeably, the focus on cultural-historical for this thesis is intentional as it centralises cultural and historical processes in human activity and learning (Daniels, 2008). Given the centrality and relevance of culture and history in contemporary South African higher education (see section 1.2), it would be important to conceptually foreground these processes. Chaiklin (2001) identifies cultural-historical psychology as the term used by Vygotsky to describe his approach, defining this field as the “study of the development of psychological functions through social participation in societally-organised practices” (Chaiklin, 2001, p. 21). This is similar to the sociocultural conception of culture that was referred to earlier (see subsection 2.3.1), which highlighted a focus on interpersonal participation in social activities. In the current study, this was linked to a Vygotskian approach to conceptualising co-regulated (and adaptive) learning and exceptional academic achievement (to be discussed below, see subsection 2.3.3), this having particular importance for this thesis.

2.3.2 An overview of cultural-historical activity theory.

Three generations of historical and conceptual development of activity theory are relevant to highlight. Firstly, Vygotsky’s original triangular representation of a complex mediated act (see Figure 2-2) could be identified as a first generation of activity theory, a generation focused on the analysis of individual actions (Daniels, 2001a). Contemporary activity theory representations of Vygotsky’s original triangular representation are now commonly presented as “subject”, “object” and “mediating artefact” (see Figure 2-3). Here, the construct of subject could refer to an individual, and object to the goal or purpose upon which the subject acts or directs his/her action. Mediating artefact could refer to any relevant human product (or tool) and cultural system of meanings (or signs) that mediates the relationship between the subject and object (Daniels, 2001b).

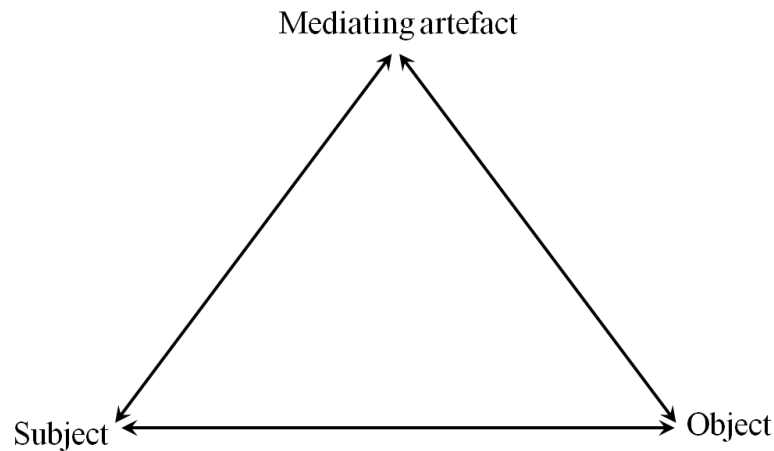


Figure 2-3. Reformulated conceptualisation of Vygotsky's complex mediated act

In the context of this study, academic activity (an object) may be mediated by various artefacts (e.g., daily planner, online tutorial, past examination paper) for a higher education student (subject). The above descriptions (and example) of Vygotsky's mediated triangle (and subsequent reformulations of this) are however, notably focused at the individual level of activity.

A second generation of activity theory (which moved the focus away from individual activity²¹) is frequently ascribed to the work of Aleksei N. Leontiev (Engeström, Miettinen, & Punamäki, 1999). A student and collaborator of Vygotsky, Leontiev's (1978) second generation of theorising began to distinguish different forms of activity, separating activity into individual action and collective activity. Leontiev's writings signal a move away from analysis of individual action, to a conceptualisation of and focus on collective activity as the unit of analysis. Engeström (1987) affirms this by claiming, "we may well speak of the activity of the individual, but never of the individual activity; only actions are individual" (p. 66).

²¹ In contrast, Kaptelinin (2005) asserts that Leontiev's version of activity theory was predominantly focused at the level of individual activity. He does, however, clarify that Leontiev also theorised the notion of collective activity, although given the application of this theory in the field of psychology, the focus on the level of individual activity and personality remained.

Leontiev (1978), in his consideration of the object as indicated in Figure 2-3, distinguished between the object of collective activity, and the goal of individual (or group) action. Specifically, individual actions are perceived to be driven by individual or group goals, where a student may for example study individually and/or in a group for a test (the action), this action being driven by the goal of passing the test. In contrast, collective activity (within which an individual's actions are embedded) is driven by an object (or motive). An example of collective activity could, for example, be the implementation of a formal academic support programme for a group of previously disadvantaged students, with the object (or motive) of contributing to a transformation agenda in higher education.

In addition to his elaboration of the constructs of object and goal, Leontiev (1978) also identified *operations* as the methods (falling under “individual actions”) that individuals may use in the pursuit of their goals. For example, some of the operations that students may employ in their actions could include drawing up a study schedule, summarising content, highlighting text, and memorising content. These operations are necessarily dependent on and driven by certain *conditions* (such as having access to the content that needs to be summarised or highlighted). Leontiev's (1978) extended notion of object-oriented collective activity has been represented in Figure 2-4. This representation positions condition-dependent operations, at the bottom of the hierarchical structure, with goal-directed action (by the individual or the group) above this. Object-oriented collective activity is positioned at the top of the hierarchy, this representing a social and cultural motive. Therefore, just as action is perceived as individual, and activity as collective, motivation is understood as an individual (or group-based) process while motive is positioned as being socially and culturally located (Wells, 2011). Fleer (2011) affirms the latter by suggesting, “every activity is driven by distinct motives and these motives do not arise from within, but rather are the objects of the material world” (p. 67).

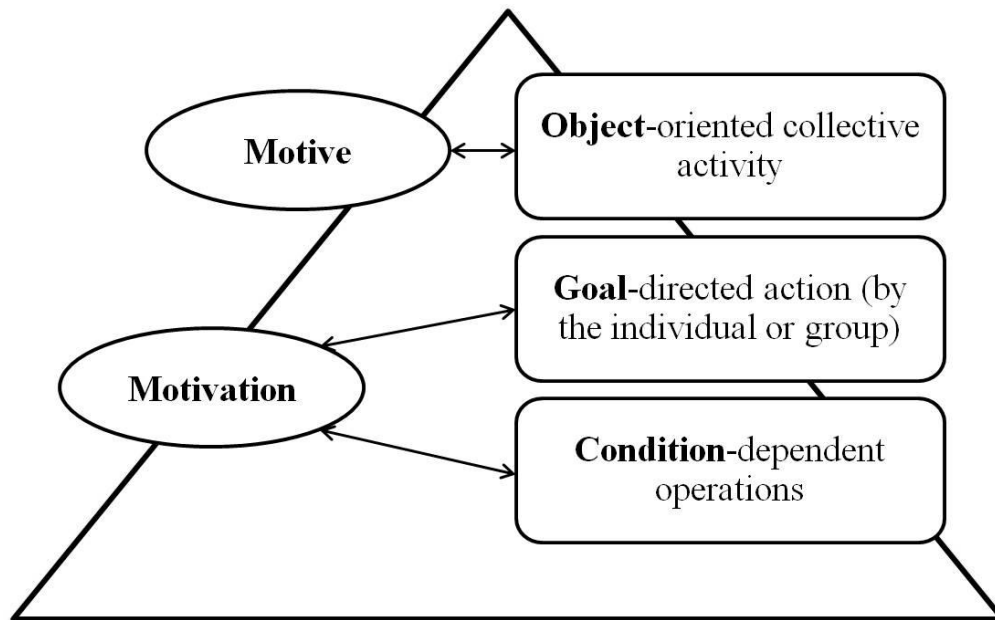


Figure 2-4. Leontiev’s object-oriented collective activity incorporating individual actions

Daniels (2001b) reinforces that the expansion of the concepts of goal and object signal a move towards object-oriented collective activity as a suitable unit of analysis. As identified above, this stance allows a move away from approaches that separate individual and social constructs. As a result, the phenomenon of exceptional academic achievement could then be understood from the perspective of collective activity (e.g., families, study groups, departments, institutions) directed towards academic achievement. Importantly though, individual actions and operations are necessarily perceived as being embedded within this perspective of collective activity, where the object (or motive) of academic activity that produces exceptional academic achievement would be perceived as existing in the external world (and not necessarily with an individual student’s operation, goal, and motivation).

Leontiev’s second generation of activity theory development (focusing on individual actions embedded within collective activity) provided a platform for a third level of development in the field of activity theory. Predominantly led by Yrjö Engeström, a researcher and theorist from Finland, the third generation of activity theory foregrounds the analysis of collective and institutional activity systems (Engeström & Miettinen, 1999). Whereas the first and second

generations of activity theory theorised individual and collective activity, Engeström's focus on activity is distinctly social and collective. Over the past two and a half decades, Engeström's work has progressively theorised a concept of activity that facilitates a macro analysis of community and institutional activities, within which a micro analysis of individual actions and activities may be embedded.

In particular, drawing on Marx's centrality of the division of labour in human society, Engeström (1987) proposed a third generation of activity theory which positions a layer beneath Vygotsky's original triangle of mediated action. Congruent with Marxist ideology, Engeström (1987) suggested that human activity is necessarily also mediated by a "division of labour", "rules", and the "community" within which the object-oriented activity occurs. Cole (2005) suggests that the "community refers to those who share the same general object" (p. 218), and in the context of academic achievement in higher education, this community could include a variety of people (family, lecturers, and peers). "Rules" refers to the customs and conventions that may guide individual actions and collective activity (e.g., rules for graduating *cum laude* or *summa cum laude*, rules for obtaining a distinction, norms and conventions for being awarded a certificate of merit or dean's commendation, and rules and norms for test and examination taking behaviour). "Division of labour" refers to the way in which the various community members may contribute towards the object-oriented activity (Cole, 2005). In the higher education environment for example, there may be debates around how the division of labour between student and lecturer should be negotiated. Figure 2-5 is a graphic representation of a human activity system as proposed by Engeström (1987, 1999a). The bidirectional arrows suggest a dynamic and iterative system, where a subject is understood in the context of object-oriented activity that is mediated by cultural or mediating artefacts (tools and signs). Importantly, the subject represents a collective subject that is modulated via a division of labour, systemic rules, and the community.

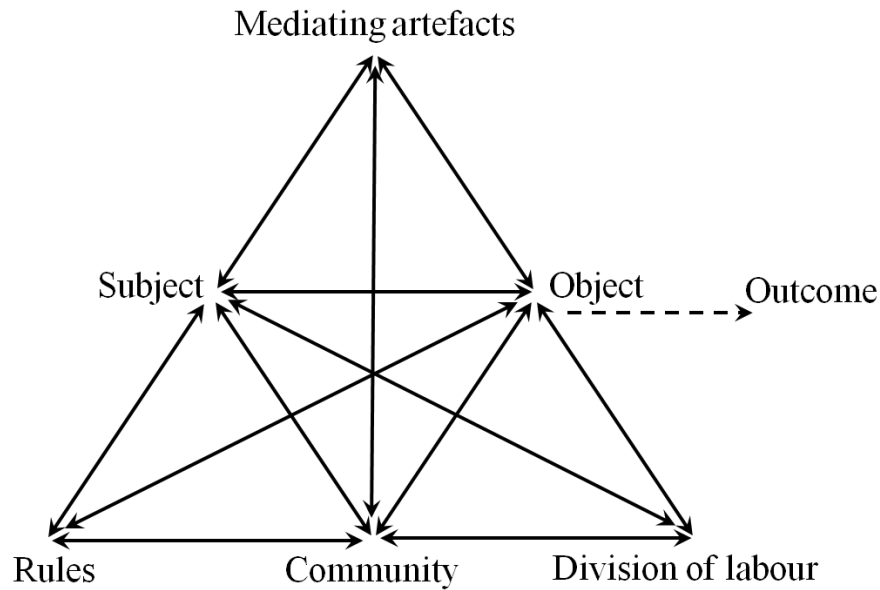


Figure 2-5. Proposed representation of human activity (adapted from Engeström, 1999a)

Although a dialectical relationship between the subject and object was advanced earlier when introducing sociocultural theory, it is necessary to reiterate this relationship within a specific activity system perspective. This is because the notion of object (specifically *Objekt*) could be further differentiated from the collective object (*Predmet*) of activity referred to above (Kaptelinin, 2005)²². From a contemporary cultural-historical activity theory perspective, the object (*Objekt*) can also be characterised as

The “raw material” or “problem space” at which the activity is directed and which is molded [*sic*] and transformed into outcomes with the help of physical and symbolic, external and internal mediating instruments, including both tools and signs. (Centre for Activity Theory and Developmental Work Research, n.d.)

In exploring the process of material (and psychological) production and activity, Marx and Engels (1968, as cited in Davydov, 1999, p. 40) originally conceived of the “object [of this production and activity] ... as an internal image, as a need, as an attraction and as a goal.” In

²² Kaptelinin (2005) identifies that *Objekt* and *Predmet* are Russian words, “both of which are typically translated into English as ‘object’” (p. 6).

other words, the object is that which can be acted upon and transformed in a space, this object possessing some “attraction” or “pull” for the subject. It is the attraction or pull that underlies the collective object (*Predmet*) of activity, and constitutes the *Objekt* or material space within which the activity occurs (Kaptelinin, 2005; Roth, 2013). In some ways, the object of activity is predominantly thought-oriented (ideal), whereas the *Objekt* is concrete (material).

Within cultural-historical activity theory then, the object and subject (and other components of an activity system) exist in dialectical interaction and relationship with each other (Roth, 2004). This dialectical relationship is further clarified by Engeström and Escalante (1996) in their description that –

Objects do not exist for us in themselves, directly and without mediation. We relate to objects by means of other objects ... this means that objects appear in two fundamentally different roles: as objects (*Gegenstand*²³) and as mediating artefacts or tools. There is nothing in the material makeup of an object as such that would determine which one it is: object or tool. The constellation of the activity determines the place and meaning of the object (pp. 361-362).

In application, the third generation of activity theory focuses on facilitating change, transformation, and development in a range of organisational and education contexts. This has involved the exploration of intersecting activity systems (Avis, 2009; Engeström, 2009a; Oswald & Perold, 2011; Warmington, 2011). In the context of higher education and exceptional academic achievement, the application of third-generation activity theory is likely to involve the analysis of multiple intersecting academic activity systems, and multi-institution studies at a national level.

The section above has introduced the constructs of activity theory as a particular sociocultural approach to understanding human nature and interaction at multiple individual, social, institutional and cultural levels. In particular, activity theory draws strongly on notions of

²³ *Gegenstand* refers to the German equivalent of *Predmet*, or object of activity (Roth, 2013). Reference to *Gegenstand* therefore is a reference to the collective object or motive of an activity.

dialectic and mediated activity, and provides a suitable lens through which academic activity in higher education could be conceptualised. I suggest that the lens is suitable because it facilitates a conception of human nature that moves beyond an individual–social dualism, which in turn may allow a synthesis between social cognitive and quantitative modes of representing (exceptional) academic achievement in higher education. From an activity theory perspective, seemingly individual “constructs such as motivation (and learning) cannot be distinguished from the larger realm of activity, and the individual’s activity cannot be distinguished from the larger sociocultural context” (McCaslin & Hickey, 2001, p. 242). Before considering contemporary trends and concerns in activity theory, a particular sociocultural application of motivation and self-regulation in the learning context is presented.

2.3.3 Sociocultural conceptions of self-regulated learning: Co-regulated learning.

Although the term self-regulation is still commonly used in sociocultural perspectives on learning, some researchers have suggested alternative terms such as “adaptive”,²⁴ “socially shared”, and “co-regulated learning”. These terms function to signify an assumed centrality of the social, dialectical, and mediated nature of self-regulation in learning environments.

As with the discussion on SRL from a social cognitive perspective (see subsection 2.2.1), it would be relevant to consider the construct of co-regulated learning in relation to several questions. In particular, it is important to define *what* co-regulated learning is, and in doing so identify its structure and function. This will also necessarily include reference to the motivational components of co-regulated learning. Finally, it will also be of value to consider *how* co-regulated learning is assumed to be acquired from a sociocultural perspective, and *why* it would be employed by high-achieving students. Responses to the latter two questions provide important insight into the ontological assumptions of a sociocultural perspective of co-regulated learning and exceptional academic achievement.

²⁴ Rohrkemper and Corno (1988) introduced the notion of “adaptive learning” as a phrase to describe what school learners from diverse backgrounds may need do to manage and adapt to learning situations that may be stressful. In addition, they proposed that adaptive learning involved a variety of skills and attitudes that could enable a student to achieve despite barriers to this achievement, stressing that it referred to a process of achieving.

2.3.3.1 The structure and function of co-regulated learning (what).

The phrase “co-regulation” in the learning environment appears to have been originally introduced by McCaslin²⁵ (1996, p. 14) to describe the interaction between student, teacher, and opportunity. Here, she represented co-regulated learning as “the link to eventual student ‘self’-regulation, a self-reliance within an identity of achievement” (McCaslin, 1996, p. 14).

McCaslin’s (1996) use of the term “co-regulation” emphasises relationships (and not individual efforts or knowledge transfer) in the learning and academic achievement process. She thereby initiates the possibility to theorise self-regulation from a perspective oriented towards a socially mediated and emergent identity. Recently, conceptions of co-regulation in the learning context extend beyond being a transitional phase towards SRL (as originally proposed by McCaslin (1996)), but highlight co-regulation as “the relationships among cultural, social, and personal sources of influence that together challenge, shape, and guide (‘co-regulate’) identity” (McCaslin, 2009, p. 137). In this way, co-regulation could be understood as three componential processes that may firstly lead to self-regulation, secondly serve as a mechanism for social and cultural participation, and thirdly represent an inherent component of emergent identity.

In further specifying the nature of co-regulated learning, Hadwin et al. (2011) refer to the central role of *emergent interaction* in the process. Originally referred to as *emergent interactionism* and used to describe the mediating and emerging interaction between thought and language development in children (Kohlberg & Wertsch, 1987), current conceptions of emergent interaction are broader and include the mediation, internalisation, and integration of social and cultural influences in the individual (McCaslin, 2009). McCaslin (2009) also claims that the construct of emergent interaction links early Vygotskian dialecticism (as used to understand the relationship between social and individual development) to neo-Vygotskian approaches, which centralise activity as the key unit of meaning and analysis. Resultantly, co-regulation of learning and the underlying construct of emergent interaction have important methodological and analytical implications. In addition to accentuating activity (and not individuals or social

²⁵ Mary M. McCaslin was previously known as Mary M. Rohrkemper (http://www.coe.arizona.edu/faculty_profile/270). The terms adaptive and co-regulated learning were thus introduced by the same theorist.

systems) as the unit of analysis and meaning, conceptualising exceptional academic achievement from a sociocultural approach and co-regulatory perspective would imply that –

... reports about self are not interpretable without a context of “perception of others” within which to analyse them; nor is a student’s specific intrapersonal approach and response apparent in a learning situation without understanding the interpersonal influences of home and school. (McCaslin & Hickey, 2001, p. 234)

McCaslin (2009) further specifies that emergent interaction implies “an evolving integration of self and other through engagement of activities that inform personal meanings – an emergent identity” (p. 137). Emergent interaction implies an on-going interpersonal, social, and cultural interaction which parallels a developing and emergent identity. Emergent identity therefore effectively underscores an identity that is outside of the individual and mediated within a dynamic social and cultural (and therefore historical) realm (McCaslin, 2009).

Earlier, Zimmerman and Campillo’s (2003) before, during, and after model was used to conceptualise a student’s metacognitive and behavioural processes involved in SRL. At this point, it is also useful to discuss a sociocultural model of co-regulation. In particular, a sociocultural model of co-regulation offers an alternative approach to understanding how self-regulation (or co-regulation) may (or may not) manifest itself in learning environments. McCaslin (2009) proposed a model of co-regulation of emergent identity to conceptualise how personal, social, and cultural influences may interact to co-regulate (or shape) an emergent identity. An emergent identity is central in a sociocultural perspective on SRL, as it directs a conceptualisation and analysis to include macro levels of social and cultural influence.

Figure 2-6 is a graphic representation of a co-regulation model of emergent identity, and depicts personal, social, and cultural sources of influence at the three points of the triangle. The figure positions emergent identity centrally, and as arising out of the individual’s participation and validation in the multiple sources of influence. However, it is not the sources of influence in themselves that co-regulate identity, but the “reciprocal press” between each source of influence (McCaslin, 2009, p. 141). It is suggested that the multiple reciprocal press processes provide

opportunities for student motivation in relation to learning and academic achievement (see subsection 2.3.3.1.1 below).

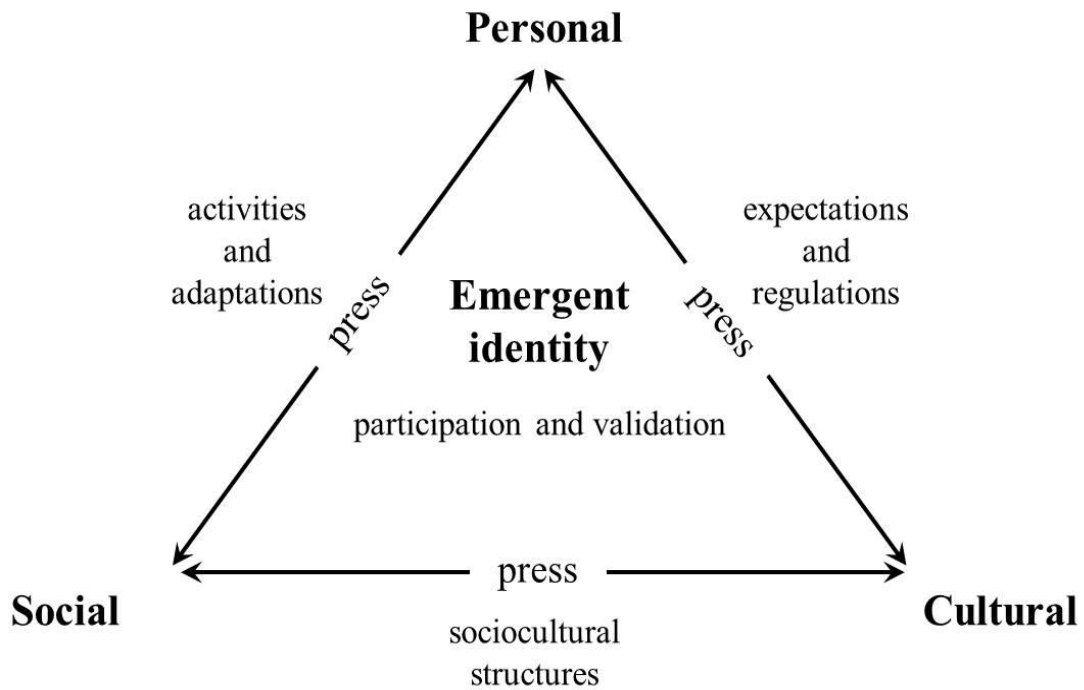


Figure 2-6. Co-regulation model of emergent identity (adapted from McCaslin, 2009)

Where personal sources of influence (the triangle apex in Figure 2-6) may include individual dispositions, it is only in tension with multiple social influences (the bottom left triangle point, including status in family, family arrangements, and schooling opportunities) and multiple cultural influences (the bottom right triangle point, including socio-political climate, institutional and national policies, and cultural power) that the notion of emergent identity and co-regulation of learning can be conceived (McCaslin, 2009). An example of a current South African cultural influence in the higher education context could include a vision for transformation as contained in the Department of Higher Education and Training's (2012) *Green paper for post-school education and training*. This national and institutional cultural influence may come into tension with certain social influences (such as differing gender expectations, poverty, and a history of

educational disadvantage). However, a sociocultural approach to SRL is likely to prioritise tensions such as these as relevant for conceptualising (exceptional) academic achievement in higher education.

2.3.3.1.1 *Motivation, motive, and co-regulated learning.*

In subsection 2.2.1.1.1, the notion of motivation from a social cognitive perspective was described as a central and integrated sub-process within SRL. Motivation was presented as an internal state, directed towards the attainment of individual goals and actions. In addition, motivational drivers of self-efficacy, outcome expectancy, task interest/value, and goal orientation were also introduced in the SRL process. From a sociocultural and activity theory perspective, Leontiev (1978) distinguished between motive and motivation when conceptualising individual action and collective activity. In this case, *motivation* was specifically located at the individual (or group) level, and was used to characterise the goals that may be aimed for during purposive action. In contrast, *motive* was understood as being aligned to the collective object-oriented activity of a social or cultural system (i.e., not individual action) (see Figure 2-4).

In further specifying the sources of motivation in learning contexts from a sociocultural perspective, McCaslin (2009) proposes three processes. Developed from the above-mentioned notions of emergent interaction, emergent identity and co-regulation, McCaslin (2009) refers to the constructs of “struggle”, “negotiation” and “opportunity” as three relevant processes, which are evident in generating motivation from a sociocultural and co-regulatory perspective. Whereas social cognitive motivational drivers mentioned earlier (i.e., self-efficacy, outcomes expectancies, task interest/value, and goal orientation) (see subsection 2.2.1.1.1) can be understood as internal qualities located within the individual, McCaslin’s (2009) constructs appear to predominantly describe phenomena that occur in the social and cultural world. In setting up her proposed sociocultural sources of motivation, McCaslin (2009) evaluates social cognitive approaches from the perspective that they rest on notions of choice and decisions that individuals may or may not make. She notes, however, that “learning requires opportunity and opportunity to learn to make choices is not equitably distributed” (McCaslin, 2009, p. 138). Without opportunity, there is no forum for motivation to develop. As discussed in Chapter 1 (see

section 1.2.1), educational opportunity in the South African higher education context has been unequally distributed in the past (Bunting, 1994). Despite attempts to remediate this, unequal education opportunities persist (CHE, 2013), and are likely to have an effect on individual opportunities to develop a sense of motivation for and in the learning environment.

In addition to acknowledging the role of opportunity in the development of motivation, McCaslin (2009) also recommends that researchers consider the role of struggle or conflict with everyday experiences (which may include relationships, circumstances or learning scenarios), and the way the processes involved in working through these struggles may (or may not) generate motivated action. The notion of struggle is certainly evident in the South African context, and notwithstanding circumstances that completely devastate opportunities for growth and development, experiences that allow an individual to grapple with challenges could be understood as potentially motivating and adaptive. This idea is consistent with the possibility for academic achievement in spite of (or even because of) challenge and struggle (Marshall & Case, 2010). Similarly, the construct of negotiation is also positioned within a conception of motivation from a co-regulatory perspective on SRL. Here, a student's experience of learning how to negotiate interpersonal and learning experiences may involve solving problems, and accepting outcomes where a compromise is required (McCaslin, 2009).

2.3.3.1.2 Specific co-regulated learning and motivation research.

Although there are a growing number of research studies that refer to and explore co-regulated learning, most of these still seem to be focused on a level of micro analysis of inter-individual learning processes, and how these processes may lead to SRL in the individual. For example, in the higher education context, Hadwin, Wozney, and Pontin (2005) studied lecturer-student interactions on a research portfolio task, specifically observing the gradual transition from co-regulation to self-regulation in the student. Similarly, in their study on the process of co-regulation, Volet, Summers, and Thurman (2009) analysed three groups of veterinary science students engaged in a group assignment. In addition to developing a system for identifying and

coding high-level co-regulation,²⁶ Volet et al. (2009) identified that high-level co-regulation was associated with higher academic performance. The micro analysis of inter-individual learning processes (co-regulation) as a path towards self-regulation is one approach to co-regulated learning, an approach that appears to assimilate social and shared interactions in the process towards self-regulation. I suggest that a possible problem of this approach is that it does not represent a far enough step away from conceptualising the individual as distinct from the social world. Indirectly, these studies imply absorption of the social into the self, then exploring how this may be used for the purposes of SRL and personal/academic gain.

Macro analytic approaches to co-regulation appear to be more widely focused on social and cultural influences, as well as personal influences (as proposed in the aforementioned model of emergent identity). For example, Stone and Gutiérrez, (2007), using activity theory as a methodological and analytic frame, engaged in both micro analysis of inter-individual problem-solving strategies, as well as a macro analysis of the culture of support offered by an after-school enrichment programme. The after-school enrichment programme referred to in Stone and Gutiérrez's, (2007) study was set up to enable collaborative learning between school children, teachers, and university graduates, and is an example of co-regulated learning environments. Finally, McCaslin and Burross' (2011) study on teacher-centred instruction was located in a school context undergoing educational reform, a context that also serviced students from poor backgrounds. The level of poverty was identified via the number of students receiving food assistance in a particular school. This study focused on multiple sources of influence (personal, social, and cultural) on co-regulation in the teaching/learning and academic achievement trajectory. The studies by Stone and Gutiérrez (2007) and McCaslin and Burross (2011) particularly exemplify a sociocultural approach to conceptualising and exploring co-regulation in the learning context. Although a relatively new and evolving approach, a sociocultural approach to SRL offers the opportunity to conceptualise and explain learning and academic achievement

²⁶ “High-level co-regulation” refers to co-regulatory processes that would enable high levels of content and/or cognitive processing. Therefore, fact sharing between peers for example may be useful in the co-regulatory process; however, it may not be of a high level if the fact sharing does not involve joint questioning, critique, and co-construction (Volet et al., 2009).

inclusively. This becomes particularly relevant in diverse contexts where collective identities are relevant, and transformation and equity are high priorities for development.

2.3.3.2 Ontological assumptions (how and why).

As mentioned in subsection 2.2.1.2, the contrasting positions on the acquisition, function, and purpose of SRL by social cognitive and sociocultural perspectives are relevant as they signal certain ontological assumptions and methodological implications. Whereas social cognitive views on SRL posit a gradual internalisation of self-regulatory strategies (i.e., from the social realm to the individual domain), sociocultural approaches offer a reciprocal internalisation process, thereby offering an account of SRL acquisition that evolves in the social realm. Whereas SRL acquisition from a social cognitive approach is theorised as a process of internalisation from the social to the individual level (Schunk, 2001), a sociocultural conception of SRL acquisition is “inherently social and interactional” (McCaslin & Hickey, 2001, p. 235). Drawing on notions of emergent interaction and identity as mentioned earlier, it is impossible to conceive of the individual without this being embedded in a social and cultural history. From a sociocultural perspective, therefore, I suggest that self-regulation is a misnomer of sorts as is the notion that it can be acquired. From a sociocultural perspective, self-regulation is perceived to exist in the social and cultural world in an on-going emergent process (McCaslin, 2009). McCaslin’s (2009) model of co-regulation of student motivation and emergent identity is an example of how a sociocultural conception of SRL can be materialised in the social and cultural world.

When considering the purpose and function of SRL, it is argued that from a social cognitive perspective, SRL functions to facilitate self-control and “personal freedom” (McCaslin & Hickey, 2001, p. 235), and to attain individual pursuits. From a sociocultural perspective, co-regulation may enable SRL, however it primarily functions to facilitate self-control to enable “socially meaningful activity” (McCaslin & Hickey, 2001, p. 235). The different roles and functions of self-regulation from social cognitive and Vygotskian theories are grounded in political ideologies (namely capitalist individualism and socialist collectivism), the latter holding particular appeal for critical, socio-cultural, and transformatory approaches to learning and achievement in higher education (CHE, 2010). It is this point that was centrally relevant for this

study on exceptional academic achievement in South African undergraduate higher education. Ontologically then, for the purposes of this study, (exceptional) academic achievement in South African higher education was understood as being the outcome of multiple activities that are historical, co-constructed, and socially meaningful.

2.3.4 Contemporary Sociocultural Concerns: Contradictions, Tensions, and Collective Emotions

In concluding the theoretical and conceptual framework for this study, it is relevant to highlight two themes within a contemporary activity theory and sociocultural approach of co-regulated learning. The first theme refers to the central importance placed upon contradictions and tensions in both activity theory applications and in McCaslin's (2009) model of co-regulated learning. In activity theory, it is assumed that activity systems are multiple and historical, and evolve over time in response to inherent contradictions and tensions within and between them (Engeström, 2009a). The second theme of contemporary relevance pertains to the role of emotions in activity theory (Engeström, 2009b), and in the relationship between emotion, motive, and motion/action (Roth, 2007, 2011). Each of these themes is now considered in relation to its potential role in conceptualising exceptional academic achievement in South African higher education.

The idea that contradictions and tensions in activity systems (reminiscent of dialectical thought and evident in Figure 2-5 via the multiple bidirectional arrows) serve as “the driving force for change and development” (Engeström, 2001, p. 135) is particularly important and relevant.²⁷ Engeström (2009a) also clarifies that contradictions are “historically accumulating structural tensions within and between activity systems” (p. 57). It is the inherent energy created by and through contradiction that enables movement and change. Similarly, Darwin (2011) reinforces that activity theory “understands social activity as an area of contest, tension and contradiction” (p. 222). In this way, activity theory provides a mechanism for overcoming the individual–social separation often implicit in other psychological theories, as it embeds culture and individual in a historical, current, and on-going activity process (Van Vlaenderen & Neves, 2004). I therefore

²⁷ Engeström's (1987, 1999a, 2009a) notion of internal contradictions as being a source for change and transformation was influenced by Ilyenkov's (1977) work.

argue that activity theory has the potential to provide a point of reference for conceptualising, analysing, and explaining exceptional academic achievement as a dynamic activity in higher education. In particular, I suggest that activity theory provides a mechanism to conceptualise activity in relation to exceptional academic achievement as not being constrained by the contradiction between notions of the individual and the collective, nor between equity and exceptionality. Similarly, McCaslin (2009, p. 139) develops the construct of the “press” between personal, social, and cultural sources of influence in the development of an emergent identity through the process of co-regulated learning. In this model of co-regulated learning, the “press” (or tensions) between various personal, social, and cultural domains is more relevant than the individual domains when conceptualising identity, learning, and academic achievement outcomes.

In tracing the source of contradiction in human activity, Engeström (1987) locates this source between collective social production and the independent (yet also subordinate) specific actions that exist within the collective. Resonant with an individual–social dialectic (and not an individual–social dualism), the primary contradiction in (and source of) human activity is historically located in Marxian critiques of capitalism (Engeström, 1987). Here, it is understood that a capitalist system is beset with inherent contradictions, the most pervasive of these pertaining to the “commodity” and the contradiction between its use-value and exchange-value. A commodity is anything that is produced by human activity (labour), and which can be sold or exchanged, and therefore has both use- and exchange-value (Marx, 1867/2010). Increasingly, higher education is being positioned as “an industry for enhancing national competitiveness and as a lucrative service that can be sold in the global marketplace” (Naidoo, 2003, p. 252). Although there are proponents who argue against this positioning (Tjabane & Pillay, 2011; Wood, 2010), the commodification of (higher) education can be seen in both contemporary and historical learning activities (Engeström, 1987). In tracing the cultural evolution of formal learning, Engeström (1987) locates the modern school-going object of learning as *text*, and relates text to the notion of commodity. Here, “text” refers to the transformed product of language and orality, and as “an autonomous, self-sufficient mode of existence” (Engeström, 1987, p. 110). Although in principle, text has the potential to facilitate critical, expansive, and

productive learning, the formal schooling context predominantly requires students to “modify and reproduce the given text” (Engeström, 1987, p. 114). Primarily through the processes of memorisation and recitation, it is possible that these processes result in static and non-expansive forms of learning outcomes. Engeström (1987) makes the commodification and contradictory nature of text evident when he argues

[f]irst of all, it [text] is a dead object to be reproduced for the purpose of gaining grades or other ‘success markers’ which cumulatively determine the future value of the pupil himself [*sic*] in the labor market. On the other hand, text tendentially also appears as a living instrument of mastering one’s own relation to society outside the school. In this respect, the school text possesses potential use value (p. 115).

In other words, an inherent contradiction in text can be located in the difference between its use- and exchange-values. Text can be reproduced by students in learning environments, and this reproduced text can then be “exchanged” for grades (i.e., the exchange-value of text). In contrast, the use-value of text can extend beyond the immediate schooling context to having a larger social and cultural utility. The inherent contradiction within the use- and exchange –value of exceptional academic achievement (grades/marks) is therefore relevant from an activity theory perspective, and has the potential to bring to light the larger social, political, and economic implications associated with this level of achievement.

Four levels of contradiction are identified from an activity theory perspective, namely primary, secondary, tertiary, and quaternary contradictions. Primary contradictions are those that occur within system components, pervading “all elements [components] of our activity systems” (Engeström, 2001, p. 137). Secondary contradictions occur between the components of an activity system (e.g., between the rules and the community), often as a result of the introduction of a “culturally more advanced form” (Engeström, 1987, p. 103) of activity into a system. The introduction of a culturally more advanced form of activity is understood as a tertiary contradiction. For example, the introduction of technology into higher education (and all forms of human existence for that matter) has undoubtedly elicited secondary contradictions between multiple components of higher education systems (Madyarov, 2008). In some instances,

technological advances in higher education have led to the establishment of online learning modalities, which have modified the rules of interaction between student and lecturer (community). It is likely that students and lecturers who are required to adapt to the culturally more advanced form of activity will experience a series of contradictions and tensions (e.g., between the rules of engagement, and the community who participate in this engagement). Although this contradiction between the rules and the community of the higher education system is likely to be a source of much frustration, the contradiction is also perceived to have the potential to initiate major change in the system, especially in the way in which it produces academic outcomes.

What constitutes a culturally more advanced form of activity is subjectively determined, however, Leontiev (1977/2009) provides a foundational example in the education context when he refers to the changing forms of activity observed during the transition from pre-school to formal schooling. Here, teachers (and parents/caregivers) gradually substitute a focus on play activity in pre-school, with a focus on learning activity in formal schooling. In comparison to play activity, learning activity is perceived as being culturally more advanced, and this is introduced during formal schooling years by representatives of culture. Representatives of culture are diverse, however in the educational context, they are likely to include both those who operate at policy level (e.g., through devising national curriculum policies and statements), as well as those who implement the “more advanced” forms of cultural activity (e.g., through teaching, parenting, and caregiving). As mentioned above, the introduction of a more advanced form of activity into an activity system may result in secondary contradictions between existing components of the system. In the formal schooling context, the rules and norms require learners to sit primarily at desks and engage in learning activity, this probably coming into stark contradiction with the norms and rules associated with play (learning) activity during pre-schooling. Although this is conceptualised as a contradiction and disturbance in activity theory, the contradiction is also conceptualised to have innovative potential (Engeström, 2001). Finally, quaternary contradictions from an activity theory perspective occur between activity systems, acknowledging the intersecting role that neighbouring (and multiple) activities and activity systems may have on the central theorised activity (Engeström, 1987).

The relevance of the second concern for contemporary activity theory work (i.e., emotions), is exemplified via two recent (2013) special issues in *Mind, Culture, and Activity*.²⁸ These special issues published several empirical and conceptual articles on the topic of emotion²⁹ in activity theory, many of which focus on the regulatory role and reflective nature of emotions in activity theory and activity systems. Interestingly, Vygotsky did not fully explore the role of emotion in learning and thought processes (DiPardo & Potter, 2003); however he did note that “[t]hought is engendered by motivation, i.e., by our desires and needs, our interests and emotions. Behind every thought there is an affective-volitional tendency, which holds the answer to the last ‘why’ in the analysis of thinking” (Vygotsky, 1986, p. 252). Similarly, although activity theory “assigns a central role to emotions” (Holodynski, 2013, p. 4), there has not been a considerable focus on the topic. In considering this central role, it is relevant to note that (collective) emotions firstly serve an important regulating function in collective human activity, and secondly, emotions are also reflections of collective human activity (Holodynski, 2013). In essence then, emotions both regulate and reflect collective human activity. This position is informed by Leontiev’s (1977/2009, 1978) work, and exemplified in his statement that “[e]motions are not subordinated to activity but appear to be its result and the ‘mechanism’ of its movement” (Leontiev, 1978, p. 120). This position is also evident in contemporary discussions in this area. Roth’s (2007, 2011) recent research, for example, brings to the fore the “sensuous aspects of work³⁰ into the unit of analysis” (Engeström, 2009b, p. 307), including emotions as exemplars of what may be considered sensuous. In further advancing Leontiev’s (1978) position on the regulatory function that emotion plays in collective activity, Holodynski (2013) clarifies that emotions “signalize the personal sense of one’s own and others’ actions, thereby making emotions constitutive for activity regulation as a whole” (p. 4). Importantly then, although individuals may experience

²⁸ See *Mind, Culture, and Activity*, 2013, Volume 20, Issue 1 (Part 1), and Issue 3 (Part 2).

²⁹ I use the phrases “emotions” and “collective emotion” interchangeably in this thesis. On the whole, however, “emotions” refers to the collective emotion evident within an activity system, and not necessarily within an individual.

³⁰ The focus of Roth’s (2007) research is in the domain of work or employment activity in adulthood. However, I assume that educational activity in childhood/young adulthood is parallel to work or employment activity in adulthood.

emotions, the reflective nature of emotions and the regulatory role that emotions play in collective activity are of primary relevance for activity theory.

In further explicating the relationship between emotion, motive, and motivation, Wells (2011) suggests that when there is congruence between the motive of the collective activity (i.e., learning, schooling, academic achievement) and a student's individual motivation, the student is likely to feel compelled to engage in actions that generate positive learning outcomes. Wells (2011) goes on to suggest that although many students may grasp the long-term benefit of extended years of education, several "are unable to find personal relevance in many of the activities in which they are currently required to engage and so are not *emotionally* [emphasis added] committed to them" (p. 92). Wells' (2011) reference to emotional (affective) commitment within the motivational and learning process relates to Roth's (2011) assertion that "thought cannot be understood unless its affective-volitional dimension is known" (p. 45). In tracing the relationship between emotion, motivation, and motion/action, Roth (2011), suggests that any organism inherently values both internal and external living conditions. If something has value (e.g., food, safety, education, educational outcomes), it necessarily has an emotion attached to it (e.g., positive or negative). Where there is emotion, there is motive to move (motion/action). Valuation is the basis of emotionality, which in turn compels some form of motive (or motivation) for motion (action or activity) (Roth, 2011; Wells, 2011). Similarly, I suggest that emotions could serve as a potential link between activity system contradictions and tensions, and motion. It is possible that what underlies the inherent energy arising from a contradiction is a collective emotion, which in turn serves as the foundation for motion (and eventual change and transformation) (Roth, 2011; Wells, 2011).

Overall, given the above underlying assumptions, it appears as though sociocultural approaches to conceptualising human activity and learning (and exceptional academic achievement) may offer a more holistic and integrated stance in comparison to approaches that emphasise quantitative representations or social cognitive explanations. This is because the latter approaches still inadvertently seem to emphasise the individual (or the self-contained self) in the exceptional academic achievement trajectory. Sociocultural approaches may offer an opportunity

to represent and synthesise human beings and human activity concurrently as socially, culturally and historically situated, inherently contradictory, and emotionally reflected and regulated.

2.4 Concluding Remarks

Chapter 2 (section 2.2) firstly explored the dynamics pertaining to the representation, conceptualisation, and potential explanation of the phenomenon of exceptional academic achievement in South African higher education from social cognitive framework. Section 2.3 presented the representation, conceptualisation, and potential explanation of the phenomenon from a sociocultural and activity theory framework. Transformation and equity concerns necessarily involve a critical awareness beyond the individual pursuit of exceptionality, and a sociocultural framework is positioned to offer a complementary and synthesising perspective on materialising exceptionality alongside equity. While social cognitive perspectives place emphasis on individuals excelling (even through the help of others), socioculturalism enables a stance where notions of individual and collective can be disrupted and thus integrated into a dynamic and transformative process of collective exceptionality. Having contextually and conceptually grounded this study on exceptional academic achievement in South African higher education, the following part (and chapter) of this thesis provides a detailed description of the methodological considerations, and research design and processes employed during the current research study.

Part 2. A Method for Profiling and Exploring Exceptional Academic Achievement

Chapter 3. Methodology: Contexts, Concepts, and Methodological Processes

Chapter 3. Methodology: Contexts, Concepts, and Methodological Processes

3.1 Introduction and Overview of Chapter

In the previous chapters, the phenomenon of exceptional academic achievement in South African undergraduate higher education was explored from different contextual and conceptual frameworks. Integrated within this exploration was a review of relevant literature pertaining to (exceptional) academic achievement in higher education. In addition, the inherent ontological and epistemological assumptions that underpin these conceptual frameworks were identified, and in Chapter 3, these assumptions are now highlighted in relation to their consequent methodological implications. Chapter 1 referred to the development of a historical-contextual framework for academic achievement in South African higher education. Implicit within this framework were quantitative representations of academic achievement in higher education, and these highlighted the persistence of socio-demographic and educational factors in academic achievement trajectories of higher education students. Despite being grounded in a positivist paradigm, the possible critical and transformative role that quantitative approaches could play in South African higher education was also highlighted. In Chapter 2 (section 2.2), a social cognitive framework to learning and exceptional academic achievement was discussed. Although social cognitive approaches to learning do incorporate a social element to learning, it was argued that this social element appears to be secondary to individual students' efforts in their learning outcomes. In section 2.3 of Chapter 2, a sociocultural framework was presented, and activity theory was positioned within this framework as a stance that could enable a broader conceptualisation of exceptional academic achievement. It was suggested that the latter conceptualisation could synthesise constructs of individual, society, and culture more adequately than a social cognitive framework, and that this was therefore more suitable to the current South African context.

Chapter 3 has six purposes. Firstly, the chapter specifies relevant methodological considerations in relation to the contextual, conceptual, and theoretical frameworks referred to in the previous chapters. Secondly, the rationale for a study on exceptional academic achievement in South African higher education will be reiterated, and then the research questions that arose from this

rationale are presented. Thirdly, the rationale for a mixed methods approach as a suitable methodology in response to the research questions and the theoretical and conceptual considerations are presented. Specifically, mixed methods approaches that foreground a dialectical stance and current conceptions of critical dialectical pluralism are discussed. Fourthly, the research processes (methods) employed during the current study, including a description of the analytic processes engaged in, are described. The management of certain ethical issues pertaining to the research processes is described in the fourth section of the chapter; and a specific fifth section covers overarching ethical considerations. Finally, Chapter 3 concludes with a section on the quality and credibility of mixed methods research. Discussion around the limitations of the study is integrated throughout the entire chapter.

3.2 Contextual and Conceptual Frameworks: Methodological Considerations

The historical-contextual framework presented in Chapter 1 referred to the use of quantitative approaches to represent academic achievement in South African higher education. In concluding this chapter, it was identified that there did not appear to be any specific quantitative representation of exceptional academic achievement, and that this was therefore a gap in existing research. Given the social, cultural, and critical foundation of the historical-contextual framework presented in Chapter 1, and South Africa's current transformation agenda, it was suggested that an orientation to and awareness of a quantitative criticalist perspective (Stage, 2007) was warranted (see subsection 1.2.2). An awareness of critical quantitative methodological principles is therefore necessary because, consistent with a critical theory paradigm, it would be important to be attuned to representations of inequity as well as of possible methodological moves that may stimulate action against such inequity (Guba & Lincoln, 2008).

Importantly, Stage (2007) suggests that critical theory should not necessarily be viewed as a unified theory, as many theorists who have been identified as critical (e.g., Marx, Kant, Hegel, theorists from the Frankfurt School, Foucault, Habermas, Freire, Bakhtin, and Vygotsky) also differ on important philosophical issues. However, certain dominant principles and assumptions are evident from a critical theory perspective, the first pertaining to the presumed existence of power relationships that are perceived to dominate the construction and maintenance of society.

Second, critical theorists are likely to advocate that the aforementioned power relationships should be critically analysed and exposed (Stage, 2007). Third, a major focus of critical theory (or at least critical research) would necessarily include the reduction of inequalities across a range of human domains (e.g., race, gender, age, and educational attainment) (Johnson & Gray, 2010). Stage (2007) asserts that, although the majority of critical research is conducted primarily through qualitative approaches, certain principles and assumptions of critical theory and research (as identified above) do not disqualify quantitative methods as viable strategies for interrogation within this frame.

Kincheloe and McLaren (2008) identify seven basic assumptions that a critical researcher or theorist would probably incorporate –

- the first assumption reiterates the aforementioned reference to the assumed (or recognised) omnipresence of power relationships in all aspects of human structure and activity;
- critical theorists recognise the interrelationships between facts and values and how these are positioned within forms of “ideological inscription” (Kincheloe & McLaren, 2008, p. 405);
- critical theorists are likely to accept the instability of the relationship between concept and object and that between signified and signifier;
- these theorists are also likely to acknowledge the central role that language plays in individuals’ awareness of themselves and of others;
- it is also assumed that certain social groups are afforded more privileges than others, and that these privileges are more extreme where those who are less privileged are complicit and accepting of the status quo;
- critical theorists recognise that oppression is manifest in multiple forms (e.g., through socio-economic status, race, gender, educational attainment); however, they also identify that these manifest forms of oppression are highly interconnected; and
- critical research assumes that on average, mainstream research approaches reproduce and reinforce oppressive social and cultural systems.

I suggest that the last assumption is also most often associated with mainstream positivist (and postpositivist) research approaches which have predominantly used quantitative methods.

Four methodological considerations (from a critical theory paradigm) are necessary to highlight in critical quantitative research. Firstly, an awareness of Marxian dialectical notions of contradictions, reciprocity, co-determination, and co-construction is important (Hayes, 2004). These critical and Marxian notions were therefore important to integrate methodologically in the current study of exceptional academic achievement in South African higher education. Secondly, critical research places an importance on narratives, and in particular counter-narratives (Andrews, 2004). Defined as “the stories which people tell and live which offer resistance, either implicitly or explicitly, to dominant cultural narratives” (Andrews, 2004, p. 1), counter-narratives are relevant in critical research in that they voice the stories of people who are typically disempowered or under-represented in human systems. Thirdly, critical paradigms also imply researcher reflexivity in the research process (Lather, 1986), which involves an awareness of power differentials, the researcher’s role as mediator in producing, analysing, and interpreting the data, the way this may influence the process and participants, and the way the process and participants may influence the researcher. A fourth important point for research of a critical orientation pertains to the issue of knowledge dissemination and feedback of results to participants (Macleod, 2004). In particular, Macleod (2004) comments that critical research findings should be redirected back to the participants, as well as be directed towards publications that function to empower and transform.

Chapter 2 included an exploration of a social cognitive framework for representing and explaining exceptional academic achievement in higher education. In particular, SRL was highlighted as an explanatory process that could yield exceptional academic results in students. Informed by a positivist orientation and an ontological assumption that individual cognitive structures and processes exist and can be uncovered, most social cognitive research on SRL relies upon experimental and quasi-experimental methods (Hadwin et al., 2011). In line with this,

several self-report instruments³¹ have been developed and validated, while other methodological innovations have included the micro analysis of think-aloud protocols (Azevedo, Cromley, & Seibert, 2004), student diaries, and computer trace data (Hadwin, Nesbit, Jamieson-Noel, Code, & Winne, 2007). In effect, methods within a social cognitive approach seem to have generated extensive information around how exceptional academic achievement could be attained and managed; however, they seem to have gravitated around the primacy of individuals in working towards or facilitating this attainment (Hadwin et al., 2011).

In section 2.3 of Chapter 2, a sociocultural framework for conceptualising exceptional academic achievement was presented as offering an opportunity for synthesising individual, social, and cultural domains of learning and academic achievement. In addition, this framework was positioned as compatible with the equity and quality agenda evident in contemporary South African higher education. The origins of socioculturalism were ascribed to Vygotsky (Göncü & Gauvain, 2012), and a current articulation through activity theory was described. Finally, a sociocultural approach to co-regulated learning was identified as a lens through which exceptional academic achievement in South African higher education could be viewed. The specific methodological considerations that arise from a sociocultural and activity theory framework are considered below.

As the sociocultural tradition is strongly rooted in Vygotskian principles (Göncü & Gauvain, 2012), it is important to identify key methodological principles evident in Vygotsky's writings. In addition to emphasising a dialectical approach to inquiry (as described in section 2.3), Vygotsky (1978) identifies three other methodological and analytical principles that were of relevance for the study of higher psychological functions. These included a focus on processes and not objects, explanations in addition to descriptions, and the development (and developmental analysis) of a phenomenon. In linking these three principles, "Vygotsky argued that rather than deriving explanations of psychological activity from the individual's

³¹ See, for example, the Motivated Strategies for Learning Questionnaire (Pintrich, Smith, Garcia, & McKeachie, 1991), the Metacognitive Awareness Inventory (Schraw & Dennison, 1994), and the LASSI (Weinstein, Schulte, & Palmer, 1987).

characteristics, the unit of analysis should be the individual engaged in social activity” (Tudge & Winterhoff, 1993, p. 66). In essence, sociocultural approaches are aligned with a methodology that accentuates the explanation of processes in dynamic social, cultural, and historical activity.

An additional and related sociocultural methodological consideration includes the importance of finding ways to generate and account for more than one domain of human behaviour (i.e., individual, social, and cultural domains) (Göncü & Gauvain, 2012). For a sociocultural study on exceptional academic achievement in higher education then, it was important to move beyond individual explanations of exceptional academic achievement, and integrate social, cultural, and historical components of this exceptionality. Wertsch (1995) further reinforces that “the goal of such [sociocultural] research is to understand the relationship between human mental functioning, on the one hand, and the cultural, historical, and institutional setting on the other” (p. 56). In addition, Schoen (2011) argues that “sociocultural approaches often seek to reconcile disjoint, but relevant theories by recontextualising and defragmenting what is known about human motivation and ...subsequent learning and behaviour” (p. 16). As a result, sociocultural approaches tend to adopt a dialectical stance, this often being materialised through mixed methods.

As there is not a unified body of literature describing an activity theory methodology, two ontological and epistemological assumptions inherent in activity theory are identified below. These assumptions allow for a description of relevant methodological points that were incorporated into this study. Firstly, activity theory is grounded in a non-dualistic (and dialectical) ontology (Yanchar, 2011) which operates from the assumption that human behaviour and higher psychological processes (such as those directed towards academic achievement) are intimately connected to society and social processes. Methodologically, this implies the “study of the human mind in its cultural and historical contexts” (Holzman, 2006, p. 6). Given the critical and Marxist roots of activity theory, power relationships and intra- and inter-activity system tensions and contradictions should be seen as central to social change and transformation. A key epistemological feature of activity theory is the centrality of collective activity, and not individual action (Engeström et al., 1999). Grounded in Leontiev’s (1978) work, current

conceptions of activity theory highlight collective activity systems as epistemic paths. From an activity theory framework then, it was envisaged that exceptional academic achievement would not necessarily exist within the individual or in the context within which the individual operates and creates, but rather in the dialectical processes within and between these. This had important consequences for what was perceived as a suitable unit of analysis for research grounded in activity theory (see subsection 2.3.2). Similar to the aforementioned sociocultural unit of analysis being identified as the individual engaged in social activity, Engeström (2009a) argues that “a collective, artifact-mediated and object-oriented activity system, seen in its network relations to other activity systems, is taken as the prime unit of analysis” (p. 56). Engeström (2009a) goes on to further clarify that individual actions are not overlooked in the unit of analysis, but that “goal-directed individual and group actions, as well as automatic operations, are relatively independent but subordinate units of analysis, eventually understandable only when interpreted against the background of entire activity systems” (p. 56).

Three additional activity theory inspired methodological manifestations are relevant to highlight for the purposes of this study. Firstly, Wardekker (2000) notes that both quantitative and qualitative methods have applicability in the activity theory paradigm because neither undermine its ontological and epistemological assumptions. In commenting specifically on the use of numerical data in examples of Engeström’s activity theory research, Yanchar (2011) refers to the idea of “practical discourse” (p. 181). Defined as “the language within which and through which we live experience” (Williams, 1990, p. 147), practical discourse often justifies the use of textual and other qualitative data forms in research. However, Yanchar (2011) contends that contemporary practical discourse does not exclude certain contextually appropriate numerical forms. This is certainly so in the domain of undergraduate academic achievement in higher education, where numerical representations feature predominantly as indicators of academic achievement. Yanchar (2011) reinforces this with specific reference to a hypothetical study of students’ academic experiences and numerical data such as (among others) marks, rankings, and personal and family history denominators that he identifies as part of the everyday language and practical discourse of that context.

Secondly, contemporary research using an activity theory framework seems to apply predominantly qualitative techniques within interpretive and humanistic paradigms (see journal of *Mind, Culture and Activity*). In addition, it is observed that the case study method is commonly used in activity theory based research (Coggio, 2010; Warmington, 2011), this being perceived as consistent with the philosophical underpinnings of activity theory. Case study research can be described as

a qualitative approach in which the investigator explores a bounded system (a case) or multiple bounded systems (cases) over time, through detailed, in-depth data collection involving *multiple sources of information* (e.g., observations, interviews, audio-visual material, and documents and reports), and reports a *case description* and *case themes*. (Cresswell, 2013, p. 97)

Cresswell (2013) suggests that case study research is suitable when a researcher requires in-depth understanding of a particular phenomenon, and there are identifiable instances of this phenomenon. Methodologically then, the activity theory framework and case study method implied that the unit/s of analysis for aspects of the current study were the activity and activity systems of exceptional academic achievement in higher education.

Thirdly, the dialectical relationship between the researcher and participant, the research tool and resultant research data, and research and intervention should be highlighted in activity theory related research. Developmental Work Research is an application of a CHAT-inspired interventionist research approach that involves context specific change and transformation (Engeström, 2005). The aim and focus of Developmental Work Research are on active participation (between researcher and participant), the introduction of stimuli into the research activity (research tool and resultant data), and the identification and implementation of activity systemic change (Edwards & Fox, 2005; Ellis, 2008). Similarly, described within the domain of participatory research and grounded in Vygotskian principles, Van der Riet (2008) highlights the relevance of visual research methods in research activities. Focusing on the joint construction of diagrams and maps by research participants, Van der Riet (2008) discusses how the activity of these constructions has the potential to mediate individual, social, and institutional change. Other

visual research methods (including auto-photography and Photovoice) have also been used as research tools and research data, and analysed via an activity theory inspired framework (O'Brien, Varga-Atkins, Umoquit, & Tso, 2012; Pearson & Ralph, 2007).

3.3 Rationale, Research Questions, and Unit of Analysis

The rationale for this study lay within both the historical-contextual framework (presented in Chapter 1) and the conceptual frameworks presented in Chapter 2. Specifically, the study offered an attempt to complement the contextual and conceptual themes that have dominated research and practice in the domain of learning and exceptional academic achievement in South African higher education. Moreover, it filled a gap in the South African higher education sector, choosing to focus on exceptional academic achievement.

In Chapter 1, a historical-contextual framework of South African higher education was developed. Although the current and historical focus on access, disadvantage, and retention and throughput were necessary, they appear to have overshadowed exploration of the phenomenon of exceptional academic achievement in higher education (see subsection 1.2.2). It is suggested (Rivera, 2005) that an understanding of exceptional academic achievement could contribute to themes of access, disadvantage, and retention and throughput, largely because such an understanding may offer insight into these themes from an alternative strengths and success perspective. This is because an understanding of what brings about exceptionality in the current South African higher education context could inform strategies to boost the performance of those who do not excel. In summary, the current and historical contextual themes are seemingly focused on deficits and underperformance, and provided a rationale for a contrasting study on strengths and exceptional performance. As mentioned above, Chapter 2 traced two conceptual frameworks for representing and explaining exceptional academic achievement in higher education. In addition to locating this study theoretically and conceptually, these frameworks also provided a rationale for the approach taken in this study.

Informed by the above contextual and conceptual frameworks, the research process was concerned with questions of who, how, and why. Firstly, questions around who is most likely to

excel academically in undergraduate education became relevant to ask. However, given the critical quantitative stance adopted, it was perhaps more important to also discover the converse. In this way, the first research question also inversely asked who is unlikely to excel, or who is underrepresented in the cohort of exceptional academic achievers. The research process was secondly concerned with the question of how students who were unlikely to excel or who were underrepresented in the exceptional group nonetheless excelled. In other words, what did students who were underrepresented in the exceptional academic achievement group do in order to excel? Thirdly, it became relevant to ask why students who were unlikely to excel, nonetheless excelled. The questions mentioned above (of who, how, and why) resonate with the three dominant contextual and conceptual frameworks presented in the previous chapters. The first question responds to the need to profile exceptional academic achievement in South African higher education, and the second and third questions respond to the social cognitive and sociocultural frameworks for explaining how and why unlikely or underrepresented examples of exceptional academic achievers nonetheless excel. Consistent with a sociocultural framework (and critical paradigm) in particular, the latter two questions are most concerned with that which is non-dominant and/or underrepresented.

The research questions (and sub-questions) for this study were:

- 1) What is the profile of academically exceptional undergraduate students in South African higher education?
 - a) Who are these students when considering variables³² of race, gender, language proficiency, matriculation score, degree/discipline, and financial aid status (inferred socio-economic status)?
 - b) Which of these variables are and which are not predictive of or associated with exceptional academic achievement?

³²Sociocultural and educational “variables” such as race, gender, and educational background are not ontologically perceived as static phenomena, but rather as dynamic cultural domains that may interact during the pursuit of exceptional academic achievement (CHE, 2010). Nonetheless, these variables are recognised as part of a contextual and educational transformation discourse in South African higher education, and it was therefore necessary to incorporate them as static constructs. Therefore, static classifications of these phenomena formed part of the initial phase in this study, and were used as part of a purposive sampling technique for the second and third phases.

- 2) *How* do unlikely or underrepresented examples of academically exceptional undergraduate students in South African higher education (i.e., students who do not fit the profile of exceptional academic achievement) achieve academic exceptionality? Specifically, ...
 - a) What strategies do underrepresented examples of academically exceptional undergraduate students use to achieve academically exceptional results?
 - b) What processes or structures are underrepresented examples of academically exceptional undergraduate students exposed to or engaged in?
- 3) *Why* do unlikely or underrepresented examples of academically exceptional undergraduate students in South African higher education (i.e., students who do not fit the profile of exceptional academic achievement) achieve academic exceptionality? Specifically, ...
 - a) What motivates underrepresented examples of academically exceptional undergraduate students to excel academically?

In line with a sociocultural framework, the unit of analysis for this study was identified as several dynamic and intersecting academic activity systems that were oriented towards outcomes of exceptional academic achievement in South African undergraduate higher education.

3.4 Mixed Methods Rationale and Critical Dialectical Pluralism

Mixed methods research involves the production, analysis, and interpretation of both quantitative (categorical) and qualitative (textual) data during the research process (Teddlie & Tashakkori, 2010). A mixed method strategy for this study was employed for three reasons. Firstly, the primary and grounding theoretical and conceptual framework for this study (i.e., socioculturalism and activity theory in particular) is inherently dialectical, and therefore lends itself comfortably to a methodology that mixes quantitative and qualitative research approaches. Secondly, mixed method designs have the potential to initiate new insights from the identification and exploration of “contradiction and paradox” (Greene, Caracelli, & Graham, 1989, p. 260). The current study aimed to identify and explore unlikely or underrepresented examples of exceptional academic achievement, and it was reasoned that these examples could be best isolated via quantitative methods, and then explored through qualitative processes. Collins, Onwuegbuzie, and Sutton (2006) describe the aforementioned methodological technique

as a “significance enhancement” (p. 92) strategy, and in particular describe the process of “qualitative residual analysis” (p. 85), where outliers (cases that are not predictive of a particular model) are purposely sampled to expand upon a phenomenon. Thirdly, as researcher, I wanted to establish multiple and intersecting theoretical and methodological activity systems, which would also be likely to operate in dialectical tension with each other. This is consistent with Engeström’s (1987) notion of expansive learning, which conceptualises the “developmental transformations” (p. 7) that individuals may embark on when faced with tensions, struggle, and contradiction. Incorporating both quantitative and qualitative modes would enable me to materialise a unit of analysis that was “collective, artifact-mediated and object-oriented ... [and] seen in its network relations to other activity systems” (Engeström, 2009a, p. 56).

At present, there are multiple intersecting typologies of mixed method designs, as well as 13 philosophical stances that commonly underpin mixed method research (Onwuegbuzie & Frels, 2013). Given the ontological and epistemological positions discussed above in relation to the contextual and conceptual frameworks, this mixed method study was informed by what has now come to be described as a *critical dialectical pluralist stance*. Although referring back to her original conception of mixed method research in general, Greene (2007) later specified that a mixed method dialectic stance is aimed at generating

understanding that is woven from strands of particularity and generality, contextual complexity and patterned regularity, inside and outside perspectives, the whole and its constituent parts, change and stability, equity and excellence and so forth. That is, a mixed method [dialectical stance] ... seeks not so much convergence as insight ... the generation of important understandings and discernments through the juxtaposition of different lenses, perspectives, and stances; in a good mixed methods study, difference is constitutive and fundamentally generative. (Greene, 2005, p. 208)

In essence then, a dialectical stance within mixed methods research encourages dialogue between different paradigms and methods, and the combination of stances and methods that respond best to the research questions. In furthering a research philosophy based on Greene’s (2007) dialectical mixed method stance and Johnson’s (2012) notion of dialectical pluralism,

Onwuegbuzie and Frels (2013) propose a stance of *critical dialectical pluralism*. Here, the prevalence of social injustice in every society is assumed, and a research goal of advancing an egalitarian society is advocated. In this way, critical dialectical pluralist researchers adopt worldviews that promote justice, and avoid “research that promotes any kind of cultural deficit model wherein negative educational, social, behavioural, and health outcomes are attributed to characteristics ... [of the] study participants’ cultures and communities” (Onwuegbuzie & Frels, 2013, p. 14). It is from the principles of a critical dialectical pluralist philosophy that this mixed method study was approached.

3.5 Research Design and Process

In summary, the methodological considerations that arose from the historical-contextual and conceptual frameworks informed the design of this mixed methods institutional case study of exceptional academic achievement in South African higher education. The study was conducted in two phases, namely Phase 1 (a quantitative phase), and Phase 2 (a qualitative phase). The University of KwaZulu-Natal (UKZN) was selected as the institutional case for this study. The following subsections provide a detailed account of the research design processes (i.e., methods, sampling, and analysis). These subsections firstly include a rationale for the selection of UKZN as the institutional case study. Secondly, the mixed method design for the study is presented, and thirdly, a detailed account of the Phase 1 sampling and data analysis is provided. Fourthly, a preview of the findings from Phase 1 is presented. This provides a context for the description of the Phase 2 sampling, data production methods, and analysis (the fifth subsection). Sixthly, I will describe the activity theory informed data analysis process that I engaged in to integrate the data across the quantitative (Phase 1) and qualitative (Phase 2) modes.

3.5.1 The selection of the University of KwaZulu-Natal as the institutional case.

In addition to my positional interest in UKZN (as explained in the Author note in the introductory pages of this thesis), the selection of UKZN as the case for this study was justified along two central lines. As a study of the phenomenon of exceptional academic achievement in South African higher education, it was deemed appropriate to explore this phenomenon within an

institution that is both comparatively high performing, and demographically and socio-politically representative of South Africa.

In addition to being one of the largest public higher education institutions in South Africa (DOHET, 2013b), UKZN features consistently in various world university ranking systems³³ and is described as one of the top five research-intensive and research-led higher education institutions in South Africa (Kahn, Vlotman, Steyn, & Van der Schyff, 2007). In the 2013 Webometrics of World Universities rating, UKZN ranked as the top university in Africa, and obtained a world ranking of 381 (Cybermetrics Lab, 2013). The use of various world university ranking systems to justify the inclusion of a higher education institution in a study of exceptional academic achievement at undergraduate level does pose some potential limitations. In particular, world university rankings do not appear to measure undergraduate academic achievement directly, and so in some ways the use of these rankings is at best a proxy indicator of the phenomenon of interest in the current study. In this way, it is acknowledged that the phenomenon of exceptional academic achievement in undergraduate higher education could indeed have been investigated at any number of South African higher education institutions, including those that do not feature regularly in international ranking systems.

UKZN is, however, the only “merged” South African institution among those that feature regularly in international ranking systems, being constituted in 2004 as an outcome of the merger between the University of Durban-Westville and University of Natal. Since 2002, the South African higher education system has witnessed the mergers of several historically disadvantaged and historically advantaged higher education institutions (Mabokela & Evans, 2009). Although there were a number of reasons that propelled the merger processes, those most critical included the need to “create an equitable and accessible system of higher education” that would redress “racial, ethnic, linguistic and gender disparities” (Mabokela & Evans, 2009, p. 209). The merger process that formed UKZN is representative of integrative transformation of previously

³³ See Academic Ranking of World Universities/ARWU, <http://www.arwu.org>; QS/Quacquarelli Symonds Ltd, <http://www.qs.com>; Times Higher Education World University Rankings, <http://www.timeshighereducation.co.uk>; and Webometrics, <http://www.webometrics.info>).

disadvantaged and advantaged systems of higher education in South Africa. Currently, UKZN has favourable student and staff equity profiles relative to other South African higher education institutions (DOHET, 2013b). In addition, UKZN increased its access for African students from 49% of the total UKZN student population in 2004 (DOE, 2005) to 64% in 2012 (DOHET, 2013b). In terms of staffing, 53% of UKZN instruction and research staff is black against a national higher education sector average of 45%,³⁴ and 48% of UKZN instruction and research staff is women against a sector average of 45% (DOHET, 2013b). These figures give an indication of the rapid and significant transformation of the university. UKZN's high national and international performance rating and profile coupled with a concomitant commitment to and achievement of diversity, demonstrates how both equity and excellence can be realised in a South African higher education institution (Odendaal & Deacon, 2009).

Based on the above-mentioned ways, the selection of UKZN as the institutional case study for this study on exceptional academic in South African higher education was justified. As identified earlier, case study research is commonly used in activity theory inspired research, and can be constituted by the exploration of “a bounded system (a case) ... over time ... involving multiple sources of information” (Cresswell, 2013, p. 97). This institutional case study is a combination of both an intrinsic and instrumental case study. Whereas Stake (1995) originally differentiated between an intrinsic case study and an instrumental case study research, I argue that UKZN as an institution has both intrinsic interest (i.e., uniqueness, and my own positional interest) as well as instrumental potential. The instrumental potential is justified in that the exploration of the institution is likely to be instrumental in furthering an understanding of exceptional academic achievement in South African higher education. Although the findings and interpretations from this institutional case study will be specific to UKZN, the aim was still to generate ideas about the phenomenon of exceptional academic achievement in South African higher education. However, I argue that UKZN is a representative example of a high-performing South African higher education institution, and so the findings may be transferable to the notion of South African higher education in general. Therefore, when presenting the findings and interpretations

³⁴ By way of comparison, the other four high-performing South African higher education institutions have an average black instruction and research staff component of 25% (DOHET, 2013b).

for this study, I will refer interchangeably to UKZN, as well as South African higher education in general.

UKZN is currently structured according to four Colleges, namely the College of Agriculture, Engineering and Sciences, the College of Health Sciences (including Medicine), the College of Humanities (including Education), and the College of Law and Management Studies (UKZN, n.d.). Admission to study as an undergraduate student at UKZN, as at other South African universities, is based primarily on the matriculation score derived from the national matriculation examination results.³⁵ Admission is however subject to redress considerations in selected programmes such as various alternative access and bridging/foundation programmes, and in the College of Health Sciences. Due to extremely high demand for spaces in the College of Health Sciences, in addition to matriculation score, admission is stratified by race to accommodate quotas that are reflective of the demographics of the province within which the University is situated (UKZN, 2013b).

3.5.2 Mixed method design.

The design for this mixed method study was based on Leech and Onwuegbuzie's (2009, p. 269) "fully mixed sequential dominant status" design. However, this was adapted to include a more dynamic and iterative design type that was reflective of the dialectical stance, the tension between quantitative and qualitative modalities, and the underlying sociocultural framework. In addition to facilitating theoretical and methodological coherence, the dynamic and iterative nature of the eventual design was also influenced by Teddlie and Tashakkori's (2009) fully integrated mixed design model as well as Nastasi et al.'s (2007) recursive feature which appears in one of their designs. Consistent with mixed methods design trends, a graphic representation of the design used for this study has been constructed (see Figure 3-1), and will be referred to when describing the research process below. As proposed by Leech and Onwuegbuzie's (2009) typology of mixed method designs, the fully mixed sequential dominant status design

³⁵ In 2008, the National Senior Certificate (NSC) replaced the Senior Certificate Examination (SCE) as the South African Grade 12/matriculation/school-leaving examinations (Nel & Kistner, 2009). This change also resulted in a change in the way in which the matriculation score is calculated (see Appendix 4 for more information on how the matriculation score is calculated).

incorporates three dimensions. The three dimensions pertain to level of mixing in the study (i.e., full or partial), sequencing of data collection (i.e., concurrent or sequential), and the status or emphasis of quantitative or qualitative method/s in the overall design (i.e., equal or dominant). Each of these three dimensions will now be presented in relation to Figure 3-1.

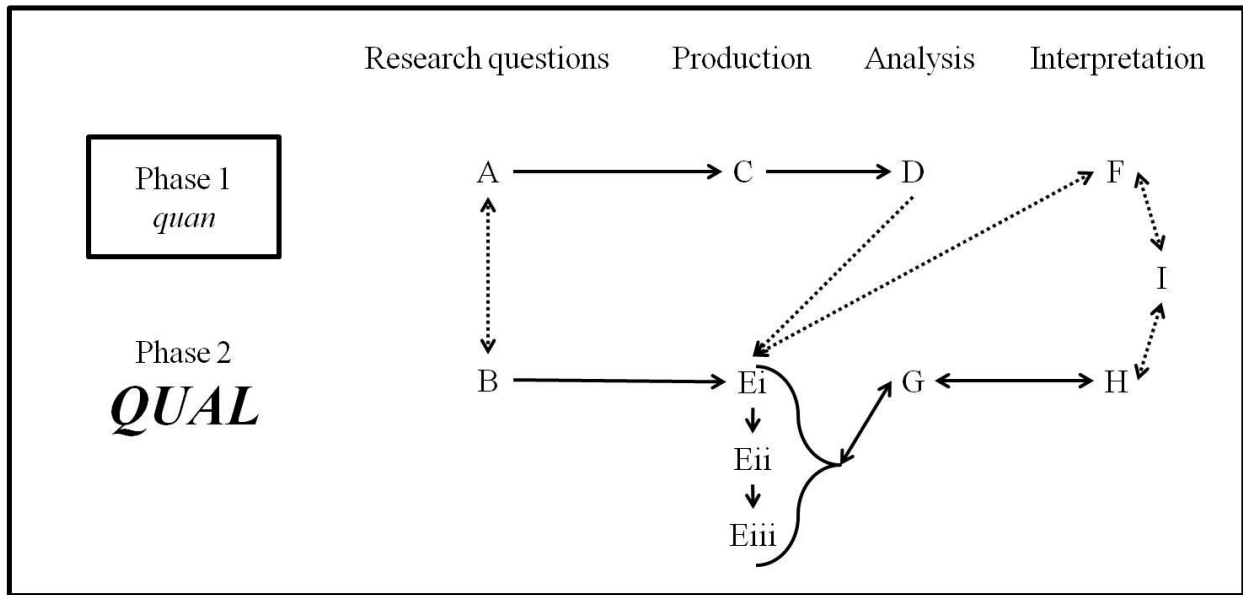


Figure 3-1. Graphic representation of the mixed method design developed for the study

This mixed method study was categorised as fully mixed (i.e., the first dimension) for three reasons:

- firstly, both quantitative and qualitative components were used when designing the research objectives and questions (i.e., profiling/prediction through quantitative methods, and exploration through qualitative methods) – see Figure 3-1, where A = quantitative research questions, B = qualitative research questions;
- secondly, both qualitative and quantitative data was collected and analysed – see Figure 3-1, where C and D = quantitative data, and E and G = qualitative data;
- thirdly, both qualitative and quantitative inferences were made – see Figure 3-1 (F, H, and I).

In contrast, while a partially mixed design makes use of both quantitative and qualitative methods, mixing would only take place at the level of interpretation and inference (Leech & Onwuegbuzie, 2009). When considering Leech and Onwuegbuzie’s (2009) second typological

dimension (i.e., sequencing) for the current study, the quantitative data was collected first (see Figure 3-1, Phase 1 quantitative), this then leading into a second qualitative data production phase (see Figure 3-1, Phase 2 qualitative). This was therefore a sequential mixed method design. Finally, the qualitative data production process was more extensive than the quantitative process, and was also deemed to hold more value than the quantitative process in terms of its potential to explore the phenomenon under inquiry. Specifically, qualitative data was produced via three modes (see Figure 3-1, Ei, Eii, and Eiii), while quantitative data was produced through setting up one database (i.e., the quantitative sample). As a result, the third dimension denoted that this was a study where one of the data modes (i.e., qualitative) had dominant status, this being indicated by capitalisation and increased font size in the graphic representation. In addition, the third dimension (status or emphasis in mixed method studies) was also illustrated in Figure 3-1 via the smaller quantitative phase of the study being “nested” within the larger qualitative phase. Therefore, although sequencing of the study positioned the quantitative data collection first, level of emphasis positioned the qualitative data with higher status.

As mentioned above, the fully mixed sequential dominant status design was adapted to include an iterative and recursive component (Nastasi et al., 2007) and to reflect the dialectical stance adopted in this study. The iterative and dialectical stance was most evident between three aspects of the research design, these being structured to enhance dialectical tensions between quantitative and qualitative modes. Firstly, the dialectical and iterative nature of the study was evident in the design of the research questions (specifically the second and third research questions were positioned in dialectical tension with first research question). This is also illustrated graphically in Figure 3-1 via the dotted bi-directional arrow between points A and B. Secondly the dialectical and iterative nature of the study is also evident in the analysis and interpretation of the quantitative data. This will become explicit when the data production process is described in more detail below, but is currently represented in Figure 3-1 via the unidirectional dotted arrow from D to Ei, and the bi-directional dotted arrow between Ei and F. Thirdly, as is evident in most mixed methods designs (Leech & Onwuegbuzie, 2009), the inferences drawn for this study were derived from both quantitative and qualitative modes (see Figure 3-1, bidirectional dotted arrows between F and I, and H and I). The dialectical and

iterative nature of the study was also manifest within the qualitative data analysis and interpretation processes (see Figure 3-1, bi-directional arrows between Ei, Eii, Eiii, G, and H). The bi-directional arrows between H and G, and G and E, for example, pertained to member checking of descriptive accounts, which in turn added to the accuracy or descriptive validity of the data (Maxwell, 2002).

Having firstly described the rationale for selecting UKZN as the institutional case study, and secondly, the mixed method design used for this study, subsection 3.5.3 will involve a detailed account of Phase 1 (the quantitative phase) of the study. This account will include the process involved in setting up the database (quantitative sample), as well as the data analysis.

3.5.3 Phase 1: Quantitative data production and initial analyses.

Phase 1 of the research was designed in response to the first research question, which sought to profile exceptional academic achievement in South African higher education. In this study, the phrase “to profile exceptional academic achievement” was understood to refer to the significant summary features or characteristics of the group of students who excelled academically in their undergraduate studies. It was envisioned that this would involve generating a profile that was reflective of the available educational and socio-demographic variables (or features and characteristics) of this group of students. As mentioned above, this was identified as being of importance because there did not appear to be any available profiles or descriptions of exceptional academic achievers in South African higher education. In addition to generating a summary profile of exceptional academic achievement in South African higher education, Phase 1 also aimed to identify whether any of these socio-demographic and educational features were reliably associated with or predictive of exceptional academic achievement. In other words, a second aspect to developing the profile of exceptional academic achievement in South African higher education involved identifying which variables were reliably and significantly associated with increased odds of exceptional academic achievement.

3.5.3.1 Quantitative database and sample.

Prior to the commencement of the study, gatekeeper access was granted by the UKZN Registrar's office to conduct the research at UKZN (see Appendix 2). In addition, ethical approval was granted by the UKZN Humanities and Social Sciences Research Ethics Committee for the study to proceed (see Appendix 3). Subsequent to these approvals, Phase 1 of the study was initiated with the request for graduation data pertaining to UKZN students who completed undergraduate bachelor's degrees³⁶ between the years 2006 to 2010 (inclusive). This graduation data was requested from UKZN's Division of Management Information (DMI). There were ethical concerns that the anonymity of the graduates in the graduation data be maintained, especially given that access to the data was being requested without the consent of the people to whom these records belonged. As a result, it was therefore requested that prior to supplying the graduation data, DMI remove all identifying information and replace the graduates' student numbers with dummy student numbers. I was therefore not able to trace students included in the graduation database back to the identity of any particular student who had graduated from UKZN. Graduation data from 2006 onwards was requested as it was reasoned that this would start to reflect students who commenced and completed their undergraduate degrees at UKZN. Although some records in the 2006–2010 range would include students who had initially registered at the former Universities of Durban-Westville and Natal, it was identified that the majority of students who completed degrees from 2006 onwards would start to reflect UKZN students.

DMI provided a Microsoft Excel spreadsheet of 22 540 students who completed UKZN undergraduate degrees between the years 2006 and 2010. The spreadsheet also included a number of variables for each listed student, and indicated whether the student graduated from his/her degree *cum laude*, *summa cum laude*, or not in the aforementioned exceptional ranges. The data was imported into and managed with IBM SPSS Statistics Version 21. Unfortunately, DMI did not keep records of individual student's credit weighted averages for all the

³⁶ South African undergraduate bachelor's degrees are typically three years in duration, although some professionally oriented bachelor's degrees take four years of full-time study (DOHET, 2013a). Graduates from the five-year UKZN Bachelor of Medicine and Surgery degree were also included in the sample.

undergraduate courses they passed. This posed a potential limitation for the study because data pertaining to credit-weighted averages of students who graduated from UKZN was likely to have allowed for a more nuanced or incremental analysis of exceptional academic achievement. In addition, graduating *cum laude* or *summa cum laude* as an indicator of exceptional academic achievement could be considered as an extreme indicator of the phenomenon. In this way, the use of these categories to identify exceptional academic achievement also posed as a potential limitation of the study.

Data cleaning involved four steps. Firstly, it was discovered that 116 students in the database had completed two undergraduate degrees between the years 2006 and 2010. As a result, there were in effect only 22 424 individual students in the database. Many of the aforementioned 116 graduates appeared to have first obtained general Bachelor of Science degrees, and then gone on to complete specialised health science degrees. For example, a student would have completed a Bachelor of Science degree in 2006, then presumably been accepted to commence with a Bachelor of Pharmacy degree in 2007, and then completed this health science degree in 2010. Given that the statistical method used for the analysis of the data (i.e., logistic regression) assumes the independence of each outcome variable (i.e., type of graduation and/or degree) for each subject (Peng, Lee, & Ingersoll, 2002a), it was decided to remove the 116 records where students completed a second undergraduate degree during the time period. In the example mentioned above, the entry for the Bachelor of Pharmacy degree would have been removed, leaving only the first degree completion entry for a Bachelor of Science degree.

Secondly, the data cleaning process resulted in the removal of 1 764 graduates with missing data on theoretically relevant variables. It is recommended (and commonly observed) that cases with missing data be excluded prior to conducting a logistic regression analysis (Katz, 2011). Accordingly, the records of graduates with missing data on theoretically relevant variables of matriculation score, and missing matriculation English symbol were removed. It was observed that the majority of these graduates were not South African citizens. It was therefore likely that their admission to study at UKZN was not based on South African matriculation data, but rather on other school-leaving systems which would have been specific to their home countries.

Thirdly, 24 records for graduates identified as “other”, and 516 records for graduates who identified as “coloured” in the race categories were removed. Coloured and “other” students represented less than five per cent of the database, and therefore these groups would not have affected the statistical significance in the models (Katz, 2011). The remaining three race categories in the sample included African, Indian, and white students, these representing the most prevalent race groups in the UKZN student population. Fourthly, time was spent checking the database for errors. This involved performing frequency counts for the variables in the database which assisted in identifying variables and entries that may have appeared to contain errors (Durrheim, 2006).

The final quantitative sample used in the descriptive statistics and predictive multivariable analysis included 20 120 records of graduates who completed undergraduate degrees from UKZN between the years 2006 and 2010. This sample included 641 graduates comprising the exceptional academic achievement group, classification as such being based on the graduates attaining their degree *cum laude/summa cum laude*.

3.5.3.2 Quantitative data analysis.

Data analysis in Phase 1 involved descriptive statistics and multivariable analysis for the purposes of group membership prediction. Whereas the descriptive statistics (mostly percentages) assisted in describing a profile of the kinds of students who excelled in their undergraduate education at UKZN, the multivariable analysis (specifically logistic regression) assisted in predicting the likelihood of exceptional academic achievement in students.

After frequency counts and percentages had been calculated to describe the sample, a logistic regression analysis was conducted. Logistic regression can be described as a group classification methodology, which falls within the realm of statistical techniques where prediction of membership to a particular group is indicated (Sheskin, 2007). Logistic regression analyses are frequently used to predict membership to particular groups in the higher education context. Peng, So, Stage, and St. John (2002b) conducted a meta-analysis of 52 higher education studies that had used logistic regression as a methodology between the years 1988 and 1999. More recently,

Smith and Schumaker (2006) developed a logistic regression model for use in predicting first-year actuarial science students chances of success. In particular, this latter model incorporated a range of pre-existing academic attributes, identifying those which were associated with increased odds of success in (or drop-out from) the actuarial science programme. In addition, Crisp and Nora (2010) developed a series of logistic regression models to assist in the prediction of Hispanic student success in higher education. More specifically, Crisp and Nora's (2010) models were used to test a conceptual framework of Hispanic student persistence, which included demographic, pre-university, sociocultural, environmental pull, and academic experience variables in relation to successful academic outcomes. The rationale for using logistic regression in (higher) education research has varied. For some researchers (Bahr, 2008; Schumacher, Olinsky, Quinn, & Smith, 2010; Smith & Schumacher, 2005, 2006; Vandamme, Meskens, & Superby, 2007), the aim has been to predict the risk of failure or dropout so that early warning and intervention measures can be implemented. For others (Crisp & Nora, 2010; M. Newman & Petrosko, 2011), the rationale has been to contribute to the understanding of particular conceptual and contextual frameworks in higher education. In an attempt to move away from anecdotal and aspirational accounts of exceptional academic achievement, a logistic regression methodology was used in Phase 1 of this study to contribute to an empirical understanding of exceptional academic achievement in South African higher education. In effect, the aim was to provide a statistically grounded picture of who was most likely to excel in South African undergraduate education

Therefore, in the current study, a logistic regression model was developed to predict the likelihood of membership to the category of exceptional academic achievement at UKZN. As mentioned before, exceptional academic achievement in the current study was assumed to include a category of students who achieved academically exceptional results for a sustained period of their undergraduate studies, culminating in the degree being conferred *cum laude* or *summa cum laude*. The outcome variable of interest for this study then was identified as a dichotomous "graduation type" variable, indicative of whether students graduated, or whether they graduated *cum laude* or *summa cum laude* – the latter two categories being collapsed and inferred to represent a sustained period of exceptional academic achievement. Although the

prediction of membership to a dichotomous group (such as exceptional academic achievement or not) can be facilitated using other statistical methods (e.g., discriminant function analysis, and classification and regression trees [CART]), the use of logistic regression allows for flexible assumptions pertaining to the predictor or independent variables. In particular, “the predictors do not have to be normally distributed, linearly related, or of equal variance within each group” (Tabachnick & Fidell, 2007, p. 517). In addition, logistic regression allows for the prediction of membership to a group on the basis of predictor variables that are categorical, continuous, or a combination of the two.

Five predictor variables were used in Phase 1 of the study, namely race, gender, whether students received need-based funding for their studies via the National Student Financial Aid Scheme (NSFAS) (i.e., financial aid), matriculation score, and matriculation English symbol.³⁷ Although there were a range of other possible predictor variables available for inclusion in the logistic regression model, these were excluded for a variety of reasons. For example, the potential variable of matriculation Mathematics score was excluded as 11% of these scores were missing from the sample. In addition, the variable of age upon graduation was also excluded. This was done because the minimum completion times for undergraduate degrees at UKZN vary in length from three to five years (UKZN, 2013b), and it was therefore assumed that variations in age and graduation type could be related to degree length. Residence type (e.g., UKZN residence or other) was also excluded as a possible predictor variable because the large majority of UKZN residence students are African. In this way, UKZN residence would have then become a proxy variable for race. When checking for multicollinearity,³⁸ none of the remaining predictor variables mentioned above scored a variance inflation factor (VIF) higher than 2.5 (Allison, 2012). After initial exploration of the five predictor variables in relation to the outcome variable,

³⁷ All students admitted to UKZN must have passed English as a matriculation subject, either as a first language or as a second language. The matriculation English symbol refers to the final symbol for English as a subject at matriculation level. These symbols in this sample range from A to F, where A = 80%+, B = 70-79%, C = 60-69%, D = 50-59%, E = 40-49%, F = 30-39% (University of KwaZulu-Natal, 2013b).

³⁸ Multicollinearity is said to occur when two or more predictor variables are closely related. In this instance, the independent contribution of each variable to the logistic regression model would therefore be difficult to assess (Katz, 2011).

it was decided to include an interaction effect in the model. This is an essential strategy of model building (Peng et al., 2002b), and refers to the statistical and theoretical value of combining two independent variables in a predictive model. In their meta-analysis of the use of logistic regression in higher education journals, Peng et al. (2002b) identified that the interaction between race and gender was commonly used. It was also deemed theoretically relevant to include a multilevel statistical approach, which is increasingly recommended in sociocultural research (Schoen, 2011). The five predictor variables, outcome variable, and eventual logistic model specifications are presented in Table 3-1.

Evaluation of the logistic regression models followed the recommendations made by Peng et al. (2002b), and drew on evolving protocols observed in subsequent relevant publications (e.g., Bahr, 2008; Crisp & Nora, 2010; Lundy, 2010; M. Newman & Petrosko, 2011; Veenstra, 2011).

Table 3-1
Specification for Logistic Regression Model

Variable	Definition and coding
Outcome variable	
Exceptional academic achievement	Student graduated <i>cum laude</i> or <i>summa cum laude</i> in undergraduate degree from UKZN: Yes = 1, No (reference group) = 0.
Socio-demographic variables	
Race/gender	Six race/gender categories included in the analyses, namely African female = 1, African male = 2, Indian female = 3, Indian male = 4, white male = 5, white female (reference group) = 0.

Variable	Definition and coding
Financial aid	An indicator of socio-economic status. ³⁹ If a student received financial aid, they were inferred to be financially needy: Yes = 1, No (reference group) = 0.
Pre-university educational variables	
Matriculation score	A score calculated for university entrance purposes, derived from the students' performance in their final matriculation school-leaving examinations (see Appendix 4 for details on how the matriculation score is calculated).
Matriculation English symbol	An indication of the students' performance in English as a matriculation subject with final examination performance being reflected by symbols A to F. In this study, the coding A = 6, B = 5, C = 4, D = 3, E = 2, and F = 1 was used.

3.5.4 Phase 1: Findings preview.

Phase 1 and Phase 2 of this study are dialectically related in that the findings from Phase 1 informed the sampling strategy used for Phase 2. In turn, the sample from Phase 2 assisted with the interpretation of the findings from Phase 1. Given the dialectical stance adopted in this mixed method design and the relationship between Phase 1 and Phase 2, it is therefore necessary to provide a preview of the findings from Phase 1 before presenting the sampling and data production processes employed for Phase 2 of the study. These findings are, however, presented in detail in Chapter 4.

The major finding from Phase 1 of the study was that the socio-demographic variables of race and gender, and financial aid, and the pre-university variables of matriculation score and matriculation English symbol had a strong influence on the odds of exceptional academic

³⁹ A potential limitation for this study is recognised in the use of financial aid as an inferred indicator of socio-economic status. Although the allocation of financial aid is indeed dependent upon the annual income and socio-economic status of a student's family (Republic of South Africa, 1999), the inverse is not necessarily true for students who are not on financial aid. For example, some students who fund their studies via bursaries, scholarships, or loans may also be financially needy. In this study therefore, some students in the sample may have been categorised as not being financially needy (i.e., not on NSFAS funded financial aid), but they may indeed have come from low-income families.

achievement at UKZN. In essence, even when controlling for pre-university variables and financial aid, the odds of excelling at university were found to be significantly weighted in favour of white students in general, and white female students in particular.

As a result of this finding, it was decided to purposively sample African students who were in the senior years of their undergraduate degrees, and had a history of high academic achievement for Phase 2 of the study. Although it would have been possible to refine the inclusion criteria for the purposive sampling decision further (e.g., only students on financial aid, with relatively low matriculation score and matriculation English symbol), it was identified that race and gender were still of critical relevance in South African society and the higher education context. Moreover, the relative decreased odds of exceptional academic achievement for African female and African male students in the logistic regression model, provided justification for this sampling strategy.

3.5.5 Phase 2: Qualitative data production and initial analyses.

As mentioned above, Phase 1 was designed in specific response to the first research question. In effect, this question asked *who* (in terms of available socio-demographic and educational variables) excels in undergraduate higher education. By implication, the question also asked the antithetical, specifically *who does not* excel in undergraduate higher education? The antithetical question has particular importance for the second and third research questions for this study, as well as the sampling strategy used for Phase 2. In addition to the inherent dialecticism within Phase 1 of the study (i.e., the dialectic between the question and its antithesis), the findings from Phase 2 of the study also provided an antithesis against which the findings from Phase 1 could stand. Moreover, the thetical and antithetical questions could also be perceived as consistent with a quantitative criticalist perspective to research. This is rationalised by the fact that these questions could reveal systemic inequities with regard to exceptional academic achievement in South African higher education.

Phase 2 of the study was therefore positioned in antithesis to Phase 1, was aligned to the second and third research questions, and therefore sought to explore the processes engaged in by

unlikely or underrepresented examples of academically exceptional undergraduate students in South African higher education. As a result, the second and third research questions necessitated a purposive (and theoretical sampling) strategy. “Theoretical and purposive sampling are often treated as synonyms. Indeed, the only difference between the two procedures applies when the ‘purpose’ behind the ‘purposive’ sampling is not theoretically defined” (Silverman, 2011, p. 389). The sampling aim of Phase 2 of the study intended to include students who, on the basis of certain socio-demographic or educational characteristics (as identified in the logistic regression model developed in Phase 1), were unlikely to excel academically, but who were excelling nonetheless. This was an example of sampling where the purpose is both statistical (i.e., exploration of outliers) and theoretical (i.e., sampling to address the research question and in response to a theoretical or contextual position). For this study, the primary theoretical reason for sampling students who were unlikely to excel, but who were nonetheless excelling pertained to the critical quantitative and sociocultural stances advocated in Chapter 2 (sections 1.2 and 2.3). Specifically, the relevance of using quantitative data to expose inequities in systems, and a sociocultural and activity theory perspective for exploring dynamic activity systems was argued for.

In addition, the continuous tense of sampling students who were *in the process of excelling* was purposely used. It was anticipated that sampling students who were in the process of excelling would function to enhance the theoretical and methodological congruence in the study. In particular, the sociocultural and activity theory frameworks for this study advocated a focus on activity over outcomes, or process over products (Engeström, 1996, 1999a, 2009a; John-Steiner & Mahn, 1996). Whereas students who did not fit the logistic regression model and *had already excelled* academically (i.e., graduated *cum laude* or *summa cum laude*) could have been sampled, it became theoretically important to work with students who were still in the process of excelling in their undergraduate degrees. In light of these considerations, a suitable theoretically purposive sample would include senior undergraduate students,⁴⁰ who did not fit the logistic regression model developed in Phase 1 of the study, had a history of high academic achievement (e.g.,

⁴⁰ For this study, it was assumed that a senior undergraduate student was nearing the completion of his/her undergraduate degree, and was most probably registered for the final year of the degree in 2012.

certificates of merit, dean's commendations, eligibility for merit-based scholarships), and were possibly on track to graduate *cum laude* or *summa cum laude*.

Silverman (2011) also suggests that “purposive sampling allows us to choose a case because it illustrates some feature or process in which we are interested” (p. 388). Importantly, however, he argues that purposive selection of a case (or series of cases) does not allow a researcher to simply choose a case, but necessitates careful and critical thought. I suggest that my own careful and critical thought processes around purposive (and theoretical) sampling are evidenced in the development of a logistic regression model of exceptional academic achievement, and the decision then to undo the model by selecting a sample that does not “fit” the model. However, despite the careful consideration of the aforementioned theoretical and purposive sampling strategy, the strategy indirectly posed certain limitations for the study and findings. Specifically, the sampling strategy resulted in the production of qualitative accounts of exceptional academic achievement that excluded mainstream accounts of the phenomenon. For example, it is possible that a qualitative exploration of academically exceptional white female students would have been of great value, and the omission of these accounts certainly posed some limitations for this study and the findings. It was reasoned, however, that the critical value attached to providing a platform for underrepresented instances of exceptional academic achievement outweighed the potential value of this platform for mainstream accounts.

3.5.5.1 Qualitative sample and data production.

In preparing for the second qualitative phase of this study, it was necessary to identify suitable research participants. Ethical approval had been granted to liaise with various UKZN offices and departments to obtain a list of undergraduate students who had excelled in the first and second years of their degrees. The only option for securing such a list materialised through the University Teaching and Learning Office (UTLO), which facilitated a scholarship awards process at the start of 2012. The list included 782 senior undergraduate students (all who had completed the first year of their degrees). Given that UKZN typically registers approximately 30 000 undergraduate students each year (DOHET, 2013b), it was assumed that the 782 “scholarship eligible” students on the list were high-achieving UKZN students. The list also

included the students' race classification, and so I proceeded to extract only those students who were identified as African on the list. This resulted in a list of 221 students. The list was further refined to include only South African citizens. In addition to wanting to focus on South African students, it was also observed that the majority of non-South African students were excluded from the logistic regression analysis on the basis of missing matriculation data. On the basis of student numbers (where the first three digits generally reflect the first year of registration), the list was further refined to include only those students who would presumably be in the final year of their undergraduate degrees in 2012⁴¹. This resulted in a final list of 60 students who on the basis of the logistic regression model, were unlikely to excel academically, but who were however in the process of excelling academically by virtue of their eligibility for a scholarship award at UKZN. I then emailed each of these 60 students, inviting them to participate in a discussion about exceptional academic achievement in higher education (see Appendix 5). Specifically, the invites were varied to suit the campus on which the student was studying.

As identified in Figure 3-1 (see Ei, Eii, and Eiii), Phase 2 of the study involved three interrelated data production activities. To assist in the description of these activities, a more detailed and expanded representation of Phase 2 is provided in Figure 3-2. Although UKZN has five campuses situated in distinct geographical locations, it was decided to concentrate the qualitative data production process on the Howard College, Westville, and Pietermaritzburg campuses. This inadvertently excluded medical students from the Medical School campus, and education students from the Edgewood campus from participating in Phase 2 of the study. In addition to time constraints, it was reasoned that the majority of UKZN students were based at the former three campuses, and that these campuses had adequate representation of students across the four

⁴¹ Although the original intention was to only work with students in the final year of their undergraduate studies, it became necessary to also work with students in their second (or penultimate) year of study. This necessity arose because the qualitative participants were recruited on the basis of their student numbers (the prefix for which usually indicates the first year of registration). Some participants had changed degrees during the course of their studies at UKZN, their student number prefix therefore providing misleading information about their level of progression within their current degree. Nonetheless, all students selected for participation in the qualitative phase of the study were technically "senior" students (i.e., not first year students). In addition, they were a year or two away from completing the degree within which they were currently registered, and had a history of high academic achievement within UKZN prior to being recruited for the study.

UKZN colleges. As a result, the 60 students from the list identified were invited to one of three campus-specific focus group discussions (i.e., on either the Howard College, Westville, or Pietermaritzburg campuses).

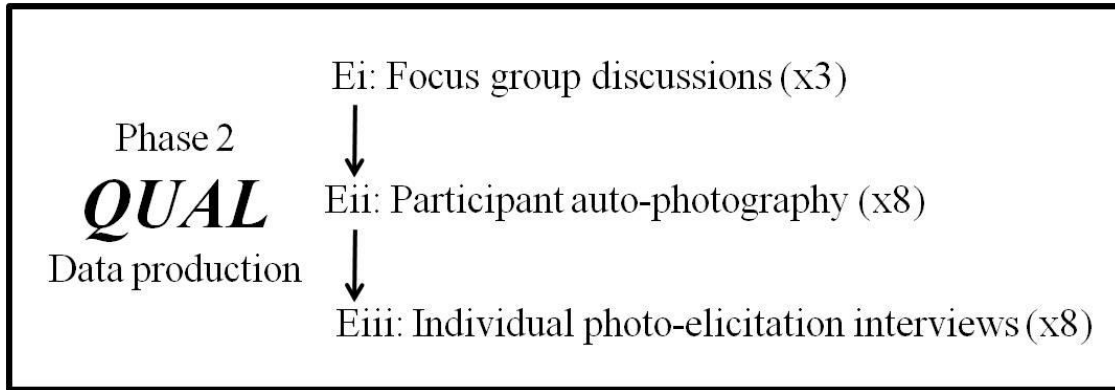


Figure 3-2. Phase 2: Qualitative data production strategies

3.5.5.1.1 Focus group discussions (Figure 3-2, Ei).

Focus group discussion is a common data collection method in the educational and social sciences (Wilkinson, 2011), and usually involve a facilitator/researcher inviting a limited number of people (often between six and eight) to participate in a semi-structured discussion that is focused on a particular topic. The discussion is usually led by a facilitator, and based on a semi-structured schedule of discussion points. Audio and/or video recording of the focus group discussion is done for subsequent transcription and analysis purposes (Wilkinson, 2011). Focus group participants usually have a defining similarity (e.g., in the process of excelling academically in the current study), and a focus group discussion often premises the intersubjective experience, with a facilitator who is attuned to both similarity and difference between the participants and what they share. Some focus group discussions involve the introduction of a stimulus into the discussion, this functioning to provoke a specific response from the participants (Wilkinson, 2011). Focus group discussion was identified as an appropriate methodological entry into the qualitative data production for this study for two reasons. In addition to wanting to focus on an interpersonal and collective process between the participants (which would resonate with a sociocultural stance), I also wanted to minimise my own

dominance in the research process. Although I could not avoid facilitating, directing, and leading the focus group discussions, I anticipated that my being outnumbered in the initial data production stages could function to empower the research participants in the research process.

For this study, I conducted three focus group discussions. In response to the 60⁴² personalised invites, five students responded and arrived to participate in the discussion on the Pietermaritzburg campus, five on the Westville campus, and nine on the Howard College campus. The semi-structured focus group discussion guide that was used to direct the three focus group discussions is included as Appendix 6. After participants had been welcomed to the focus group discussion, considerable time was spent discussing the ethical considerations of the study, and participants were guided through an informed consent document (see Appendix 7). The ethical considerations for the qualitative phase of the study are discussed in further detail later in this chapter (see section 3.6). The participants were also asked to complete a short biographical questionnaire which was used to populate the information in Appendix 8.

After the initial introductory parts of the focus group discussions were concluded, the findings from Phase 1 of the study were then presented. These findings functioned as a stimulus, and participants were then invited to offer explanations and interpretations of the findings. The stimulus and the use of the qualitative research participants to explain the findings from the quantitative phase of the study are illustrative of the dialecticism between quantitative and qualitative modes in the study (see Figure 3-1, bi-directional arrow between points Ei and F). In retrospect, one of the weaknesses of the focus group discussions (in comparison to the photo-elicitation interviews) was the relatively superficial responses that they were able to generate from the research participants. This superficiality was especially noticeable when considering the

⁴² In effect, 41 academically exceptional African undergraduate students did not respond to the email invite to participate in a focus group discussion and research study on the topic of exceptional academic achievement at UKZN. It was assumed that there were probably no substantive differences between the students who arrived to participate, and those who did not. On a practical level, however, it was probable that those students who were invited to participate but did not do so, either had scheduling conflicts with the proposed meeting time, or were not regular users of their university email accounts (and therefore missed the email invite). No attempts were made to follow up with the students who did not respond to the email invites.

depth of the explanations and interpretations that the participants offered for the Phase 1 findings (see Chapter 4, section 4.3). This is perhaps a limitation of the focus group discussion as a method, and may point to the value of combining focus group discussions and individual interviews as data production strategies.

After the participants had discussed their own explanations and interpretations of the findings from Phase 1, they were encouraged to share their own strategies that they felt contributed to their exceptional academic achievement. The focus group discussions were concluded with a discussion of the remaining auto-photographic and photo-elicitation interview components of the data production process (see Figure 3-2, Eii and Eiii).

3.5.5.1.2 Auto-photography and photo-elicitation interviews (Figure 3-2, Eii and Eiii).

When discussing various methodological considerations from a sociocultural and activity theory perspective, it was identified that recent research within these traditions has incorporated and theorised the use of visual research methods (O'Brien et al., 2012; Pearson & Ralph, 2007; Van der Riet, 2008). Auto-photography and Photovoice are two related visual methods, the latter referring specifically to an emancipatory qualitative method informed by principles from Paulo Freire's critical education philosophy (Wang & Redwood-Jones, 2001). The assumption that every individual could be empowered to critically engage with others in their world through dialogue is central to Freire's (1970) philosophy, and specific reference is made to visual images as a tool for facilitating this empowerment. For example, Steyn and Kamper (2011) recently used Photovoice as a methodology to explore the learning barriers that African students from low socio-economic backgrounds experienced in South African higher education. In this study, Chickering's theory of identity development was analytically applied to the visual and textual data, and the findings highlight the resilience that some students display in relation to learning (and living) barriers. Steyn and Kamper (2011) also suggest some measures that higher education institutions could take to address these barriers.

Contemporary research applications of auto-photography involve research participants being provided with cameras, and then being tasked to take photographs that are of relevance to them

in relation to the research topic (Noland, 2006). Photo-elicitation is the research interview that follows when a research participant and researcher discuss the photographs taken by the research participant (Meo, 2010). In this way, auto-photography (and subsequent photo-elicitation) “allows researchers to capture and articulate the ways identity guides human action and thought” (Noland, 2006, p. 2). In addition to my interest in human action and thought in relation to the learning and academic achievement process, three specific theoretical reasons grounded and justified the decision to employ auto-photography and photo-elicitation interviews in this research study.

Firstly, I argue that the camera (and the resultant visual image) is a contemporary tool that can mediate multiple subject–object relationships across time and place. Moreover, the availability of cameras (e.g., the camera embedded within the cellphone), and the general proliferation of visual images in contemporary society are examples of the relevance of the camera as a tool that mediates human existence. In the research context, I identified that a camera could mediate the relationship between the research participants and myself as researcher, as well as the research participants (subject) and the object (i.e., the research study).

Secondly, in recognition of the assumption (from an activity theory perspective) of the fundamental nature of human activity and material production (Engeström, 1987), it was identified as being important for the research participants to engage in a form of socially meaningful activity, as well as to produce something of material existence. Research participants who engage in auto-photography produce material artefacts, and presumably do so by engaging meaningfully with their own societies and environments (Ziller, 1990). I suggest that research participants who take photographs “capture” their environment, position their subjects, and thereby have an influence on the physical world around them. In turn, the physical world reflected in the photographic image affects the photographer and others as they view and reflect on the photograph.

Thirdly, a number of participant, researcher, and research benefits have been found to be associated with photo-elicitation interviewing as a research method. Meo (2010) highlights that

the use of visual material in interviews can function to enhance rapport between researcher and research participant, thereby enabling the researcher to better “enter” the world of the participant. In addition, interviews that are about the research participant’s auto-photographical images are more likely to be directed and led by the research participant, and not the researcher. This is more likely to place the research participant in a position of power, this being especially important where disempowered or underrepresented groups of people may form the subjects of a research study (Noland, 2006). In addition, although both words and images are symbolic forms of human interaction, Harper (2002) suggests that there is a physiological difference in the way in which humans respond to these. A research interview that includes both a visual and verbal element is suggested to yield a qualitatively deeper kind of information and experience because

... the parts of the brain that process visual information are evolutionarily older than the parts that process verbal information. Thus images evoke deeper elements of human consciousness than do words; exchanges based on words alone utilise less of the brain’s capacity than do exchanges in which the brain is processing images as well as words.

(Harper, 2002, p. 13)

Given the historical and developmental focus of sociocultural and activity theory, I reasoned that it would be important to incorporate a research method that would maximise opportunities for developmentally deeper reflections and insights. The above three justifications are therefore suggested to resonate with constructs from activity theory, and reiterate a critical research tradition that places an emphasis on researcher reflexivity and participant empowerment. There are a number of ethical considerations pertaining to auto-photography and photo-elicitation interviews, and these are discussed in detail in subsection 3.6.

Of the nineteen students who participated in the focus group discussions, one did not consent to participate in the study. As a result, this student’s contributions to the focus group discussion in which he participated were removed from the data record. After the focus group discussions, I sent out an invitation to the eighteen participants who consented to participate in the study to attend an auto-photography induction session. Nine participants responded to this invitation, and they were then inducted into the auto-photographic process. The auto-photography induction

session involved three main components. First, it was explained what auto-photography is. Part of this explanation emphasised the ethical considerations and risk factors pertaining to taking photographs for research purposes (see subsection 3.6.2 for more details). Second, the participants were each given a new digital camera, data card, batteries for the camera, and a voucher to develop 50 photographs. They were all taken through the technical aspects of operating the cameras, and several practice photographs were taken. Third, the auto-photography induction session was closed with a specific request for the participants to use their cameras to take at least 10 photographs that reflected their current academic activity, and at least 10 photographs that reflected their academic activity before they started university. The participants were also provided with a handout as follows:

Taking photographs: prompt

1. Take at least 10 photographs that reflect your current academic activity.

As you near the end of semester and exams, keep your camera with you and take some photographs that represent the academic activities you engage in.

2. Take (and/or select from existing photographs) at least 10 photographs that reflect your academic activity before your started university.

During the mid-year vacation, keep your camera with you and take some photographs that represent moments of your academic history.

Appendix 9 provides a copy of the facilitator guide that was used for the auto-photography induction session, while Appendix 10 contains a sample of the auto-photographic information sheet that was provided to each participant during the induction session. The induction process was completed by May 2012, and the nine participants were then requested to undertake the first part of the auto-photographical task (i.e., take at least 10 photographs that reflected their current academic activity) in the weeks leading up to and during their first semester examinations. It was anticipated that the participants would return to their homes during the mid-year vacation, and engage in the second part of the auto-photographical task (i.e., take [and/or select from existing

photographs] at least 10 photographs that reflected their academic activity before they started university).

After the 2012 mid-year vacation, the nine research participants were invited to attend a 90-minute photo-elicitation interview with the researcher. Of the nine participants, eight completed the auto-photographic task, and all eight of these attended at least one photo-elicitation interview. Interviews with two of the participants were conducted across two sessions. Appendix 11 reflects the semi-structured photo-elicitation interview guide that was used for the interviews. After the interviews had been completed, I hosted a photo-exhibition for the eight research participants. For the exhibition, the eight participants were each invited to submit five photographs for display. Enlarged copies of these photographs were mounted on eight boards (one for each participant), and the participants attended an unstructured photo-exhibition where they could view a selection of each other's photographs. The exhibition did not form part of the qualitative data production process, but performed an important "visual knowledge" dissemination and feedback function often observed in critical research (Macleod, 2004). In addition, the exhibition allowed me to close off the qualitative data production process in a way that refocused attention on the collective activity of the participants.

In summary, the data produced for the qualitative phase (Phase 2) of this study comprised transcriptions arising from three focus group discussions conducted with 18 participants, 117 photographs taken by eight of the 18 participants, and transcriptions arising from individual photo-elicitation interviews conducted with the eight participants who produced the photographs. In Appendix 8 (and specifically Table 10-5), a list of all eighteen participants, and their level of involvement in Phase 2 of the study is reflected. There were eight students who participated in the full data qualitative production process. These eight students were not purposively selected to be representative of high-achieving African students; however it is argued that representativeness was coincidentally achieved across the domains of gender, area of study, and socio-economic status. Specifically, the eight were constituted by four male and four female students. When considering area of study, four of the participants were students within the College of Humanities, two were studying degrees in the College of Law and Management Studies, and one

was studying a degree in the College of Health Sciences. Although financial aid allocation was used earlier to infer socio-economic status in the quantitative phase of the study (see Table 3-1), this was not a reasonable deduction to make for participants in the qualitative phase. This was because most of these students were or had been recipients of bursaries and scholarships as a result of their exceptional academic achievement. As a consequence, school quintile⁴³ was used as an indicator of the socio-economic status of the qualitative research participants (see Appendix 8, Table 10-3, column 4). In South Africa, schools are classified into five quintiles. Lower quintile schools are indicative of higher levels of poverty in the area within which the school is located (Department of Basic Education [DBE], 2013). As a result, children who attend low quintile schools are likely to come from families of low socio-economic status. Of the eight students who participated in all qualitative data production phases, three had attended quintile 5 schools, one had attended a quintile 4 school, two had attended quintile 2 schools, and one had attended a quintile 1 school. Inadvertently then, the eight research participants were somewhat representative of the South African socio-economic spectrum.

3.5.5.2 Qualitative data analysis: Initial steps.

The process of analysis of the qualitative data (i.e., transcripts from focus group discussions, photographs, and transcripts from photo-elicitation interviews) did not happen in a sequential or pre-determined manner. Just as the quantitative data findings informed the sampling of the qualitative participants, and the qualitative data production informed the interpretation of the quantitative data, so too was the analysis of the qualitative data an iterative and reflexive process. In developing an iterative qualitative data analytic framework, Srivastava and Hopwood (2009) claim, “[r]eflexive iteration is at the heart of visiting and revisiting the data and connecting them with emerging insights, progressively leading to refined focus and understandings” (p. 77). The qualitative data for this study was produced over a six-month period, and different forms of analysis were evident throughout and after the data production stages. The intensity and complexity with which the qualitative data was revisited, reconnected, and refocused increased

⁴³ Schools in South Africa are classified into five quintiles. The lower the quintile, the higher the level of poverty in the area within which the school is located (Department of Basic Education [DBE], 2013).

after the data production was complete, and eventually drew to a form of finality with the re-interpretation and re-integration of both quantitative and qualitative modes of data.

In the next section, five reflexive and iterative steps are described, and these reflect the initial qualitative data analytic steps undertaken. As the focus group discussions, auto-photographical compilations, and photo-elicitation interviews unfolded, it was first necessary to organise and familiarise myself with the data (Cresswell, 2009; Terre Blanche, Durrheim, & Kelly, 2006). This involved personally transcribing the audio-recordings from the focus group discussions and photo-elicitation interviews, and sorting and labelling the photographs. All forms of qualitative data were organised in folders and managed within NVIVO Version 10. The transcription process had already inducted me into a level of familiarity with the spoken and resulting textual qualitative data; however, it was also necessary to read and re-read the transcriptions. While doing so, I kept a series of researcher memos within NVIVO, these capturing my initial thoughts and reflections in relation to the evolving data production and initial familiarisation processes. Participants took digital photographs, and downloaded these to my laptop computer during the photo-elicitation interviews. I never developed photographs for analysis purposes, but did experiment with various electronic representations of the images. This involved setting the photographs up to display on my computer as a slide show, which alternated the order in which the photographs were displayed (e.g., within participants in the order the participants presented them, and across participants in random order). I also moved the photographs around on the computer screen positioning them alongside and within each other.

The first organising and familiarising step had already taken me into a second step of inducing themes⁴⁴ and coding⁴⁵ the data. Although I had already started noting possible themes during the first organising and familiarisation step, a second more thorough process of line-by-line reading was engaged in to identify and verify themes and codes. However, as suggested by Chenail

⁴⁴ Terre Blanche et al. (2006) identify that, although themes could “arise naturally from the data” (p. 323), they should also be related to the research questions of the study.

⁴⁵ Although related to inducing themes, the process of coding involves physically assigning labels to various forms of qualitative data (Cresswell, 2009).

(2012), my line-by-line reading was conducted with an awareness of smaller textual chunks (e.g., words and parts of words) and larger textual chunks (e.g., extended statements). With this in mind, it also became relevant to be aware of not only the photographs as individual photographic units, but also to develop an awareness of the various parts of the photographs, and the connections between the individual photograph units. In addition, the participants did not produce the photographs in isolation, but rather did so in response to a prompt from me, and then presented these for discussion during a photo-elicitation interview. Therefore, the second theme identification and coding step also required a multi-dimensional awareness of photograph, photographic elements, photographic context, and photograph within photo-elicitation interview. Moreover, Mitchell (2011) alerts researchers using visual methods to the importance of being aware of “presence and absence, visibility and invisibility” (p. 99).

We must begin to question photographs, asking not only what we think they show us (and how much of what we think we perceive is in fact based on the particular type of visual rhetoric working upon the sitter), but also what they don't (can't) show us. (Spence, 1986, p. 92, cited in Bell, 2002)

Therefore, when discussing the participants' photographs during the photo-elicitation interviews, I also inquired about what was not represented by or missing from the photographs. During the subsequent analysis steps, it was therefore also relevant for me to reflect beyond the immediate visual stimulus that the photographs provided.

Although the transcription and initial familiarisation steps took place sequentially (i.e., as the data was produced), the second step of inducing themes and coding was ordered intuitively. Here, I selected what I perceived to be particularly rich focus group discussions and photo-elicitation interviews, honing in on these in the second step. I did, however, eventually work my way through all of the transcriptions from the focus group discussions and photo-elicitation interviews, as well as the auto-photographical compilations. As I worked through all the qualitative data produced, this merged into a third step of elaboration. Elaboration can be described as a more detailed exploration of themes and the relationships between these (Terre Blanche et al., 2006). This facilitated a process of linking themes and codes across transcripts

from focus group discussions and photo-elicitation interviews, and photographs and participants. In addition, the movement into an elaboration step also began to facilitate links with the quantitative data and findings from Phase 1 of the study. The third elaboration step necessitated revisiting the names of some of the codes and themes, collapsing certain codes and themes together, and separating certain codes and themes.

A fourth step of the initial qualitative data analysis involved compiling photographic-infused descriptions of the eight research participants who completed all stages of the qualitative data production process. These descriptions were initially crude and developed to varying degrees depending on the data produced by the participant. A fifth step involved the refinement of these photographic-infused descriptions, and four of these now appear as a data-driven first level of analysis in Chapter 5. These descriptions are of four of the research participants, one from each of the four UKZN Colleges, two female and two male. In addition, the descriptions are structured systemically around two themes of “a vision for the future that is grounded in the past”, and “epistemic access.”

3.5.6 Integrating quantitative and qualitative data: Drawing on activity theory.

Attempts to integrate a theoretical analysis across the quantitative and qualitative forms of data were made by drawing on relevant principles and constructs from cultural-historical activity theory. Although activity theory does not seem to offer detailed accounts for data analysis, it does facilitate a particular understanding of human behaviour that can be of use for analysis. This understanding of human behaviour was discussed in detail in Chapter 2 (subsection 2.3.2) and above (see section 3.2). Specifically, although collective and socially meaningful human activity would be prioritised as a unit of analysis, there would still be an awareness of the individual engaged in this activity. Therefore, individual (academic) behaviour was understood to exist, but only within a collective and socially meaningful trajectory. In developing this understanding of human behaviour analytically, most research grounded in activity theory has applied the components of Engeström’s (1987) activity system triangle⁴⁶ as a heuristic device. Research that

⁴⁶ In Chapter 2 (subsection 2.3.2), Figure 2-5 was included to reflect current conceptions of such an activity system triangle.

has drawn on this conception has tended to organise data around the a priori components of the activity system triangle, these including subject, object, mediating artefacts, rules, community, and division of labour (Akhurst & Evans, 2007; Akhurst & Liebenberg, 2009; Hardman, 2007; Leadbetter, 2005; Pearson & Ralph, 2007). In her research on behaviour change in relation to HIV and AIDS, Van der Riet (2009) describes the constructive and analytic process she undertook in applying Engeström's (1987) a priori components. This process resulted in the construction and analysis of several sexual activity systems, which in turn provided a multi-dimensional and historic perspective on (the lack of) behaviour change in relation to HIV and AIDS.

Drawing on Engeström's (1987) activity system as a heuristic device, the textual and photographic data produced for this study was then revisited. This involved reworking the original themes and codes that were inductively derived during the initial qualitative data analysis steps (see subsection 3.5.5.2) into the components of several activity system triangles. During this stage of analysis, I also began to draw in the numeric data⁴⁷ generated in Phase 1 of the study. While re-coding the data, it became useful to experiment with various representations of academic activity systems in higher education. Van der Riet (2009) clarifies, "the analyst constructs the activity system as if looking at it from above. At the same time, the analyst selects a *subject*, a member of the local activity, through whose eyes and interpretations the activity is constructed" (p. 118).

In this way, I was aware of looking at the systems from both a *subject* perspective, as well as a *system* perspective. The experimentation involved several academic activity system permutations, this being recognised as part of the process, as well as reflective of the dialecticism inherent in the mixed methodology and grounding frameworks of socioculturalism and activity theory. The first "semi-activity" system that emerged could be characterised as the "mid-section" of an institutional system of (exceptional) academic activity. This mid-section involved the components of subject, object, and outcome of a system of academic activity, where the subject

⁴⁷ The process of drawing in the numeric data was informed by Yanchar's (2011) articulation of how Engeström has employed numbers as part of the practical discourse of contextual inquiry.

was identifiable as all UKZN students who completed undergraduate degrees between the years 2006 and 2010. The subject–object dialectic was represented by academic activity, and an outcome of either exceptional academic achievement or academic achievement was noted. This mid-section drew predominantly on the logistic regression model developed in Phase 1 of the study. I then used the qualitative data produced from the focus group discussions to construct the remaining “outer” system components of mediating artefacts, rules, community, and division of labour. In this way, the construction of an institutional system of (exceptional) academic activity enabled me to engage in a dialogue between quantitative and qualitative forms of data. Two additional activity systems were constructed, these eventually taking the form of an evolving system of exceptional academic activity, and a historical system of exceptional academic activity. The evolving and historical systems of exceptional academic activity were constructed in response to the analytic dialogue I engaged in with the eight auto-photographical compilations and photo-elicitation interviews in relation to these compilations. Although the construction of the evolving system of exceptional academic activity arose naturally, the construction and analysis of a historical activity system was deemed essential, especially considering the sociocultural and activity theory perspective. Social and cultural phenomena and processes are inherently historical. They are historically formed and situated, and operate in dialectical tension across past, present and future (Stetsenko & Arievidtch, 2004). As described in section 2.3, sociocultural and activity theory frameworks are grounded in the assumption that human processes are intimately connected to society and social processes, which in turn locate these historically. As a result, the historical activity system was deemed to be an essential aspect of the construction and analysis, providing a historical basis to the thesis. Constructing and analysing activity systems from multiple forms of data are suggested to enable the exposition of the individual–social dialectic (Van der Riet, 2009). These three activity systems are presented, described and analysed in Chapters 6, 7, and 8.

However, the construction and analysis of the three systems was not sufficient to account for how the systems had the potential to change and be transformed. As described in section 2.3.4, an activity theory and system perspective also emphasise the notion of contradictions and tensions. In addition, particular importance is placed on these contradictions and tensions

because they are theorised to generate energy that could enable change and transformation in the systems (Engeström, 1987). Attempts to operationalise the contradictions and tensions within and between the activity systems did not happen sequentially to the process of constructing and analysing the systems. In fact, the qualitative data production processes I engaged in were partly responsible for how these contradictions and tensions were operationalised. Strategies for identifying contradictions and tensions in activity systems are evident in Engeström's (1987, 1999a, 1999b, 2001) work, and these imply a dialogue between researcher and research participants, where apparent contradictions are discussed and interpreted. For this study, two types of dialogue around contradiction took place between the researcher and the research participants. The first was evident during the focus group discussions. Here, the qualitative research participants were purposively recruited to embody contradiction to the quantitative data generated in Phase 1 of the study. The participants were all African students who were in the process of excelling, yet according to the logistic regression model, their odds of exceptional academic achievement were highly unlikely. In this way, the data production process invited participants to offer interpretations pertaining to the contradiction evident between themselves and a logistic regression model.

Second, the participants also engaged in a dialogue with the researcher around their auto-photographical compilations. I intentionally prompted the participants to take photographs that reflected both their current and historical academic activity, then engaging them in a discussion around the contradictions between past and present academic activity. In addition, the photographs provided a rich platform to discuss the contradiction between what was visually present in the photographs, and what was visually excluded. In retrospect, these two types of dialogue facilitated "strong personal involvement, often including emotional encounters with and tense discussions on the data" (Engeström, 1999b, p. 68). These emotional encounters informed the construction and analysis of the activity systems, and in particular the emotional reflections of the activity systems that were constructed.

The rigour with which the analytic integration for this study was undertaken is graphically represented as a matrix in Figure 3-3. In this matrix, the various data types (i.e., quantitative and

qualitative) are presented in columns, while the various data analysis strategies are presented in rows. The bi-directional arrows signify the backwards and forwards analytic movements across the various data types, while a uni-directional arrow implies a one-way application of an analytic technique. For example, the logistic regression methodology was applied in the quantitative phase of the study. However, the analysis and interpretation of this method were interrogated in the focus group discussions, this becoming manifest in the form of transcripts. The bottom row includes a bi-directional arrow, and this signifies the forwards and backwards movement across all types of data through the use of activity theory as an analytic framework.

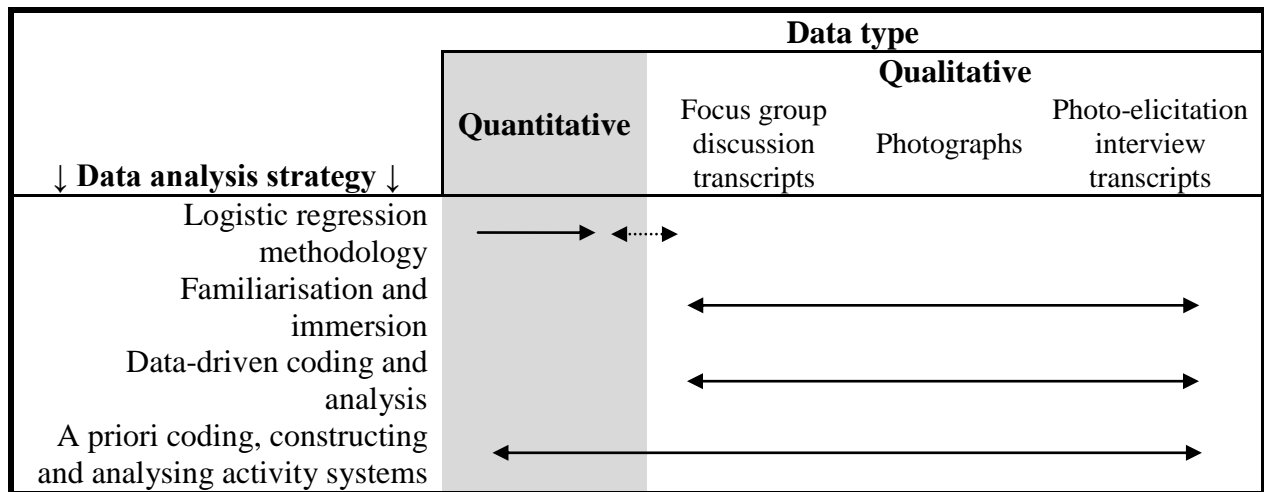


Figure 3-3. Integration of data analysis across data types

3.6 Ethical Considerations

As mentioned earlier, ethical approval was granted for this study by the University of KwaZulu-Natal Humanities and Social Sciences Research Ethics Committee (see Appendix 3). There are a number of principles and practices associated with ethical research (Wassenaar, 2006). For example, the practice of anonymity of the graduation data used for Phase 1 of the study has already been discussed above (see subsection 3.5.3.1). In addition, the general ethical principles of autonomy, respect for the rights, dignity and diversity of research participants, beneficence, and nonmaleficence were relevant for this study. Along with the ethical practices of informed consent, anonymity, and confidentiality, the aforementioned ethical principles will now be discussed. These principles and practices were highlighted for this study because they appear

across most domains of educational and social science research, and are specifically referred to in Ridley's (2009) recommendations for the ethical treatment of higher education students as research participants. Finally, there were specific ethical considerations pertaining to the use of visual methods in research, and these are addressed in a separate section after the general ethical principles and practices have been discussed.

3.6.1 General ethical principles.

The autonomy of research participants is usually ensured through respectful and considerate engagement, and the recognition of participants' right to make decisions for themselves during the research process (Wassenaar, 2006). Autonomy can be exercised by an informed consent process, voluntary participation in a research project, as well as voluntary discontinuance. Importantly, discontinuance should not result in any negative effects for the participant. At the start of the focus group discussions for this study, the participants were guided through an informed consent document (included as Appendix 7). In addition to signing the informed consent document, informed consent was understood as a continuous process and dynamic negotiated state between researcher and research participants for this study. In recognition of this continuous consent process, each stage of the qualitative phase of the study (i.e., focus group discussion, auto-photography induction, and photo-elicitation interview) sought to confirm the participants' comfort with the research process, and to re-establish their consent and autonomous participation.

Participants were invited via email to attend the focus group discussions, and so their appearance at the allotted times indicated some level of voluntary and free participation. In addition, during the focus group discussions, it was reiterated that participants were free to leave at any point (see Appendix 5). Although the informed consent documents were discussed early in the focus group discussions, the participants were only asked to leave these behind at the end of the focus group discussion. This strategy allowed the focus group participants time to think about whether they wanted to consent to participate in the study or not. There was also no social pressure to consent given that time was not spent by the researcher in the focus group discussion collecting the consent forms. As identified earlier, one participant opted to stay and participate in the focus

group discussion, but then did not return the informed consent form at the end of the focus group discussion. This particular participant's contributions to the focus group discussions were subsequently removed from the study.

Respecting the rights, dignity, and diversity of research participants is another ethical principle that can be partly achieved through an informed consent process (American Educational Research Association [AERA], 2011). Some of the ways in which the rights, dignity, and diversity of the participants were respected during the data production processes for this study included the researcher's awareness of interpersonal processes while facilitating the focus group discussions and interviews. Participants were respectfully invited to contribute to the group discussions, diverse opinions were encouraged, and aspects of the photo-elicitation interviews that evoked emotions in the participants were sensitively managed. Appropriate referrals to student support services at UKZN were suggested where necessary.

Another way in which the ethical principles of autonomy and respect for the rights and dignity of research participants can be maintained is through confidentiality and anonymity (Wassenaar, 2006). In general, confidentiality implies that information pertaining to research participants is kept private and anonymised in the reporting of the study. Iphofen (2009) differentiates between anonymity and confidentiality by identifying the latter as a continuous variable and the former as dichotomous. In qualitative research, a participant is either anonymous or not, whereas levels of confidentiality may be applied and observed in research processes. Although all research data should be treated confidentially,⁴⁸ confidentiality implies that information provided during a data production process should not be divulged without the permission of the participant to whom that information pertains. As a default ethical standard and practice, most researchers assume that participant anonymity and confidentiality would be desired by research participants to prevent stigmatisation and the potential for harm (Giordano, O'Reilly, Taylor, & Dogra, 2007).

⁴⁸ For example, data should be securely stored, focus group participants should be reminded not to divulge details that other participants reveal during discussions, and certain details should not be included in research reports (Iphofen, 2009).

In contrast to the default position of confidentiality and anonymity, it is relevant to note that some research participants could wish to exercise their right to be identified. This is a particularly critical perspective, which may argue against paternalistic assumptions of needing to protect research participants from their own identities and stories. For some research, it may be politically, socially, and individually relevant to match the voice and name for those who are disempowered or underrepresented in social phenomena (Cresswell, 2009). In effect, the above dilemma represents a tension between an assumed position of enforced confidentiality and anonymity in research, and an elective identity disclosure accompanied by negotiated levels of confidentiality. In light of this dilemma, it was decided in this study to offer the research participants the opportunity to reveal their identities should they so desire (see Appendix 7). Of the eighteen students who consented to participate in the study, fifteen signed a separate specific consent to have their identity revealed in the study. Within the group of eight research participants who went on to complete the auto-photography and photo-elicitation interview components of the research, only one had originally requested to remain anonymous. Throughout the qualitative data production process, I continued to check on the status of the participants' consent to disclose or conceal their identities. In managing this disclosure, some elected to request that certain photographs or aspects from the data they produced were removed from the data record. One participant, who initially consented to her identity being disclosed, subsequently opted for anonymity and a pseudonym. In contrast, the participant who initially opted to have his identity remain anonymous subsequently requested his identity be disclosed in the final write-up. Necessary changes in data records were made throughout the data production, analysis, and write-up processes to accommodate these negotiated changes in informed consent.

The ethical principles of nonmaleficence and beneficence can be conceptualised concurrently. Whereas nonmaleficence involves not doing any harm, beneficence involves an awareness of and attempt to enhance the well-being and positive benefits accrued to research participants as an outcome of their participation in a research study (Wassenaar, 2006). In an attempt to avoid any potential harm to the research participants' academic performance in this study, all data production activities that involved meeting with the researcher were always scheduled outside of formal lecture times (e.g., evenings, Saturdays, or during individual student's free periods). I was

also acutely aware of mid-year examination schedules, and repeatedly checked that research meetings did not clash with the research participants' academic commitments or academic preparations. The principle of beneficence was potentially manifest through offering meals and refreshments during the focus group discussions. In addition, nine of the participants who were inducted into the auto-photography components of the study were provided with entry-level digital cameras which they retained after the study had been completed. Moreover, it was anticipated that the participants' involvement in the study could have positive academic and psychological benefits for them. For example, by focusing on the actions and behaviours that enhanced their academic performance, it was hypothesised that this may reinforce adaptive academic behaviours as well as assist with academic motivation. This did in fact happen for some of the participants, who commented via email or in person with the researcher that their involvement in the study had helped maintain academic focus, re-clarify their academic and personal goals, and reflect on the personal and academic histories that had contributed to where they were at that stage.

3.6.2 Ethics pertaining to visual methods.

In addition to the ethical principles of autonomy, respect for the rights, dignity, and diversity of research participants, and beneficence and nonmaleficence, there are specific ethical issues that pertain to the use of visual methods (and auto-photography) in research. These pertain to the possibility that research participants may invade the privacy of other people via their request to take photographs, issues around image ownership, and permission to use the photographs produced as part of the auto-photography process in publications that arise from the study (Wang & Redwood-Jones, 2001). Appendix 10 reflects the ethical and privacy issues pertaining to taking photographs for research purposes that were specifically listed for the participants within the auto-photography information and agreement sheet. Participants were required to sign that they understood these ethical and privacy issues, and copies of these signed documents were scanned and emailed to the participants for their own reference purposes. Drawing on Wang and Redwood-Jones' (2001) guidelines, it was emphasised that the research participants should seek the written consent of any person who they wished to photograph for the purposes of their auto-

photographic activity.⁴⁹ An acknowledgement and release component was incorporated into the consent form that subjects of photographs were asked to sign. These forms explained why potential photograph subjects were being asked to have their photograph taken, as well as how the photograph would be used (i.e., for research purposes, including analysis, and publication in this thesis or other publications). It was also specified that the photographs could not be sold and that, although the subject's name and other identifying details would not appear alongside any publications of the photograph, the subject may be recognisable from the photograph. In addition, if research participants wanted to take photographs of a child (minor), they were advised to obtain the written consent (and acknowledgement and release) from the minor's parent or guardian. Several hard copies of acknowledgement and release forms for adults and children were provided to the research participants, and these were also emailed to the participants in the event they needed more copies. Appendix 12 and Appendix 13 reflect copies of the acknowledgement and release forms that the research participants got signed when taking photographs of people for their auto-photographic collections.

In addition to obtaining consent and permission for the photograph to be used, it was emphasised that the research participants should not take photographs of people where they were portrayed in an embarrassing or false light (Wang & Redwood-Jones, 2001). It was also pointed out to the research participants that although they technically owned the photographs that they took, it would be unethical to take a photograph of someone for research purposes, and then use that image for commercial gain. It was also emphasised that if someone initially refused to have his/her photograph taken, that the research participant should not place pressure on that person beyond the initial request.

⁴⁹ Ethical guidelines for the use of photography in research indicate that a research participant or researcher does not need the consent of individual members of a crowd of people, especially where the individual identities in that crowd are unrecognisable. Alternatively, if the focus of a photograph for research purposes is an object (e.g., a building), and someone inadvertently walks into the frame of the photograph, the photographer does not necessarily need that person's consent (Photovoice Hamilton, 2007).

Given that the research participants owned the photographs they took, they were also asked to sign a photograph-release form. This granted the researcher permission to use the photographs included in this thesis and in any other academic publications that may arise from the study (see Appendix 14 for a sample of the photograph-release form). This form also required the research participants to specify the photographs that they consented to be released for this study. As mentioned above, some participants opted to withhold consent for the release of some of the photographs they took. For example, after the photo-elicitation interviews, some research participants identified that the information they provided about some of the subjects of their photographs was in fact private to that subject, and so should not appear in the study. Consent to release these photographs was therefore not provided by the research participants and these were removed from the data record, along with the narrative accounts that referred to these photographs.

3.7 Quality in Mixed Methods Research

Although a variety of different approaches for evaluating the quality of mixed methods research have been advanced,⁵⁰ the quality of this study was contextualised holistically. This implies therefore, that quality criteria developed specifically for mixed methods research were used in this study, and are prioritised in this section. In particular, the quality in this study was underpinned by Tashakkori and Teddlie's (2008) mixed methods quality framework, and guided by O'Cathain's (2010) adaptation of this framework.

O'Cathain's (2010) framework for evaluating mixed methods research is centred on eight quality domains, each domain incorporating a variety of research quality principles and practices. Five intersecting quality domains pertaining to planning quality, design quality, data quality, interpretive rigour, and inference transferability were prioritised in this study, and I included a sixth affective domain specifically suited to this study. The first quality domain refers to elements of planning in a mixed methods study. Here, the quality of the study is perceived to be

⁵⁰ Some evaluative frameworks for mixed methods studies advocate an individual components approach, where individual quantitative and qualitative components of the study are evaluated independently (Sale & Brazil, 2004).

enhanced via the thoroughness of the literature review and the relevance of the guiding conceptual and paradigmatic frameworks (Leech, Dellinger, Brannagan, & Tanaka, 2010). The rationale for the deployment of a mixed methods approach should also be adequately developed and transparent in an attempt to enhance the planning quality of the study.

The concern around transparency of the rationale leads into a second quality domain, that pertaining to design quality and the transparency with which this is explicated. The transparency of design can be facilitated through the use and/or adaptation of the variety of available mixed method typologies (e.g., fully mixed sequential dominant status), reference to the dimensions of the design (i.e., level of mixing, sequencing, and status), and a visual representation of the design (see Figure 3-1) (Leech & Onwuegbuzie, 2009). In this way, the quality of the design can be independently evaluated by readers of the research. In addition, the design quality can be enhanced further by the breadth and depth of the design (Caracelli & Riggin, 1994). “Breadth” may refer to the extent of the quantitative data (e.g., five years of UKZN graduation data), while “depth” may refer to the density of the qualitative data (e.g., rich accounts of individual students in context). Although breadth and depth are not exclusive to quantitative and qualitative methods respectively, they do provide a measure against which the quality of the design (and data) can be evaluated.

The concern around breadth and depth of the design quality leads naturally into the third quality domain, that pertaining to data quality. In addition to the adequacy of sampling in the mixed method design, the quality of the data could be assessed through the transparency with which it is described and analysed. Within this domain of quality, Teddlie and Tashakkori (2009) highlight the principle of analytic adequacy, and emphasise the selection of appropriate statistical tests for the quantitative phases of mixed method studies. For this study, several statistical tests were considered for Phase 1 of the study (see subsection 3.5.3.2), however the methodology of logistic regression was applied given the type of data available from UKZN’s DMI. O’Cathain (2010) also refers to the notion of integrative analytic rigour in data analysis, emphasising the way in which data analysis is integrated across quantitative and qualitative modes. For this study, several integrative data analytic steps were undertaken, these including the transformation of

quantitative data into qualitative data, the use of findings from one phase of the study to guide another, and the placement of data in a matrix for “within-case and across-case analysis” (O’Cathain, 2010, p. 546). Figure 3-3 is a representation of the integrative analytic rigour exercised within this study.

A fourth domain of quality in mixed method research can be identified as interpretive rigour, which incorporates principles of inference, inference quality, and credibility and trustworthiness. Tashakkori and Teddlie (2003) define inference as “a researcher’s construction of the relationships among people, events, and variables as well as his or her construction of respondents’ perceptions, behaviours, and feelings, and how these relate to each other in a coherent and systematic manner” (p. 692). It is the quality of these inferences that is important to consider in mixed methods research, this also taking into account the researcher’s capacity to show which inferences come from which data sources, and the theoretical consistency of the inferences. In addition, interpretive rigour and inference quality could also be assessed by the extent to which the articulation of the inferences is found to be plausible, credible, and trustworthy by others. The notion of meta-inferences is also important in mixed methods research, this referring to the way in which inferences across quantitative and qualitative modes are integrated. Overall, interpretive rigour takes into account the quality of the links between the findings, analysis, interpretations and conclusions (O’Cathain, 2010). For this study, the notion of descriptive validity (Maxwell, 2002) was related to the third and fourth domains of data quality and interpretive rigour. When discussing the mixed method design (see subsection 3.5.2), it was described how the research participants were involved in checking the descriptive accounts that arose from the data production process. Here, participants were asked to read and comment on the accuracy with which I had described their auto-photographical accounts. This emerged as a back-and-forth process between researcher and research participant, involving appropriate modification, addition, and removal of certain aspects of the descriptive accounts, and resulting in the descriptions contained in Chapter 5.

The fifth domain in O’Cathain’s (2010) framework (inference transferability) incorporates notions of external validity from quantitative research, and transferability from qualitative

research. For mixed methods research, “inference transferability” refers to the extent to which the conclusions are plausible for other contexts. The transferability of these inferences across contexts is usually assessed by a reader on the basis of thick descriptions and a thorough account of the research context (Dawson, 2009). Extracts from transcriptions are used in the analysis chapters of the thesis, and Appendix 15 contains a list of transcription symbols used. These symbols were adapted from Silverman’s (2011) recommendations, conventions from the *Publication Manual of the American Psychological Association 6th Edition* (APA, 2010), and everyday written grammar conventions.

The sixth or affective domain incorporates quality principles that are specific for this study and which resonate with contemporary activity theory concerns. As discussed earlier, the theorisation of emotion within activity theory is a contemporary notion of interest (see section 2.3.4 in Chapter 2). As a result, it was relevant to incorporate this contemporary notion into the quality framework presented in this thesis. In light of this, I drew on the guiding principle that research should “communicate the emotional elements of how the participants and the researcher engaged in the research study” (Northcote, 2012, April, p. 107). The affective principle conveyed the emotional involvement of the participants in the study, and could therefore be conceptualised as a quality enhancement strategy.

3.8 Concluding Remarks

Chapter 3 has provided a detailed description of the research methodology employed for this study on exceptional academic achievement in South African higher education. Firstly, certain methodological considerations were presented in relation to the contextual and conceptual frameworks developed for this study (these having been presented in Chapters 1 and 2). Secondly, the rationale for the study was reiterated, leading into an articulation of the research questions that guided the study. Thirdly, a mixed methods approach was advanced as a suitable methodology, and fourthly the specific research design and process were explicated. The research design and process part of Chapter 3 included six subsections, these involving the provision of a rationale for the selection of UKZN as the institutional case study, the description of the mixed method design, a description of Phase 1 (i.e., the quantitative phase, including the

quantitative data analysis), a preview of the Phase 1 results, and a description of Phase 2 (i.e., the qualitative phase, including the initial qualitative data analysis steps). The research design and process section of Chapter 3 was concluded with a description of how the data analysis was integrated across quantitative and qualitative modes, this relying on the conceptual framework of activity theory. In bringing Chapter 3 to a close, certain ethical considerations were highlighted, and then certain quality practices and principles specific for mixed methods research were provided. Having now presented the methodology used for this study, the following two chapters (i.e., Chapters 4 and 5) provide a quantitative and qualitative representation of the phenomenon of exceptional academic achievement in South African higher education. These two preliminary results chapters precede four theoretically driven chapters (i.e., Chapters 6, 7, 8, and 9), which in turn underpin a theoretically generative chapter (i.e., Chapter 10).

Part 3. Descriptive Findings and Data-Driven Analyses

- Chapter 4. A Quantitative Representation (and Explanation) of Exceptional Academic Achievement
- Chapter 5. A Qualitative Representation (and Explanation) of Exceptional Academic Achievement

Chapter 4. A Quantitative Representation (and Explanation) of Exceptional Academic Achievement

4.1 Introduction and Overview of Chapter

In the previous chapters, it was noted that since the 1980s, South African higher education had witnessed an increasing number of and interest in quantitative studies of academic (under)achievement in the sector (CHE, 2010). It was also noted that there appeared to be an absence of quantitative representations of exceptional academic achievement, as well as an absence of engagement with the phenomenon in general (see subsection 1.2.3). Chapter 3 described the methodology employed in this study, and Chapter 4 is now presented in response to parts of this methodology, and in response to the apparent absence of engagement with quantitative representations of exceptional academic achievement.

Chapter 4 comprises two sections, beginning with a presentation of the descriptive statistics and multivariable analysis arising from Phase 1 of the study. Within the first section of the chapter, the sample used for Phase 1 of the study will be described in order to develop a clear picture of the nature and extent of exceptional academic achievement at UKZN. Details pertaining to the outcome, socio-demographic, and pre-university educational variables used in Phase 1 of the study will also be presented. The logistic regression model will also be reported on in the first section of this chapter. This model contributed to the development of a profile of exceptional academic achievement at UKZN and in South African higher education. The logistic regression model was necessary in that it allowed for the simultaneous analysis of the impact of multiple variables on an outcome (i.e., exceptional academic achievement at undergraduate level). Instead of only being able to identify the extent and distribution of variables such as race, gender, and matriculation results in the exceptional and ordinary graduation pools (a descriptive strategy), a logistic regression strategy enables these variables to be pooled and controlled for. Controlling for the predictor variables reduces possible confounding effects (Katz, 2011), enabling the development of a profile of exceptional academic achievement that could retain the constancy of other predictor variables while focusing on another.

The second section of Chapter 4 initiates a quantitative–qualitative dialogue. Specifically, this involves a presentation of the explanations of the findings from Phase 1 as provided by participants from the three focus group discussions. The presentation of the Phase 1 findings to a group of Phase 2 participants had importance in terms of the mixed method philosophy and design of the study. In particular, the act of presenting the Phase 1 findings (quantitative) into the qualitative dimension of the study highlights the dialectical and integrative stance of the design. Moreover, using the Phase 1 findings as a stimulus for discussion for Phase 2 participants also reinforced the iterative and dialectical stance adopted in this study. Finally, the production of co-constructed explanations pertaining to the findings from Phase 1 functions to enhance the inference quality of the findings and design quality of the study, these being aligned with the notion of validity in mixed methods research (Teddlie & Tashakkori, 2010).

4.2 Phase 1 Findings

The final quantitative sample for Phase 1 of this study included 20 120 UKZN graduates from undergraduate degree programmes. All graduates completed the final year of their undergraduate degrees at UKZN between the years 2006 and 2010 (inclusive). Of the 20 120 graduates, 641 (3%) graduated from their undergraduate degrees *cum laude* or *summa cum laude*.

4.2.1 The socio-demographic predictor variables.

Overall, African and Indian students constituted the majority of the graduates in the sample (39% and 44% respectively). The balance was made up of white students (17%). As mentioned in Chapter 3 (subsection 3.5.3.1), students classified as “coloured” and “other” were removed from the original database. When considering graduation patterns across the years included in the sample, a steady increase in the proportion (from 35% in 2006 to 49% in 2010) of African graduates was observed. The converse pattern was observed for Indian (from 45% to 39%) and white (20% to 13%) graduates.

Female students constituted 59% of the sample. An interaction⁵¹ between race and gender was included in the logistic regression model, with these subgroups in the sample comprising 27% Indian females, 23% African females, 17% African males, 16% Indian males, 9% white females, and 8% white males (see first row of Table 4-1). In addition, the proportion of graduates within each race/gender subgroup who received financial aid for their studies is also reported in Table 4-1. Overall, 23% of the sample included graduates who received financial aid, while the remaining 77% were either self-funded or recipients of scholarships or bursaries. Table 4-1 also captures the average graduation rate for the different race/gender subgroups at UKZN between the years 2006 and 2010.

Table 4-1
Socio-Demographics of the Quantitative Sample (N = 20 120)

	African		Indian		White	
	Female	Male	Female	Male	Female	Male
Proportion of sample	23%	17%	27%	16%	9%	8%
Proportion of sample who received financial aid	49%	50%	11%	8%	1%	1%
Graduation rate at UKZN ^a	14%	12%	21%	19%	28%	25%

^a Graduation rates were calculated by dividing the number of students (per race/gender subgroup) graduating from undergraduate degrees by the number of undergraduate students (per race/gender subgroup) enrolled at UKZN during the 2006 to 2010 period (CHE, 2009).

4.2.2 The pre-university educational predictor variables.

The mean matriculation score for all graduates in the sample was 36.29 ($SD = 7.32$), while the mean matriculation English symbol was 4.37 ($SD = 1.13$). The mean matriculation score for exceptional graduates in the sample was 44.87 ($SD = 5.57$), while the mean matriculation

⁵¹ “Interaction” is used in this context to refer to the interaction effect between two independent variables and their influence or impact on a dependent (or outcome) variable. In this study, race and gender were two independent variables that had an individual influence on the dependent variable of exceptional academic achievement. However, their individual influence on the dependent variable varied when moderated by the other dependent variable in the logistic regression model (Jaccard, 2001).

English symbol for this subset of the sample was 5.57 ($SD = 0.73$). The mean matriculation score is a cumulative score across a range of six matriculation subjects taken at high school. When compared to the College of Humanities, relatively higher minimum matriculation scores were⁵² required for entry into degree programmes in the UKZN College of Agriculture, Engineering and Science, College of Health Sciences, and College of Law and Management Studies. A Kruskal-Wallis one-way ANOVA⁵³ suggested a significant difference in matriculation scores between the four Colleges where $\chi^2(3, N = 20\ 120) = 3093.16, p < .001$. The mean rank for matriculation scores for the College of Agriculture, Engineering and Science was the highest, followed closely by the College of Health Sciences, and then the College of Law and Management Studies, and College of Humanities. Follow-up pairwise comparisons between the four Colleges were conducted via Mann-Whitney U tests.⁵⁴ The results indicated significant differences in matriculation scores between five of the six pairwise comparisons between the four Colleges. No significant difference in matriculation scores between the College of Agriculture, Engineering and Science and the College of Health Sciences were found.

Table 4-2 captures the proportion of graduates and exceptional graduates in the sample per College, indicating relatively large proportions of Humanities and Law and Management Studies graduates.

⁵² A change in the South African schooling system yielded a new set of final examinations (i.e., the National Senior Certificate in 2008) with different matriculation point score allocations to those presented in this thesis (Nel & Kistner, 2009). No UKZN graduates with National Senior Certificates for their matriculation examinations were represented in the database used in this study.

⁵³ A Kruskal-Wallis one-way ANOVA (a non-parametric method) was used as the matriculation point score data for each College did not meet the assumptions of normal distribution or homogeneity of variance (Weinberg & Abramowitz, 2008).

⁵⁴ The Kruskal-Wallis one-way ANOVA does not provide post-hoc tests to determine which of the pairwise comparisons are statistically different. Consequently, pairwise comparisons can be made via the use of the Mann-Whitney U test, however the value of the significance levels with these tests needed to be interpreted with caution in light of multiple testing (Dancey & Reidy, 2011).

Table 4-2
Graduates and Exceptional Graduates per College within the Quantitative Sample (N = 20 120)

UKZN College	Proportion of graduates	Exceptional graduates
Agriculture, Engineering and Science	21%	29%
Health Sciences	11%	21%
Humanities	34%	30%
Law and Management Studies	34%	21%

4.2.3 The outcome variable: Exceptional academic achievement.

As mentioned above, 641 (3%) of the 20 120 graduates included in the sample graduated from their undergraduate degrees *cum laude* or *summa cum laude*. This attainment requires a sustained high-level of academic achievement over the duration of the undergraduate degree, and for the purposes of Phase 1 of this study was intended to indicate exceptional academic achievement. The proportions of exceptional academic achievers per race/gender subgroups are included in Table 4-3. Specifically, row 2 of Table 4-3 suggests that only 1% of exceptional graduates were African female. This is in contrast to 23% of UKZN graduates in the sample being African female. Similarly, row 1 of Table 4-3 indicates that although only 9% of UKZN graduates in the sample were white females, 38% of the exceptional graduates were white female.

Table 4-3
Race and Gender, and Exceptional Academic Achievement in the Quantitative Sample

	African		Indian		White	
	Female	Male	Female	Male	Female	Male
Proportion of sample (N = 20 120)	23%	17%	27%	16%	9%	8%
Proportion of exceptional graduates (n = 641)	1%	2%	28%	14%	38%	17%

When considering graduation patterns across the years (from 2006 to 2010), it was observed that as the proportion of African graduates increased, so too did the proportion of African graduates who excelled. In particular, this increased steadily from 1% of all exceptional academic achievers in 2006 to 6% in 2010 (this being stratified according to race/gender group in Table 4-4). The changes in graduation patterns for all race/gender subgroups are also reflected in Table 4-4.

Table 4-4
Graduate and Exceptional Graduate Race/Gender Patterns in the Quantitative Sample

Graduate type	Race	Gender	2006	2007	2008	2009	2010	Total
Ordinary	African	Female	21%	21%	21%	25%	29%	23%
		Male	15%	15%	17%	18%	21%	17%
	Indian	Female	29%	29%	28%	26%	24%	27%
		Male	16%	17%	18%	17%	15%	16%
	White	Female	11%	9%	8%	8%	6%	8%
		Male	9%	9%	8%	8%	5%	8%
Exceptional	African	Female	1%	1%	1%	2%	4%	1%
		Male	1%	1%	5%	3%	2%	2%
	Indian	Female	25%	35%	23%	28%	28%	28%
		Male	19%	14%	10%	18%	10%	14%
	White	Female	41%	33%	44%	33%	40%	38%
		Male	15%	17%	18%	17%	17%	17%

4.2.4 Logistic regression analysis.

In addition to the above descriptive statistics, the first research question for this study was addressed through the development of a logistic regression model. This functioned to predict the likelihood of membership to the category of exceptional academic achievement on the basis of the aforementioned socio-demographic and pre-university educational variables.

Recommendations by Peng and So (2002) and Katz (2011) were considered in developing the model. Although model evaluations are included in the results, the aim of this study was not necessarily to generate a reliable model for predicting exceptional academic achievement.

Instead, the focus was on the relative measures of individual predictor variables in relation to the prediction of exceptional academic achievement in South African higher education (Meyers, Gamst, & Guarino, 2013). In fact, the model generated is statistically unsound for prediction purposes; however, the significant contributions by the reported predictor variables in the model are of relevance and interest to comment on. Table 4-5 presents the estimates obtained for the individual predictors from a logistic regression model fitted with interaction terms for the quantitative sample, as well as an evaluation of this model.

Table 4-5
Estimates for Logistic Regression Model

Predictor	B	S.E	Odds ratio ^a
<i>Quantitative sample (N = 20 120)</i>			
Race/gender ^b			
African female	-2.795***	.348	.061
African male	-1.879***	.290	.153
Indian female	-1.596***	.109	.203
Indian male	-1.684***	.136	.186
White male	-.629***	.130	.533
Financial aid	-.882**	.293	.414
Matriculation score	.175***	.012	1.191
Matriculation English symbol	.505***	.079	1.657
Constant	-11.889	.460	
Model evaluation			
X^2	1569.582***		
-2 Log likelihood	4110.113		
Cox and Snell R^2	.075		
Nagelkerke R^2	.305		
Hosmer and Lemeshow X^2	52.814***		

^a Odds ratios only reported for statistically significant coefficients

^b White female = reference category

* $p < .05$; ** $p < .01$; *** $p < .001$

In summary, the logistic regression model suggests that all variables of race and gender, financial aid, matriculation score, and matriculation English symbol had a strong influence on the odds of exceptional academic achievement. African female, African male, Indian female, Indian male, and white male students appeared to be significantly less likely to excel academically when compared to white female students. When controlling for race and gender, a one-unit increase in matriculation score increased the odds in favour of being an exceptional academic achiever by a factor of 1.19, while a one-symbol improvement in the matriculation English symbol increased these odds by a factor of 1.66. In addition, when controlling for race, gender, matriculation score, and matriculation English symbol, the likelihood of exceptional academic achievement for students on financial aid appeared to be significantly reduced when compared to those not on financial aid.

The overall model was found to be significant with $\chi^2(8, N = 20\ 120) = 1569.582, p < .001$. However, the Hosmer and Lemeshow chi-square was statistically significant where $\chi^2(8, N = 20\ 120) = 52.814, p < .001$. The Hosmer and Lemeshow goodness-of-fit statistic “compares the estimated to the observed likelihood of outcome for the groups of subjects” (Katz, 2011, p. 143). This test involves the sample being divided into subgroups, the subdivision and subsequent allocation to subgroups for subjects in the sample being based on that subject’s estimated probability of the outcome. So, for a ten group subdivision, the first subgroup would include the first ten per cent of subjects with the lowest estimated likelihood of outcome. The last subgroup would include the last ten per cent of subjects with the highest estimated likelihood of outcome. If the estimated and observed likelihoods across the subgroups are close, this would imply a logistic regression model with a good fit (i.e., implying that the model is a “good fit” for the actual observations in the sample). The Hosmer and Lemeshow chi-square statistic for the logistic regression model is high and significant (see Table 4-5). This significant result suggests that the predicted probabilities differed significantly from the observed probabilities, and this particular logistic regression model was therefore not an acceptable model to use for predicting exceptional academic achievement (Tabachnick & Fidell, 2007). As mentioned above, however, the potential value of the model lies within the significant contribution of the individual predictor variables.

4.3 Research Participants' Responses to the Findings from Phase 1

The second section of Chapter 4 presents a description of the focus group discussion participants' responses to the aforementioned findings. As mentioned in Chapter 3 (see subsection 3.5.5.1.1), at the start of each of the three focus group discussions, the findings from Phase 1 were presented as a stimulus for discussion. The participants were then asked to comment on the findings from their perspective. The inclusion of the participants' explanations in this chapter forms part of a strategy to enhance inference quality across the findings of this study (Tashakkori & Teddlie, 2003). In addition, this strategy aimed to develop a dialogue between quantitative and qualitative modalities, and aid the integration and synthesis of the mixed methodological design.

During the presentation of the Phase 1 findings to the focus group discussion participants, I focused on two central points. Firstly, I described the sample (i.e., descriptive statistics from Phase 1). This involved reporting on the number of students who had obtained undergraduate degrees from UKZN between the years 2006 and 2010. I also described various stratifications within the UKZN sample specifically focusing on proportions pertaining to race (39% African, 44% Indian, and 17% white), gender (59% female, 41% male), financial aid allocation (23% yes, 77% no), matriculation score (mean = 36.29, standard deviation = 7.322), and matriculation English symbol (mean = 4.37, standard deviation = 1.13, where A = 6, B = 5, C = 4, D = 3, E = 2, and F = 1).

Secondly, I went on to present the logistic regression model that arose from the sample generated for this study. This was pre-empted by a brief explanation of the statistical methodology of logistic regression (see subsection 3.5.3.2). Specifically, I explained that logistic regression is a statistical method that could help explain the relationship between a certain dichotomous outcome variable (e.g., whether a student passes or fails) and a range of other variables (e.g., matriculation results, gender, socio-economic status, time spent studying) that may simultaneously be associated with that outcome. I also explained that, although logistic regression was originally and predominantly used in epidemiological research to identify the presence or absence of disease (Katz, 2011), the method had also been used in higher education

studies since the early 1990s (Peng & So, 2002). With regard to the latter, I reiterated the example of predicting a dichotomous outcome in education (e.g., pass or fail), indicating that an obvious value of this could lie in the early identification of students who (on the basis of measurable and pre-existing variables) are most at risk for failure or poor academic performance. Mechanisms could then be put in place to support these students. I also mentioned to the participants in the focus group discussions that logistic regression methodologies were not always used to predict negative outcomes (such as risk of failure), but could also be used to predict a student's likelihood for success. Reference was made to a relevant and recent example of this type, namely a study into the factors that predict Hispanic student success and persistence in USA (Crisp & Nora, 2010). It was along this line that I explained the rationale for conducting a logistic regression methodology with the sample of UKZN graduates (see 3.5.3.1 and 4.2.4). I advised the participants that I was interested to know who in the sample (especially when controlling for available predictor variables) was most likely to excel. Although it was possible to explore this via descriptive statistics, these statistics were not able to accommodate the potential confounding influences of multiple factors on an exceptional academic achievement outcome. I suggested to the focus group discussion participants that my interest in predicting exceptional academic achievement at UKZN was informed by my belief that this was something that was highly valued and sought after in South African higher education (see Chapter 1, section 1.3). I suggested that if UKZN could reliably isolate the factors that were most associated with the phenomenon of exceptional academic achievement, lecturers within the institution could then understand the phenomenon better, as well as explore strategies to enhance a student's likelihood of excelling academically. In addition, it was important to mention to the participants that if the factors that were negatively associated with exceptional academic achievement were better understood, strategies could be devised to counterbalance the likely impact of these factors on a student's academic achievement trajectory.

In the description of the logistic regression model to the focus group discussion participants, I focused on the odds ratios for each independent predictor variable in the model, given that these are most readily understandable. When controlling for financial aid, matriculation score, and matriculation English symbol, I reported how the model indicated that when compared to white

female students, all other race and gender subgroups of students were significantly less likely to excel. For example, white female students were 16.39 times more likely to excel⁵⁵ than African female students, 6.54 times more likely to excel than African male students, 4.93 times more likely than Indian female students, 5.38 times more likely to excel than Indian male students, and 2.42 times more likely to excel than white male students. I also reported how the model suggested that students who received financial aid were 2.42 times less likely than students not on financial aid to excel academically. Furthermore, it was also highlighted that for each matriculation point increase students had upon entry into UKZN, their chances of exceptional academic achievement increased by a factor of 1.19. So, as a student's matriculation score increased, so too did his/her likelihood of excelling academically. Finally, I also highlighted that for every increase in matriculation English symbol that students had upon entry into UKZN, they were 1.66 times more likely to excel academically. I also reiterated that the individual predictors of race, gender, financial aid, matriculation score, and matriculation English symbol should not be interpreted in isolation. The logistic regression methodology allowed each variable to be kept constant, so that the relative impact that each variable had on exceptional academic achievement could be identified. So, for example, the logistic regression model developed for this study implied that even when two female students (one African, and one white) entered UKZN with the same matriculation scores, matriculation English symbols, and financial aid allocation, it was still significantly more likely that the white female student would excel.

I turn now to a description of the explanations and interpretations that the focus group participants (across all three focus group discussions) offered in response to the findings from Phase 1. These are organised according to the five variables used in the logistic regression methodology; however, this is preceded by a general overview and impression of the focus group participants' response to the findings from Phase 1. When considering the five variables, the explanations offered by the participants occasionally intersected with other variables, this being

⁵⁵ A ratio of 1:16.39 could be used to express these odds in favour of white female students, where $1/16.39 = 0.061$. The latter is the odds ratio as reported for African female students in the logistic regression model Table 4-5. In summary, for every African female student who excels academically, 16.39 white female students excel.

an expected outcome given the interconnected nature of the variables. The participant explanations and interpretations functioned to bring the quantitative and qualitative modes of data production into dialogue, reinforcing the dialectical nature of the research design.

4.3.1 General overview and impression.

Although there were several responses and explanations to the Phase 1 findings, a prominent reaction was one of shock and anger, and an almost immediate urge to (re)act. For example, after the presentation of the Phase 1 findings during the focus group discussion held on the Pietermaritzburg Campus, Sindi (FGD 1⁵⁶, 113, 327) remarked, “They’re shocking [and]⁵⁷ the question is how can that be changed?”⁵⁸ Here, Sindi signalled an immediate shock in relation to the injustice associated with the findings, and specifically the finding that African students are severely underrepresented in the exceptional academic achievement cohort. As the focus group discussions progressed, it became evident that many of the participants attributed the path towards exceptional academic achievement for underrepresented groups as being grounded in anger and/or the persistent injustice and inequity associated with the Phase 1 findings. Although referring specifically to females who excel academically, Lethiwe noted that, “Females have the drive to perform better now that they have more opportunities” (Lethiwe, FGD 2⁵⁹, 254). In contextualising her statement, Lethiwe went on to assert that,

⁵⁶ FGD 1 refers to “focus group discussion 1”, this discussion having taken place on the UKZN Pietermaritzburg Campus.

⁵⁷ To retain the integrity of the participants’ voices, I have relied on verbatim transcriptions when referring to and using the participants own words. Therefore, grammar or expression “errors” in the participants’ words were not indicated as such or corrected in the write-up of the thesis. Where appropriate, I have used brackets and double parentheses to provide points of clarity pertaining to the content and process dimensions of what the participants said (see Appendix 15 for a description of the transcription symbols used).

⁵⁸ When weaving the research participants’ own words (as transcribed verbatim from the audio-recordings) into the main body of the text, I denote these words with inverted commas (i.e., direct speech). In addition to the direct speech, the source (e.g. focus group discussion 1 [FGD 1]) and the line number from the transcribed audio-recording are provided.

⁵⁹ FGD 2 refers to “focus group discussion 2”, this discussion having taken place on the UKZN Westville Campus.

We want to get better jobs than compared to the past when they [women] didn't have these opportunities. So, now with the access to education and everything that they [women] can do, they are more driven and want to succeed. And probably, want to complete a degree in the shortest time, so that they can get good jobs or even probably further their education. (Lethiwe, FGD 2, 257)

Similarly, Mayibongwe asserted that “younger students [who now have more educational opportunities than their parents did] ... have that anger⁶⁰, I can put it (.)⁶¹ to make things right” (Mayibongwe, FGD 2, 38).

4.3.2 Race and gender.

Explanations pertaining to the relatively decreased odds of exceptional academic achievement for African female students were offered in two of the three focus group discussions.

Explanations for these decreased odds arose mostly from the African male focus group participants, who suggested that African female students were probably less likely to excel because of their relationships with men. Some of the male focus group discussion participants agreed that African female students' relationships with men tended to have adverse consequences on their academic performance. Mzolisi remarked, “Our sisters, they get pregnant and go back home” (Mzolisi, FGD 1, 317), highlighting what he perceived as a high incidence of pregnancy among African female students, and the subsequent need for them to “go back home.” Although there may be a number of reasons why African female students need to desist from continuing their studies and return home after falling pregnant, it was implied from Mzolisi's comment that the impact of pregnancy on African female students studying and academic achievement and progression could be detrimental. When another focus group participant rationalised that perhaps there were more Africans at UKZN, and so pregnancy in African female students was logically more prevalent and noticeable, another participant contested that “African people. We do those things! They do fall pregnant more. Even if they reduce the number and increase whites, I think we still fall pregnant more!” (Sindi, FGD 1, 363). In closing

⁶⁰ Underscored text within a verbatim transcription denotes stress or emphasis as indicated by the speaker's tone, pitch, or expression (see Appendix 15 for a description of the transcription symbols used).

⁶¹ A dot in parentheses indicates a gap in conversation that the researcher assessed as not being adequately catered for via usual punctuation. The length of these gaps is usually between one and three seconds (see Appendix 15).

the discussion on the issue of pregnancy in African female students, Mzolisi (FGD 1, 405) reiterated, “Our sisters they’re moving in too much with the guys.” By “moving in”, I suggest that Mzolisi was referring to associating with and being involved with men, rather than physically moving in to shared accommodation.

The presentation of the findings from Phase 1 to the focus group participants also implied that on average, female students (when not stratified by race) academically outperformed male students. In response to this, Lethiwe explored the possibility that women were “more focused in their studies [also suggesting that] they can multitask better than guys” (Lethiwe, FGD 2, 168). Nqobile agreed with Lethiwe saying, “I think women are strong, when it comes to coping with stress. But ja⁶², what I can say is that we can multitask” (Nqobile, FGD 2, 173). Lethiwe and Nqobile indirectly referred to three study strategies (i.e., focus, coping with stress, and multitasking) within their contributions to the focus group discussions. They perceived that these characteristics may assist female students to excel academically, and Lethiwe later reinforced this with reference to her perception that, “Females have the drive to perform better” (Lethiwe, FGD 2, 254). In further discussing what they perceived as strong feminine characteristics that may enhance academic achievement in female students, Lethiwe and Nqobile also introduced a historical dimension to the discussion. In elaborating on female students’ focus, multitasking, and stress-coping abilities, Nqobile went on to say,

... looking at my background, my mother’s background, my grandmother’s background. They were not exposed to this stuff as women. They were put below. So I’m given this opportunity to come to university, to do well (.) to focus on here (.) the academic. (Nqobile, FGD 2, 174)⁶³

Nqobile’s latter comment links and contrasts two constructs. In relaying a personal and study strategy (i.e., focus) that she attributes to female students, she simultaneously contrasted this with previous generations of women being oppressed (“put below”), and not having the

⁶² “Ja” is a common South African expression for “yes” (<http://www.southafrica.info/travel/advice/saenglish.htm#.Ur1B8vuzIpo>).

⁶³ Where research participants’ own words are included and these exceed a 40-word count, this has been distinguished via double indentation and single spacing.

opportunity to focus on higher education studies. As identified above (see subsection 4.3.1), Lethiwe concurred with the notion that women excel today as a reaction against being denied opportunities in the past. She suggested that, "...now with the access to education and everything that they [women] can do, they are more driven and want to succeed" (Lethiwe, FGD 2, 256).

Participants in the third (Howard College) focus group discussion did not seem to respond to the invitation to explain why the findings from Phase 1 positioned African female students as the least likely to excel academically when compared to white female students. In fact, when referring to African female students whom he studied with, Bongane indicated,

...I'm studying with older [African] females who are married, and I've been inspired by them. They've also been getting merit certificates since our first year and I'm quite (.) my experience, it's contrary to this [the Phase 1 results]. We've been competing with them for the past years. (Bongane, FGD 3, 51)

Although also referring to their age and marital status ("older females who are married"), Bongane nonetheless questioned the findings from Phase 1 of the study, offering his experience as being different from these findings.

The most striking finding from the logistic regression model was that female students in general outperformed their male counterparts at the exceptional level; however, when stratified according to race, this advantage did not hold for African female students. In responding to this finding, the focus group participants offered a layered explanation and interpretation. In particular, they brought to the fore their perceived relationship between "early" pregnancy in African female students and the effect this has on the level of their educational achievement. In contrast, explanations were also offered as to how and why female students in general managed to outperform male students. For example, several characteristics (e.g., capacity to multitask and coping with stress) were attributed to women by the focus group participants, and identified as possible reasons why female students excel. In addition, some of the female focus group participants highlighted the drive that they had to excel as being grounded in their maternal and family histories. It was explained that they realised they had more educational and career

opportunities than their mothers and grandmothers did, and so did not want to waste these opportunities with mediocre performance or through failure.

The focus group participants provided several explanations as to why they perceived white students (regardless of gender) as being at a relative advantage when it came to exceptional academic achievement. Although this advantage was not explicitly stated when the findings from Phase 1 were presented to the participants, it was probably inferred via the use of white female students as the reference group for the logistic regression, and white male students having the next closest odds of exceptional academic achievement in relation to the reference group.

The focus group participants perceived that white students had “an advantage when it comes to resources” (Lethiwe, FGD 2, 138). Lethiwe further clarified that by resources she meant “having people to help you when it comes to understanding something that you can’t grasp at school.” Although Khulekani and Nqobile identified that white students also appeared to have more financial resources (and could therefore buy relevant study aids such as laptops and textbooks), they also focused on the “people” resources referred to by Lethiwe above. Khulekani remarked, “White families; their background is informed by being educated, so there is that support which comes from their families” (Khulekani, FGD 1, 314). Similarly, it was identified that familial support is very important while studying, and this was linked to white students by virtue of “the fact that their [white students’] parents are educated” (Nqobile, FGD 2, 155). Nqobile went on to explain her experience where, “Even if you [an African student] call at home, they don’t understand what you are talking about; this academic thing of yours. Our parents are not educated. If they [white students] talk to their parents, there is this relationship” (Nqobile, FGD 2, 157).

4.3.3 Financial aid.

The findings from Phase 1 also suggested that students who were funded by financial aid were significantly less likely to excel academically than students funded via other means.

Explanations for this finding from the focus group participants focused on three themes. Firstly, the participants perceived that being on financial aid did not exert the necessary pressure on its

funding recipients to perform academically. Secondly, the participants referred to several hypothesised inferences about students on financial aid, and what these could imply for academic achievement. Thirdly, a theme pertaining to the maladministration of financial aid and the impact of this on academic performance was raised.

During the third focus group discussion, Xolile suggested that students using financial aid did not “care about studying seriously” (Xolile, FGD 3, 84) because these students knew that financial aid would pay for their fees regardless of how they performed academically. While not strictly an accurate assumption, she compared this to students who were self-funded, claiming that the knowledge that their parents were paying for their fees would encourage them to be serious in their studies. In another focus group discussion, Zanele and Hloniphile concurred on the point that students receiving financial aid did not necessarily experience a pressure to excel academically in order to retain their funding. Hloniphile justified her claim by remarking,

...students who are on financial aid are (.) financial aid require only 50%. Like if you do four modules you have to pass two, then you know that you are secure. Even next year you will have that financial aid. But on bursaries they require an aggregate of 65. (Hloniphile, FGD 1, 165)

Although the sentiment regarding financial aid and an absence of pressure to perform were evident across all three focus group discussions, one of the participants did assert that his experience of receiving financial aid was not aligned with these sentiments. He explained that when he did not receive financial aid in the first semester of his first year, he “failed dismally as there was no way to support [him]self” (Mfundo, FGD 3, 128). After receiving financial aid in the second semester, Mfundo indicated that he started doing well academically.

The second theme that was evident from participants’ explanations around the relatively decreased odds of exceptional academic achievement for students on financial aid pertained to the inferred socio-economic status and subsequent access to (financial and educational) resources for students on financial aid. Several of the participants referred to specific educational resources that they thought students on financial aid would struggle to access because of the implied socio-economic status of the family they came from. For example, Johnson identified, “Most students

who are on financial aid (.) tend not to perform well, because they don't have enough resources in terms of laptops, computers, and other books" (Johnson, FGD 3, 106). Similarly, Nqobile identified that financial aid was limited and could constrain a student's ability to access textbooks and other study materials. She also added that a student who was using financial aid could come from a background and family situation that was unable to support and inclined "to disturb you in a way that you can't study like someone who is settled" (Nqobile, FGD 2, 79). Ntokozo also extended the association between financial aid students and financial/educational resources (e.g., laptops, textbooks), claiming that being funded by financial aid also implied not having adequate support in other areas.

You are there by yourself whereas with the students that are from better backgrounds, I think there is more family support. And I think that support (.) I mean it's not just about support in terms of money but also in terms of structures (.) I think there aren't as great structures for students who are on financial aid. (Ntokozo, FGD 3, 82)

Ntokozo's and Nqobile's statements implied an association between a lack of financial support with deficits in the structure and nature of family support required for successful studying in higher education. Similarly, Joy also inferred "that most students on financial aid are those who come from poor backgrounds and an education system that is not okay" (Joy, FGD 3, 69). So, in addition to attributing poverty to being on financial aid, Joy also associated financial aid with students from an inadequate schooling system.

Thirdly, a theme of maladministration of the financial aid funding system appeared in two of the three focus groups discussions. It was suggested that financial aid administrative problems contributed to the decreased odds of exceptional academic achievement for students who were receiving financial aid. Both Johnson and Maipfi commented on the lateness with which financial aid was allocated at UKZN, and claimed that this adversely affected students' stress levels and capacity to focus on their studies.

... because NSFAS sometimes it pays late and some of them they are always stressing even in the middle of the year they're stressing where will they get money to buy this, when will they get money for food and everything. So they can't focus very well on their studies but they are focusing on how to get money. So, where I'm

going to eat next week? What I'm going to do? Should I call my parents or what? That's just the reason. (Johnson, FGD 3, 108)

The above three explanatory themes suggest that the participants on the focus group discussions were readily able to identify reasons why students on financial aid could be less likely to excel academically when compared to those students who were not on financial aid. In contrast, some of the participants asserted that students on financial aid should and could excel academically. For example, Sifiso identified that coming from a disadvantaged background (which he inferred would be the case for students on financial aid) should motivate a student to excel. He questioned the findings from Phase 1 of the study in this regard saying, "So, I don't understand how the statistics went there" (Sifiso, FGD 2, 67). In agreement with Sifiso, Mayibongwe also indicated, "If you use financial aid you can perform well" (Mayibongwe, FGD 2, 95). Furthermore, both Mayibongwe and Sifiso responded to Nqobile's earlier comment around her perceived lack of family support and the tendency for these family situations to distract students on financial aid. "I wouldn't expect you to feel a pressure from the (.). I would expect them to perform well, really!" (Sifiso, FGD 2, 86). Mayibongwe added, "I can use other people to help me (.) you can tell other people to help you, like your friends if you don't have money to buy books" (Mayibongwe, FGD 2, 96). In effect, Mayibongwe and Sifiso offered a less sympathetic view towards students on financial aid, choosing rather to suggest strategies that financial aid students should use to cope when they did not have the support of their families.

4.3.4 Matriculation score and matriculation English symbol.

Perhaps an expected finding from the Phase 1 results pertained to the increased likelihood of exceptional academic achievement for higher education students who had relatively high matriculation scores. Although participants attending the Westville focus group discussion never offered explanations on this point, participants from the Pietermaritzburg focus group discussion commented on this aspect of the findings. They chose, however, to focus on the difficulty they perceived that students from disadvantaged schools had in attaining high matriculation scores. In referring to herself, Hloniphile remarked,

Some students like me gets lower points in matric cos maybe their schools have insufficient resources. Like for us in science we need laboratories. Maybe their

schools were disadvantaged schools with no laboratories? When they come here, they have to adapt in laboratories right, but then others, they fail to adapt, but then others they do. I think it doesn't really count how many points you get in your matric. (Hloniphile, FGD, 1, 282)

In this quote, Hloniphile extended the suggestion that it was difficult for students from disadvantaged schools to attain a high matriculation score. She did so by suggesting that some students from disadvantaged schools could not adapt to the demands of higher education (especially in relation to using laboratories) and subsequently failed. She claimed, "It doesn't really count how many points you get in your matric" (Hloniphile, FGD 1, 284), suggesting that some students who do not excel in their matriculation results could still go on to excel at university. In agreement with Hloniphile, Khulekani remarked, "36 points plus [a 36 or higher matriculation score] is quite a mission if you come from a previously disadvantaged school. So, even your entry into university is quite a challenge" (Khulekani, FGD 1, 291).

Similar to the findings pertaining to matriculation score, relatively high matriculation English symbols were also found to be associated with increased odds of exceptional academic achievement in higher education. In responding to this finding, many of the participants from the focus group discussions also linked performance in matriculation English to their school background.

So, the university assumes that because I got an A in English and I got to university (.) I can talk English well, but I went to a township school.⁶⁴ I did English in second language and I passed, but it doesn't mean I'm competent in everything, so my what (.) vocabulary I don't think it will ever match a white person. (Sibongile, FGD 3, 174)

Whereas relatively high matriculation scores were perceived by students from disadvantaged schooling backgrounds as difficult to obtain, when they did obtain high symbols for matriculation English, this was discredited as being a good predictor of future academic

⁶⁴ In South Africa, a township usually refers to a low-cost residential area that was historically established for black labourers so that they could live closer to their place of work (Mampane & Bouwer, 2011). Bush and Heystek (2003) identified that the townships were associated with poverty, and schools situated in townships (i.e., township schools) were therefore under-resourced and disadvantaged.

performance. For Sibongile, this was because it was obtained at a township school, and was examined at second language level.

In summary, subsection 4.3 provided a descriptive explanation and interpretation of the logistic regression model developed during Phase 1 of the study. However, the explanation and interpretations were from the perspective of high-achieving African students, who ironically were positioned as less likely to excel in the model. In response to each of the independent variables (predictors) used in the logistic regression model, the participants across all three focus group discussions perceived African female students as less likely to excel because of distracting relationships with men and pregnancy during their studies. These factors were provided as possible reasons as to why African females were underrepresented in the exceptional academic achiever cohort. Interestingly however, white and Indian female students tended to outperform their male counterparts, but the focus group participants did not provide possible explanations of why this might be the case. They did, however, point out their perceived association between being a white student and having access to financial resources and familial support. In contrast, persistent themes around having to be “there [at university] by yourself” (Ntokozo, FGD 3, 82) as an African student arose, especially in relation to the kind of educational support that their families could offer. Finally, the focus group participants also explained that pre-university educational achievement (e.g., in the form of matriculation score, and matriculation English symbol), was dependent on the type of schooling system a student came from. Although the association between high matriculation results and subsequent exceptional academic achievement at university was not disputed, the participants reiterated the impact that resource constraints had on academic achievement (at both schooling and university levels).

4.4 Concluding Remarks

Chapter 4 is the first results chapter of this thesis, and has presented the findings from the quantitative phase of the study, as well as the explanations and interpretations offered on these findings by the participants from the qualitative phase of the study. The mixing at interpretation and reporting levels in this thesis operationalises the dialectical stance assumed in this study, and assigns an analytic and interpretive role to the qualitative research participants. Although the

logistic regression model is not reliable for predictive purposes, it did provide a profile of exceptional academic achievement at UKZN. I also suggest that this profile could be transferable beyond UKZN to the notion of South African higher education in general, especially in light of the rationale for the selection of UKZN as the institutional case study (see subsection 3.5.1).

In effect, even when controlling for certain pre-university academic performance variables, and financial aid, the model affirmed a race-based advantage in the domain of exceptional academic achievement in South African higher education. It was for this reason that sampling decisions for Phase 2 of the study were made, and the following chapter presents descriptive accounts of four research participants. Whereas Chapter 4 presented a quantitative representation (and explanation) of exceptional academic achievement at institutional and national level, Chapter 5 presents a qualitative explanation of exceptional academic achievement at individual level. Moreover, the qualitative explanations are unique in that they belong to underrepresented examples of exceptional academic achievement in South African higher education.

Chapter 5. A Qualitative Representation (and Explanation) of Exceptional Academic Achievement

5.1 Introduction and Overview of Chapter

In the previous chapter, a quantitative representation (and explanation) of exceptional academic achievement in South African higher education was provided. This provision involved two sections, the first including a logistic regression model which identified the odds for exceptional academic achievement on the basis of a range of socio-demographic and pre-university educational variables. An interpretation and explanation of the logistic regression model was provided in the second section of Chapter 4, as derived from several focus group discussion participants. Overall, Chapter 4 represented an entry into the findings for this study, presenting an institutional account of exceptional academic achievement in South African higher education. Chapter 5 represents a shift towards individual accounts of exceptional academic achievement, and highlights two notions of importance within these accounts. The first pertains to a vision for the future, and the second to epistemic access.

Chapter 5 presents qualitative data-driven and photographic-infused descriptions from four research participants who contributed to all three sub-phases of the qualitative data production process. Although these descriptions are of individual accounts of exceptional academic achievement at the undergraduate level, as detailed in Chapter 3, these accounts emanate from students who, on the basis of the logistic regression model presented in Chapter 4, were identified as being unlikely to excel but were excelling nonetheless. The individual accounts are organised around two themes that arose during the initial qualitative data analysis processes (see Chapter 3, subsection 3.5.5.2), the first theme being described as “a vision for the future.” Within this theme, sub-themes pertaining to educational and family history and emotion are evident. The second theme refers to the ways in which epistemic access was negotiated by and afforded to the research participant. The second theme focuses specifically on the educational experiences the participants have had, and the educational strategies they employed in their pursuit of exceptional academic achievement. The descriptions in Chapter 5 are also related to the second and third research questions for this study, these pertaining to the processes engaged in and the

reasons provided for exceptional academic achievement in undergraduate students who were identified as unlikely to excel.

Four participant descriptions are presented in Chapter 5, and these include the descriptions of one participant from each of the four UKZN Colleges. Each participant description drew on the data forms of transcriptions arising from the three focus group discussions conducted with 18 participants, a selection of the 53 photographs taken by the four participants, and transcriptions arising from the four individual photo-elicitation interviews that the participants attended.

5.2 Sikhumbuso (College of Agriculture, Engineering and Sciences)

Sikhumbuso was a 29-year-old second-year Bachelor of Science degree (Maths stream) student during the data production process. He started working directly after matriculating in 2001, and commenced his higher education studies at UKZN ten years later in 2011.

5.2.1 A vision for the future: “I want her to be free.”

Early in the focus group discussion that Sikhumbuso attended, the participants discussed the pressures of studying (such as financial constraints and lack of family support), and how these may or may not influence academic performance. In commenting on how he coped with pressure, Sikhumbuso asked, “Who is going to support my mother if I don’t do well here?” He further added, “So [with] those questions, I manage to overcome the pressure” (Sikhumbuso, FGD 2, 92), thereby affirming how he managed study-related pressures. It was thus not unexpected when Sikhumbuso presented a photograph (see Photograph 5-1) of his mother for discussion during the photo-elicitation interview.



Photograph 5-1. Untitled (Sikhumbuso H9)

I don't know what can I call it? (.) But I will describe the title. I think for me, my mom is someone who has been through a lot her entire life and (.) eish⁶⁵. It's a problem (.) It's a lot (.) ((Sikhumbuso started to cry at this point)) But I think she is (.) I am someone who is going to give her happiness one day. So, that's what I want is to give her happiness. Ja (.) Ja (.) sorry. (Sikhumbuso, PEI 8⁶⁶, 331)

Sikhumbuso clarified, “My father passed away at an early age, [and he has] this thing that [he needed] to take care of her [his mother]” (Sikhumbuso, PEI 8, 378). Sikhumbuso's vision for his future was “to give her [his mother] happiness one day” (Sikhumbuso, PEI 8, 331). Prior to discussing the photograph of his mother, it emerged that Sikhumbuso was raised by his paternal grandmother. He reported not being able to recall the circumstances surrounding this arrangement, other than

At some point my gran [grandmother] actually said to my mom or whatever that I have to stay with her for some reason (.) But what I know is that I used to visit my mom, and (.) Ja. I don't know really, I don't know (.) There might be some or other

⁶⁵ “Eish” is a common South African expression of surprise or frustration (<http://www.southafrica.info/travel/advice/saenglish.htm#Ur1B8vuzIpo>).

⁶⁶ PEI 8 refers to “photo-elicitation interview 8”, held with Sikhumbuso. The photo-elicitation interviews, conducted with the eight research participants who completed the auto-photographical component of the research, were numbered from 1 to 8 in the order in which they were conducted.

conflicts that happened there I feel (.) What ever happened, but I'm okay. (Sikhumbuso, PEI 8, 476)

In discussing Photograph 5-1, Sikhumbuso remarked that it was taken during the mid-year vacation when he went to visit his mother. When asked where the photograph was taken, he noted,

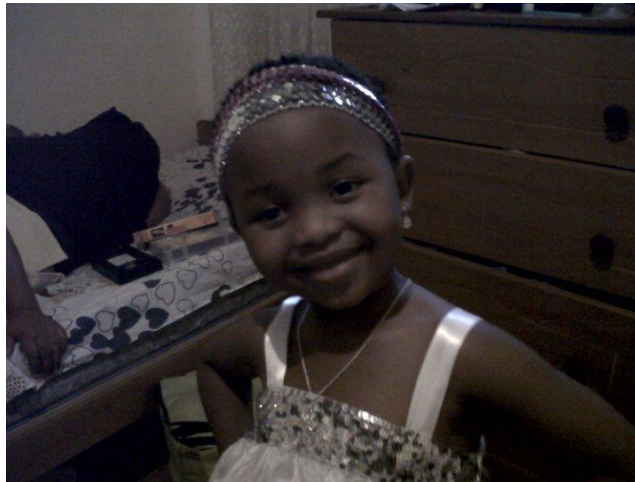
Outside the (.) this is where she is working [the house depicted in Photograph 5-1]. So it's just outside. She was waiting for them to actually open up for her and so, when I came I found her outside so. I didn't even go in. So I feel like she is not free you know (.) she is not free. This is not what I want for her. The guy that she is working for is brilliant. He actually (.) he is helping her to build a house out of what he puts together, but she has been working for him for over ten years. He is a good guy, but I feel that she needs to rest. (Sikhumbuso, PEI 8, 776)

Later during the interview, I remarked, "There is a gate there" (Nick, PEI 8, 799) in Photograph 5-1, to which Sikhumbuso replied,

And she has to wait. You can see that (.) that she is begging for (.) she needs this work to survive you know. I want her to be free. I want her to work if she wants to. But for me if I finish, I do everything correctly I want her to stay with me. I want her to be free. I want her to say finally I am happy. (Sikhumbuso, PEI 8, 805)

Sikhumbuso used the words "free" and "freedom" frequently when discussing the photograph of his mother, suggesting that her emancipation was related to his taking care of her after he had graduated. This theme was also reinforced when he referred to finding his mother outside her place of employment waiting for her employer to open the gate for her. Although not specifically referred to during the photo-elicitation interview, the inadvertent inclusion of a gate in Photograph 5-1 was significant in that it reinforced a theme of freedom, or in this instance of not being free. Importantly, gates have the potential to open or be opened, and it was almost as if Sikhumbuso positioned himself as being able to open the gate to a future freedom for his mother. This was evident when he claimed, "If I finish, I do everything correctly I want her to stay with me. I want her to be free" (Sikhumbuso, PEI 8, 804). It was not adequate for Sikhumbuso to just finish his degree. He emphasised doing "everything correctly", alluding to the high standard of achievement he attained and expected of himself.

It was useful to position the above theme of freedom for Sikhumbuso's mother (and current status of not being free) in relation to Photograph 5-2 (see below). Photograph 5-2 depicts Sikhumbuso's daughter. This was the first photograph that he chose to present and discuss during the photo-elicitation interview. After giving this photograph the title of "My angel, my inspiration", Sikhumbuso remarked, "I am studying so I can have a better future so that she can have a better future" (Sikhumbuso, PEI 8, 32).



Photograph 5-2. My angel, my inspiration (Sikhumbuso C1)

Later in the photo-elicitation interview, after discussing Sikhumbuso's relationship with his daughter's mother, the conversation proceeded as follows:

Nick: We have spoken a bit about this photo [referring to Photograph 5-2], and why you took it. As you say she is your inspiration, she is why you want to study hard and get a good job. Um, are there any other reasons why you took this photograph?

Sikhumbuso: Um. Just a memory of her. Just (.) you know to see my daughter. I mean I love her, so when I see her I take photos, that is if I can. Um, ja that's the main reason basically. Just a memory. Just seeing a photo inspires me to be better. I'm seeing a bright future here ((pointing to his daughter)) and it all depends on me. I would really hate it if she doesn't have a good future. (Sikhumbuso, PEI 8, 276)

Sikhumbuso did not position his daughter as needing to be freed like his mother. Although she did not reside with him at that stage, but with her maternal grandmother in another province, Sikhumbuso's daughter was an inspiration to him (an angel). He also positioned himself as being responsible for her "better future", even though her representation in Photograph 5-2 was positive. The photograph captured Sikhumbuso's daughter smiling with her hands on her hips, dressed in what appeared to be an adorned dress and headband. Unlike the locked gate that Sikhumbuso's mother could not open herself, Sikhumbuso's daughter was standing in front of a chest of drawers which I imagined that she was able to open herself.

Although two generations apart, Sikhumbuso's mother and daughter appeared to unify past and future in his academic achievement pursuits. It was through his exceptionality that he perceived their freedom and future prospects as more certain. For Sikhumbuso, freedom was an important and emotive outcome attached to his exceptional academic achievement. It was immediately recognisable how Sikhumbuso's vision for his future was linked to an intense emotion. He foresaw freedom for his mother and a bright future for his daughter in relation to his exceptional academic achievement. This prospect and the emotional energy attached to this were likely to be a highly motivational force.

Don't relax. Don't forget where you're coming from, and obviously you have to visualise where you're going ... So, don't lose that passion. Whatever that drives you, try to go back to that place, and visualise and ... (Sikhumbuso, FGD 2, 351)

Instinctively, Sikhumbuso picked up on an awareness of past ("where you're coming from") and future ("where you're going") when discussing motivational strategies for excelling academically. During the photo-elicitation interview with Sikhumbuso, he spoke about where he was "coming from." Here, he referred to two previous employment experiences, which he positioned as motivators of his current academic achievement aspirations. Sikhumbuso reported that, after matriculating, he did not have the funds to study, but managed to secure employment as an actuarial assistant in a financial services company. He reported enjoying this work, however found it frustrating in that, "What actually happened is that when someone comes from university, I would train that person, and then from there they go above me" (Sikhumbuso, PEI

8, 70). Although there were some other circumstances that also contributed to his resignation from this employment, Sikhumbuso realised that he needed to study in order to progress in the workplace. The transition to university study was, however, not direct or easy for Sikhumbuso. While waiting to hear if he had been accepted for a place to study and financial aid at UKZN in 2011, he worked as a toilet cleaner at Oliver Tambo Airport (the second employment experience from his past).

So it was really difficult. I used to stay in a shack (.) 2010 and I worked at um (.) um the airport. OR Tambo, I was cleaning toilets. That was in 2010. That was not pleasant, so that also motivated me to do well at school [university]. So ja. It wasn't easy. So there is a lot. I just take things as they come. So there is a lot. I could sit here and talk and some other things will come out you know. (Sikhumbuso, PEI 8, 585)

In addition to directly linking his unpleasant work experience to his current levels of motivation to do well at university, Sikhumbuso described how physically hard he worked at the airport, and how this has compelled him to achieve academically and progress in his future employment.

So, we had to stand there for 12 hours, it was six to six, and only get a one hour lunch. All that time you had to be standing. Standing. Ja, so eish, my feet were really (.) and if you are not used to it, but after some time, you get used to it. But you feel this is not where you want to be. It's not where you want to be. And you get paid peanuts. What we were doing there it's harder than studying. It's really really (.) in terms of thinking, no, but that's tiring on your body. It's really difficult. But then I think that's also helped me to respect people that are doing that job because I've been there now. I know, so I'm not just going to. Now when I go to the public toilet, I make sure that it's clean, cos now I understand. (Sikhumbuso, PEI 8, 645)

5.2.2 Epistemic access: Feelings and grounding principles.

Although Sikhumbuso mentioned several study strategies (such as working from the first day and working consistently), he repeatedly referred to the presence of “feelings” while studying, as well as several “grounding principles” that featured in his academic achievement efforts.

Don't just study. Study to know. Know the inside of something. Feel it. When you do something and you get the wrong answer, you're supposed to feel it. That means you really understand what you're doing. (Sikhumbuso, FGD 2, 275)

I don't know even when I'm doing maths. Not everything, some maths part is boring, but the main mathematics where you control things. You don't just study with your mind. You also bring emotions into it. So, I think that also helps me too (.) Cos for me, I don't just take things as they are. I talk to them. Probably why I think maths is better for me. (Sikhumbuso, PEI 8, 698)

In the above, Sikhumbuso referred to an experience of strong feelings and emotions while studying, and identified this as particularly so when he was studying mathematics. It was evident that for Sikhumbuso, the study and academic achievement process was not only a cognitive process, but also one that incorporated a strong emotive component. It was through the use of and energy created by emotions that Sikhumbuso seemed to have been able to access what was needed to excel in higher education. In elaborating on his comment in the focus group discussion where he stated, "You're supposed to feel it (.) don't just study to pass (.) understand it and automatically you pass. That's what I do" (Sikhumbuso, FGD 2, 277). During the photo-elicitation interview, Sikhumbuso acknowledged the man in Photograph 5-3 as the man who once said to him, "Don't study to pass, study to understand and automatically you will pass" (Sikhumbuso, PEI 8, 965). Sikhumbuso went on to note,

I always have that, even now, that is my mentality. Probably that's why I get irritated when I don't understand. I need to understand and probably that's why I take long when I study. Look, I study every day cos I need to understand. So this is the guy who gave me the foundation of approaching things. This is the guy who when I get stuck, in some of the problems. I go (.) and I have done some fancy stuff now (.) I go back to the basic fundamentals (.) skills when you analyse something. I just go back and study from scratch and go up. And usually I get the problems. This is the guy who told me don't cram the formulas. Just understand the formulas. And then when you understand the formula you just know it. (Sikhumbuso, PEI 8, 972)



Photograph 5-3. The fundamentalist; basic analysis, first principles (Sikhumbuso H3)

The man in Photograph 5-3 "... is one of those guys who (.)'Hey, Colin.' I know that Colin. He was not staying far from the same section I walked, probably about two minutes to where he is staying" (Sikhumbuso, PEI 8, 990). It appeared as though Colin was a man who was simply known in Sikhumbuso's community, from whom he later sought help when experiencing some difficulties with Grade 11 mathematics. Sikhumbuso explained how he used to spend time with Colin (especially during the holidays) practising mathematics, and how he observed his marks improve during his matriculation year as a result of this.

Cos when people ask "Were you always a good student?" I would say, "No, but I just changed in matric." Just at the end of my standard nine. But I felt like I'm in matric now I need to at least get a 70% you know. But why? Because some other people don't. Seriously I don't know why. I just felt it. I just felt that I needed to get a good result. (Sikhumbuso, PEI 8, 1041)

Other than *feeling* the need to get a good result, Sikhumbuso claimed not to know what changed in him during his matriculation year that led to his improved results in mathematics. He did, however, locate Colin as a mentor who helped him understand and apply the basic principles of mathematics, identifying these as still of use to him at that stage. In this regard, it is evident that in addition to there being a long standing and historical experience of "feel[ing] it" in relation to

academic achievement endeavours, Sikhumbuso also acknowledged the role of an academic mentor in his past and current academic achievement.

Where Colin apparently instilled foundational academic skills, it was Sikhumbuso's paternal grandmother who allegedly instilled self-discipline in him. In addition to entitling the photograph of her "My foundation", he claimed, "She gave me principles" (Sikhumbuso, PEI 8, 409), and

I feel that I have avoided so many things. So many things because of what she has instilled in me. So now I don't have to have someone to tell me "Don't do this, don't do that". I just feel it. "No I can't do this." I think it's because of what she put in me when I was growing up. So I thank her for that, cos compared to most people that I grew up with I am like the most disciplined out of them all (.) and I thank her for that. (Sikhumbuso, PEI 8, 420)

Sikhumbuso referred to an internalised sense of his grandmother, a sense that at that stage helped him make responsible decisions in his life.

When I was young, my friends used to go out, and I wanted to go out, and I really wanted to meet girls (.) you know, party and all of that. You know just chill with friends and um, when you are young you usually overdo these things. And um (.) but I couldn't because she [his grandmother] wouldn't allow me. (Sikhumbuso, PEI, 455)

But now I have freedom. I have (.) since I have been independent. I have been independent since the age of what 18, 19. Very early. But then that time I could have said, "Oh freedom. Now I can go party and do all those things," but I just felt (.) It just didn't feel good to me. (Sikhumbuso, PEI 8, 460)

In summary, Sikhumbuso's description highlighted the presence of a strong vision for the future (especially pertaining to freedom for his mother, and opportunities for his daughter). However, this vision was grounded in an emotional awareness of the past. Sikhumbuso's description also highlighted a process of epistemic access specific for exceptional academic achievement in higher education. His form of epistemic access appeared to have been mediated by a mentor, as well as several foundational and grounding principles of both an academic and personal nature.

5.3 Joy (College of Humanities)

During the data production process in 2012, Joy was 26 years old and completing her third year of a Bachelor of Social Work degree. She reported that after matriculating in 2003, she started a Bachelor of Science degree at the University of Johannesburg (UJ); however, she did not complete this degree for personal reasons. Joy then spent three years “at home” after leaving UJ, commencing her studies in social work at UKZN in 2010.

5.3.1 A vision for the future: “If you’re an eagle you don’t need to go down and eat with the chickens.”

During the three focus group discussions, most of the participants repeatedly identified having personal, academic, and professional goals, and using these goals as personal motivators. An acute awareness of a vision for their futures was also evident. Joy was particularly descriptive in this regard, remarking,

I always push myself. I always compete with myself. I am a very competitive person. I think it also goes with my drive to like always be doing something cos I’m always doing something, I’m always studying. Now I can’t get a 50 when I’m always on my books. That would be like “Why are you getting a 50 and (.) we are not always in our books and we also getting a 50?” So, that also pushes me to try and work harder and, and (.) just as Bongane said, “If you, if you excel, if you don’t (.)” I always say this “If you’re an eagle you don’t need to go down and eat with the chickens.” (Joy, FGD 3, 469)

Amidst much laughter from the focus group participants, Joy went on to clarify,

It’s not that other students are chickens. It’s just that you, you become different (.) you get different. You go somewhere far in life. Like I tend not to think normally, I wanted to be different. I want to be a legend in some sorts. Yes, I want to make a difference (.) but also to be recognised that Joy was here. Joy lived. (Joy, FGD 3, 475)

Joy presented as an individual with a strong and positive sense for her future. During the photo-elicitation interview, she tabled Photograph 5-4 (her actual passport photograph) for discussion, and gave this the title of “Best student”. Joy explained that she and another student from her discipline had been selected to participate in a study exchange programme in the second semester

of 2012. She decided, however, not to take up this exchange offer in case it compromised her academic achievement at UKZN. Joy suggested that Photograph 5-4 represented her being selected for the exchange programme, and that it "... proves that the sky is the limit (.) I can do anything I want to do, I can be anything I want to be, and I can go anywhere I want to go (Joy, PEI 3, 396).



Photograph 5-4. Best student (Joy C9)

Later in the photo-elicitation interview, Joy remarked that she now realised that "success is here in your mind ((pointing to her head))" (Joy, PEI 3, 412). In addition to being strongly future-oriented, Joy also ascribed importance to the role that her mind (attitude and determination) played in her academic success. She used a metaphor of "flying high like an eagle", and had aspirations to travel once she had finished studying. Furthermore, she also took a photograph of her Bible as part of her auto-photographic collection (entitling this "Spiritual life"), and presented several historical photographs of friends from her existing photographic collection. She claimed that these particular friends were inspirational to her because of their own spirituality, and their shared community development experiences. Moreover, when discussing why she took a photograph of her Bible, she noted,

Um (.) I (.) for me there is a difference between being intelligent and having knowledge (.) and then having wisdom. Yes. So, for me spiritual life and connection

with God and everything it's part of that wisdom (.) that thing that tells you "Wake up and study." The thing that tells you "Don't do this, do that." Yes. (Joy, PEI 3, 822)

In addition to asserting her spirituality as facilitative of her wisdom (which she appeared to value over intelligence/knowledge), Joy acknowledged that her sense of spirituality is a strong internal voice that provided encouragement in relation to her studies, and direction in relation to her future and where her life was going. This future orientation was, however, strongly rooted in the past. In response to the auto-photographical prompt to take photographs that were reflective of historic academic activity, Joy took (among others) Photograph 5-5. Photograph 5-5 is a metaphotograph of a school photograph of Joy during her Standard 7 (Grade 9) year in 2000. Choosing to title this photograph "Model C⁶⁷ school", Joy explained, "... cos that's the year my parents decided to take me to a better school" (Joy, PEI 3, 181).



Photograph 5-5. Model C school (Joy H1)

Initially, after presenting this photograph for discussion during the photo-elicitation interview, Joy spoke positively about the transition to a former Model C school. However, as is evident in

⁶⁷ Historically, Model C schools were reserved for white learners during the Apartheid era (Cross et al., 2010). Model C schools were better resourced, and perceived as offering superior educational opportunities (CHE, 2010). Since the disestablishment of Apartheid education in the 1990s, former Model C schools have witnessed the influx of black learners whose parents were able to afford the relatively expensive school fees (Msila, 2005).

the middle part of the excerpt below, she also exposed aspects to the transition which were difficult.

Um (.) it did a lot for my education. Cos, in black schools at that time, we didn't have things like um (.) corporal punishment was still coming out. It was still that thing. In Model C school, you go there you don't get hiding. It was nice. You get support if you are struggling. You get tutors. You got extra activities like culture or sport. Where I came from we didn't. So, it was a huge transformation for me. And it did a lot for me cos I remember when I first went there, I struggled academically, cos I couldn't adjust. Everything seemed so hard and then afterwards everything was just OK. And in a way they give you a lot of homework compared to the school I was from. And you got a whole lot of subjects so when you come to university and stuff, you are used to sitting down with your books and studying. So, it helped a lot. (Joy, PEI 2, 191)

The educational importance attached to Joy's migration to a former Model C school is clearly evident in her statement above. She attributed her current ability to sit "down with your books and study" (Joy, PEI 2, 190) at university to her being compelled to do this at her former Model C school. In addition to acknowledging that her migration to a former Model C school "was a huge transformation for me [and] I couldn't adjust" (Joy, PEI 3, 187), Joy also acknowledged that –

You get the status in the community when you go to a white school. But that said, some of the friends back away because you are now in a Model C school, and they start calling you coconut⁶⁸ and stuff. But, ja, for me when I look back now it was the pathway of having a better life, cos maybe if I had stayed at a black school I wouldn't have had the strength to go to university, and then fail and then go again ((Joy began to cry)). (Joy, PEI 3, 250)

Joy also added, "Going to that school [the former Model C school] and learning in English, learning how to write essays, learning how to read (.), it really helped a lot" (Joy, PEI 3, 317). She went on to specify, "I don't need the dictionary as often as some people do because I know most of the stuff" (Joy, PEI 3, 320).

⁶⁸ Rudwick (2008) clarifies that the term "coconut" is used in South Africa to refer to a black person who has in some way been assimilated into forms of white culture. Being still black on the "outside" (i.e., skin tone), yet white on the "inside" (e.g., through accent and/or educational association) is akin to a coconut, which has a black/brown shell, but a white fruit on the inside.

It was evident that Joy perceived her migration to a former Model C school as "... the pathway to (.) a better life" (Joy, PEI 3, 249), as well as facilitative of her English language reading, writing, and comprehension skills. However, in talking about this during the photo-elicitation interview she also exposed the emotional strain placed upon her as a result of the migration. She referred to how in some instances she acquired status through her migration to a former Model C school, but also how she lost friends who perceived her as a "coconut". So, although Joy may have benefited educationally through her migration, it was potentially at the expense of her full acceptance within her "home culture". In addition, Joy also attributed the experience of going (and adjusting) to a former Model C school as related to her strength to pursue higher education studies (which she has done twice). Her perception was that she might not have had the capacity to do this "had [she] stayed at a black school" (Joy, PEI 3, 249).

A central emotional conflict that emerged in Joy's past pertained to her perceived "pathway of having a better life" (Joy, PEI 3, 249). For Joy, her current levels of exceptional academic achievement were linked to her migration to a former Model C school and the educational opportunities that came with this. However, this pathway (or opportunity) was not without academic challenge, struggle, and emotional turmoil. The challenge associated with the aforementioned aspect of Joy's educational and emotional history was contrasted with a photograph of Joy's mother (see Photograph 5-6 below). Joy selected Photograph 5-6 from her existing collection of photographs, this photograph having been taken in 2004 when she left home to study at UJ. In the photograph, Joy's mother can be seen standing in a jungle gym at the crèche that she used to work at. Joy titled the photograph "My anchor", identifying that –

Yes, that's what she is to me. She is a great mom. She encourages me (.) whatever I want to do she is there ... I wanted to like (.) I had to come back twice to university, she was there. She didn't judge me or anything she was like (.) she was supportive. She was the one who was like, "Go ahead, even though there is not enough money. We can see what we can do." (Joy, PEI 3, 1089)

More so than only providing verbal and emotional encouragement, Joy's mother also appeared to encourage by example. In this regard, Joy mentioned that her mother

...doesn't want to um (.) fail at things. She keeps trying, she tries before she gives up, and we have never seen her giving up. That inspires me a lot. When I was getting very low DPs⁶⁹, I had to draw from that strength to get higher marks. And I want her to be proud of me when I graduate because of getting the cum laude. I'm sure she would be so proud. That's why I don't want to just pass. She would be so happy. (Joy, PEI 3, 1122)



Photograph 5-6. My anchor (Joy H6)

The latter part of Joy's comment above also identifies that she was driven by the desire to make her mother proud upon her graduation in the future. Just as Joy acknowledged that her mother had been a great mother (by inspiring her and giving her more than one chance at university), so too did she acknowledge that she would like to repay this by not just passing, but by also being an exceptional student.

⁶⁹ When Joy referred to "DPs", I assumed that she was referring to the duly performed (DP) requirements for modules at UKZN. Modules require "minimum standards of performance which can take various forms including level of attendance, participation and coursework" (University of KwaZulu-Natal, 2013a, p. 37).

5.3.2 Epistemic access: Assimilating English and peer teaching/learning.

In addition to becoming a social worker, Joy wanted to be a writer – “... more motivational and inspirational kind of writing. I love writing children’s stories as well cos I love children too much” (Joy, PEI 3, 897). In addition to explaining how her migration to a former Model C school assisted with her English reading, writing and comprehension skills, Joy also mentioned that after she had dropped out from UJ, she stayed at home for three years and “was always reading” (Joy, FGD 3, 226). During the photo-elicitation interview, she clarified that the time she spent at home between her studies at UJ and UKZN was spent reading a lot: “Maybe two books in one week – that’s how much I read” (Joy, PEI 3, 298). She also explained –

I write better English than I speak cos I’m a reader. I read a lot. And you find that good essays and assignment (.) I’m good at writing. If for example, if you’re marking my paper you’ll think this person who is writing is white (.) or, a higher level student. (Joy, FGD 3, 224)

Joy positioned her educational migration, early exposure to learning in English (at her former Model C school), the time she spent reading between her UJ and UKZN studies, and her interest in becoming a writer one day in relation to her exceptional academic achievement at UKZN. Her proficiency in English was what enabled her epistemic access in higher education, and she claimed that her essay and assignment markers were likely to think that she was “White (.), or a higher-level student” (Joy, FGD 3, 224). In addition to her proficiency in English, Joy also identified that studying with her peers played an important role in the way in which she managed to excel at university. Aptly titled “groupwork”, Joy noted that Photograph 5-7 included

... some of my friends and we study together. That’s why I took the picture - especially of the notice board because we went to look for our marks. We are always in a group cos social work requires a lot of groupwork. So we are always in a group like that. And we study together for exams (.) for (.) since first year. Yes. Um, we used to do comm dev⁷⁰ and psychology together but some are no longer doing psychology and we are not all doing comm dev. But we still doing social work together, and all of those subjects we studied together. (Joy, PEI 3, 636)

⁷⁰ When Joy referred to “comm dev”, I assumed she was referring to the module “Community Development”. “Community Development” is one of the major module options for Bachelor of Social Work students at UKZN (University of KwaZulu-Natal, 2013a).



Photograph 5-7. Groupwork (Joy C4)

Joy went on to clarify that the group reflected in Photograph 5-7 was a student-initiated study group (i.e., not formed by a lecturer for the purposes of a module task), and

I don't know if I can say I owe them, but in a way I do because I do study by myself but when I'm with them (.) they want me to explain some of the concepts most of the time, so um (.) I read and study by myself (.) when I'm with them they will show me other things that I haven't noticed. Yes. Or they ask me about a concept that I didn't realise (.) that I need to concentrate on it and most of the time I don't know if its karma or what but most of the things we do together comes out in exams. (Joy, PEI 3, 653)

In the transcription above, Joy highlighted several important issues that characterise and arise from the process of peer teaching and learning (De Backer, Van Keer, & Valcke, 2012). In characterising the process, she inadvertently presented it as a dialectical process (between teaching and learning), that leads to a synthesis of something greater. Joy felt she “owes them” because the group was able to identify gaps in her individual learning, and that their joint efforts were akin to some form of karma. Although some may ascribe a spiritual or non-human component to karma, Joy also indirectly recognised the natural cause and effect component of her group's joint efforts. By teaching each other and learning together as a group (cause), they inevitably cover what comes out in exams (effect).

In summary, Joy's description highlighted a dominant future orientation; however, this was concurrently grounded in her historical educational and emotional transitions. Moreover, Joy appeared to have been able to assimilate what was required of her to excel at university, and she positioned this primarily in relation to her proficiency in English, and the conjoint study efforts she engaged in with her peers.

5.4 Sindi (College of Law and Management Studies)

At the time of the data production, Sindi was 27 years old, studying towards a Bachelor of Commerce (Accounting) degree at UKZN, and was registered for second-year modules. After matriculating in 2002, Sindi went on to complete a National Diploma in Cost and Management Accounting at the Durban University of Technology (DUT). She then worked for a few years, and returned to further her studies at UKZN in 2012.

5.4.1 A vision for the future: “Graduate healthy.”

Sindi presented as a self-contained, emotionally mature, and determined young woman. When commenting on what made her different from other students, she remarked it was “... for the fact that I’m more matured now” (Sindi, PEI 2, 521). Of the eight research participants who participated in the auto-photographic component of the study, Sindi was the only one who took and presented photographs that could be broadly categorised as “health-related”. She presented these as strong motivational factors in her current academic achievement efforts, relating these to her future goals and aspirations.

There is a stereotype thing that cancer is more like it affects more of the white population than for African (.) black people. So around that I wanted to go for that test, because I know that you won’t know when you have the disease and it’s better to find out about it as soon as possible (.) and where I am staying there is another girl that is called Linda,⁷¹ and her half-sister grandmother she also has cancer and (.) so. It’s something that when she told me about it, I also thought that maybe I should also go for the check-up. (Sindi, PEI 2, 233)

Later in the interview, she noted,

... when I went for the cancer test [referring to a Pap smear] I mean, I was nervous as well as to whether I have any cancer cells in me or something like that. But as for the breast cancer, um I doubted that there was anything because I think you would know when there is a problem, which is more easy to find than knowing about the other test. (Sindi, PEI 2, 437)

⁷¹ This name has been changed to protect the anonymity of a person being spoken about by the research participant.

In addition to the references Sindi made regarding her concerns of developing cancer, she also referred to HIV, and remarked, “Look for HIV and um (.) this is just something that every student is aware of in the whole country (.) that worry is just there” (Sindi, PEI 2, 511). When discussing why she went for an HIV test, Sindi mentioned,

We always use a condom, but you know there is always like going to be a concern that maybe that we will come close to each other. Even though you don't engage in sexual activity without the condom, but you know just like that (.) contact (.) you can, you know. (Sindi, PEI 2, 338)

I was actually sure in a way [referring to when she went for an HIV test], but you know there is always that nervousness, like “What is going to happen? What if the results are positive and?” (.) So there is always that worriness. (Sindi, PEI 2, 433)

Sindi took three photographs related to her health, and discussed these first during the photo-elicitation interview she attended. Photograph 5-8 comprises a triptych of three photographs taken by Sindi, and the image on the far left reflects the results of an HIV test that she underwent in August 2012. Sindi conceptually positioned the three photographs together during the photo-elicitation interview, relating these through their focus on health. Although each photograph was presented consecutively, Sindi gave each the same title of “Graduate healthy”, and it soon emerged that each reinforced her current and future health status as a dominant motivational driver during her studies.



Photograph 5-8. Graduate healthy (Sindi C4, C5, and C8)

Ok, for me it's about graduate healthy. Cos um (.) the reason why I try to check my health it's just that to me I want to (.) throughout the university I want to when I graduate I still want to graduate healthy (.) still want to fulfil my dreams and (.) So, for me, it's like I'm strict on that you know ... there are so many students (.) even if it's not health issues. Maybe if students are too active, maybe party a lot, then they get into accidents and you know. It's just like um I (.) I'm thinking about that (.) I came here to the university to study, and at home they are waiting for me. So, I just want to be here, and then complete my degree and still be able to go and work. (Sindi, PEI 2, 161)

The above excerpt refers specifically to the image on the right of Photograph 5-8, this being a photograph of a receipt from the Cancer Association of South Africa (CANSA). Sindi reported having a Pap smear and breast examination in August 2012, selecting to take a photograph of the receipt from this, as well as the nursing assistant who worked at CANSA and gave her the results (featured in the central image of Photograph 5-8). For Sindi, these photographs were about a future event (i.e., graduating healthy), made possible by current behaviours and strategies that enable this. Sindi went on to explain how these photographs related to her current academic performance.

For me there is a very strong link between my health and my academic performance, because I'm not sure maybe with cancer that can change. But, if my health had to change like drastically, I don't think I will still feel the same way about what is going to happen in the future. (Sindi, PEI 2, 464)

Sindi noted how a health problem may have compromised how she felt about her future. She had already secured employment for when she graduated (being funded by a bursary from a major accounting firm), and went on to comment,

So I think the only problem that can stand between my success now (.) if my health is a problem ... I mean in South Africa that is mostly I think a big challenge for students and for parents you know. Because they put you through the university hoping that you will come out and start working for them. But if you don't have your health or if something happens to you then, that is all gone.⁷² (Sindi, PEI, 2, 480)

⁷² As discussed in Chapter 3 (see section 3.7), the research participants verified their data descriptions, thereby contributing to the descriptive validity for this part of the study. After reading her description, Sindi met with me and clarified that she did not believe that if students developed cancer or contracted

Sindi's focus on her health was positioned in her path of academic achievement, graduation, employment, and eventual success in life. It serves as something that she can control, as well as a force that orientated her towards her future. It was something that she had identified as a potential barrier to her eventual success. She went on to highlight that –

I have worked before, and I have seen like (.) I have enjoyed getting paid, driving cars, so I want to have that, and I don't want anything standing in between me and that. So, maybe anything that maybe is a threat I want to just eliminate on my way. So, maybe I just want to make sure that I ... I don't know. (Sindi, PEI 2, 524)

In addition to her experience of working before, Sindi also reflected on her educational and family background, and the role that this played in her vision for the future.

Also, it has to do with my background. Also in my family, my mum she is a single parent and she used to tell us we have to be in the top 10 and we have to work very hard to get there. So, it's what we grew up with. Until I went to DUT (.) I also think I graduated well there, because I got a few distinctions. But the problem there was I used NSFAS and I was not staying very close to the university. And I had to work to get food. So it was a bit of a challenge there as well. So, but now, I also (.) when I got NSFAS last year, I worked hard to make sure I get a bursary and luckily I did, so with that as well I also had my own personal goals. It's not just that I get that 60%. I also have my own personal goals of graduating *cum laude* or *summa cum laude*. (Sindi, FGD 1, 438)

5.4.2 Epistemic access: Goal setting, planning, and environmental structuring.

In addition to Sindi's mother offering her an academic goal and a strategy for excelling academically (i.e., a goal of being in the top 10 – presumably in a class, and working hard), Sindi also identified that she herself had set her own “personal goals of graduating *cum laude* or *summa cum laude*” (Sindi, FGD 1, 438). These goals most probably served as an important motivator in Sindi's academic efforts, enabling enhanced opportunities for epistemic access and success at university. Later, Sindi identified that each year she had a year-planner, wrote down all important dates (e.g., for tests, assignments and exams), and the results she would have liked

HIV, that their careers would necessarily be “all gone” (Sindi, PEI, 2, 480). She reiterated that being healthy was a concern in terms of her own personal career stability. She also asserted that she believed that life-threatening conditions could be successfully managed so that they did not necessarily destroy a person's career.

to achieve for these different forms of assessments. After each assessment, Sindi then placed the results on the year planner, and then evaluated –

‘How did I get this and how could I get that? How could I move up or make up the gap?’ And then also I check which modules I am stronger or weaker on so that I can aim to get that 75%. (Sindi, FGD 1, 504)

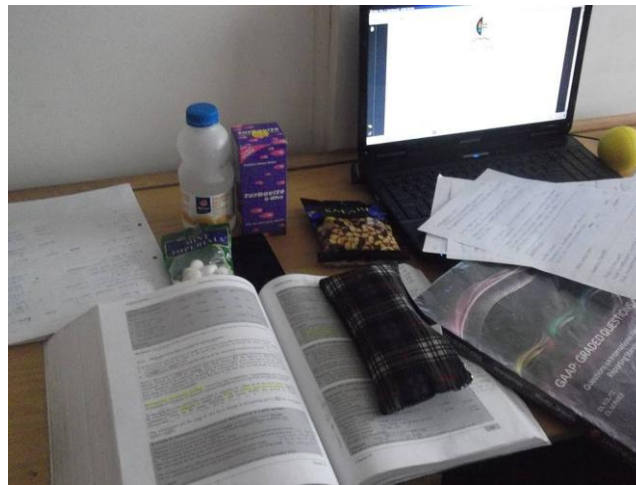
Sindi’s strategy of using a year-planner to track, monitor and self-evaluate her academic performance throughout a semester could also be identified as a planning strategy and motivational device. The year-planner, and the actions within and around this, reinforced the ways in which Sindi monitored her own levels of levels of academic success. Later in the data production process, Sindi described a similar (but far more detailed) tracking, monitoring, and self-evaluation strategy in relation to one of her first semester modules.

... before the exams they posted out DPs, and I wanted a certificate of merit for Economics, so I didn’t get it. Prior to the exam I was number two in the class and then I knew that I was maybe going to drop because when I write my exam (.) I will write Accounting, skip one day, write Economics. So it was always a challenge for me to get a certificate because I always have a problem with studying because I have to focus on Accounting, and I have to focus on Economics. So, after the exams, when I got my results I got 83% and I didn’t get a certificate. And then I was like, “Maybe it was because of the first question?” In question 1 there was maybe like 70 marks for one part, and 30 marks [for the other part]. And I thought that was impossible to get that 70 marks. So when I came back and I went to view my script, then the lady gave it to me, and I checked I actually got 60 out of 70 on that one, and 25 out of 30 on that question, so I had 85%. And for the question that I knew I was happy with it (.) I had (.) I think I got 58% which was like, “What!” And then for the MCQs [multiple-choice questionnaires], I got 81%. And then I was so unhappy they didn’t mark me well for that question because I knew for sure (.) The question I doubted was the other one. And then when I saw my marks I was like “Where was the problem?” (Sindi, PEI 2, 874)

The excerpt above is illustrative of the meticulous and detailed metacognitive processes that Sindi engaged in as part of her academic planning, goal-setting, and monitoring. She was a student who was acutely aware of her ranking in class, aiming for a certificate of merit, the impact that the examination timetable may have had on her academic performance, different sections of an examination, and her self-assessment of how she should have performed in these

sections. Sindi was also clearly a student who checked her examination scripts, even after scoring 83% for a module.

Towards the end of the photo-elicitation interview, Sindi selected Photograph 5-9 for discussion. Photograph 5-9 reflects Sindi's study desk, highlighting the way in which she set up and structured her immediate study environment. When explaining the photograph, Sindi pointed out various items, identifying a stress ball (on the right hand side of the laptop), past examination papers (on the screen of the laptop), some snacks and water, an energy supplement, stationery in a stationery case, textbooks, highlighted text in a textbook, and paper to practice questions for tests and examinations. Photograph 5-9 is illustrative of the level of micro environmental structuring evident in Sindi's study activities. Sindi was attuned to what worked for her in her study environment, and Photograph 5-9 was taken to showcase both her ideal micro study environment, as well as the various items she used within this environment.



Photograph 5-9. Right setting to study (Sindi C1)

Prior to the discussion of Photograph 5-9 in the photo-elicitation interview, Sindi also alluded to a level of macro environmental structuring. During the focus group discussion she attended, participants were discussing the pros and cons of staying in university residences, and one of the participants noted, "The only thing you find there is bashes, parties, you find all those things that are not necessary. The things that are necessary are not there. So there is no more support for

academic performance” (Mzolisi, FGD 1, 339). Sindi remarked, “That’s why I don’t stay in res [residence]” (Sindi, FGD 1, 344).

Sindi’s description exemplified an individual with a unique awareness of how her future academic and career achievements were related to her maintaining her health. In addition, given that Sindi had worked and earned money before, she seemed determined to improve her qualifications and enter the labour market and earn money again. However, Sindi’s future orientation and employments plans were grounded in the understanding that “at home they are waiting for me” (Sindi, PEI 2, 161). She ensured their wait would be worthwhile through her own responsible living, careful planning, meticulousness, and self-reflective and high achievement-oriented study.

5.5 Sifiso (College of Health Sciences)

During the data production phase, Sifiso was a 22-year-old final-year Bachelor of Pharmacy (BPharm) student. After matriculating in 2007, Sifiso started a Bachelor of Science (Biochemistry) degree in 2008, and then transferred to a BPharm degree at UKZN in 2009. Sifiso did not specifically identify a strong and definitive vision for his future. He did, however identify a hunger “for improvements” (Sifiso, PEI 6, 931), and this was characterised as an internal driving force that was grounded in his past.

5.5.1 A vision for the future: “Hungry for improvements.”

- Nick: How did you find taking the photographs?
- Sifiso: It was the same. Nothing different, just the same old good feelings. It has been the same routine for the past few years.
- Nick: So taking the photographs gave you that same feeling that you have had for the past few years?
- Sifiso: Yes, nothing different.
- Nick: And can you explain what is that feeling? What is it that is not different?
- Sifiso: I don't know. Just studying (.) that feeling, that passion, that positive drive to motivate me to study. I always have it and I feel that it hasn't changed so, so the same thing I had two or three years ago (.) I still have it. (Sifiso, PEI 6, 44)

In the above excerpt, Sifiso refers to having a good feeling about, as well as a passion and drive to study. In addition, he also reiterated that it was his perception that being disadvantaged was a driving force for him to study. For example, during the focus group discussion he attended, he noted his surprise that students on financial aid were found to be less likely to excel, suggesting that coming from a disadvantaged background should be a motivating and driving factor for a student. In addition, when discussing his day-to-day study activities, Sifiso presented Photograph 5-10, which shows him taking a book out from his campus library.



Photograph 5-10. Borrowing books at the library (Sifiso C2)

In explaining the reason why he had Photograph 5-10 taken, Sifiso noted that there was no need to buy textbooks. “There is no excuse to say ‘I don’t have a textbook ... that’s why my marks are dropping.’ There are thousands of them [textbooks] in the library. You can use them” (Sifiso, PEI 6, 919). In highlighting the relative opportunities that he experienced at university (such as a resourced study space and access to textbooks), Sifiso went on to say,

... I don’t know, we are different people, we don’t have the same mental capabilities, but I would expect somebody coming from a disadvantaged background to excel, or not necessarily excel but to be driven to put more effort cos you know where you are coming from and you are hungry for improvements. So, ja, I would expect a little bit higher marks from the disadvantaged people. (Sifiso, PEI 6, 932)

Sifiso presented a recurring picture of disadvantage that did not necessarily inhibit a student from excelling, but rather drove a student to excel as a result of being “hungry for improvements” (Sifiso, PEI 6, 931). Whereas some students may emphasise resource constraints as compromising of their academic performance, Sifiso chose to focus on how the university study environment superseded what he had when he was at school. In addition, whereas some students may not be able to afford prescribed texts, Sifiso focused on the lending opportunities made available through the university library. He reinforced his perspective on disadvantage below, identifying that –

- Sifiso: You can't compare yourself to others. You know your situation you have to work with (.) make your thing work. You have to stop making more excuses and just find a way of doing it.
- Nick: Yes?
- Sifiso: Not to sit back.
- Nick: Where did you first come to the (.) belief in your mind that you shouldn't make excuses for your situation?
- Sifiso: From first year. From the very first year I knew myself that I was disadvantaged. So I just changed my mind-set to give myself the positive drive. Sitting down and being a cry-baby about everything is not going to help. You're just going to have to put more effort in. Make everything work if possible. (Sifiso, PEI 6, 983)

Sifiso provided a unique perspective on being disadvantaged. For him, his background had indeed been difficult; however, it facilitated some shift within his mindset that allowed him to persevere through the challenges associated with this.

The following section considers the ways in which Sifiso navigated his way through his academic endeavours; however, parts of this were also grounded in his past.

5.5.2 Epistemic access: Study spaces, daily routines, and socialising.

Sifiso chose to first present and discuss Photograph 5-11 during the photo-elicitation interview in which he participated. He entitled the photograph "Workspace", and clarified the content of this photograph as including the table where he used to study while at school (the table is in the bottom half of the photograph). He also identified that the table was located in the kitchen of the three-roomed house in which he grew up.

The bedroom and the kitchen are connected, but the other room was outside, so I couldn't go [study] outside cos when I come back from studying, it was dark and cold so. So the kitchen was convenient for me, so I used to stay in the kitchen. So that when I finish studying I just go to the bedroom. It was just convenient like that. (Sifiso, PEI 6, 207)

And my place, the place that I used to stay in Ermelo (.) It's cold, very cold, so you would want to stay in a warm place when you study. (Sifiso, PEI 6, 218)

After discussing how and why this setting was a suitable workplace during his schooling years, the interview naturally turned to focus on the spaces and experiences surrounding the table pictured in Photograph 5-11.



Photograph 5-11. Workplace (Sifiso H1)

In contrast to the time he spent studying at the table in the kitchen on his own, Sifiso also identified that this was supplemented with time spent studying with friends, as well as taking breaks to chop wood and play soccer with his younger brother. Sifiso placed particular value on the

... part about um (.) the friends, the discussions, [clarifying that] I used to feel my stuff, it's pointless just grasping, or memorising, or reading stuff and not learning to apply. So when I went for night classes I used to talk a lot and give a lot of answers. It used to install, or reinforce the knowledge that I had, so ja. I like that part, it was very productive. (Sifiso, PEI 6, 296)

Sifiso highlighted multiple components to his studying while at school. These included studying alone, studying with friends, active participation in night classes, and a powerful feeling associated with studying. Here, a strong feeling and interpersonal component to studying was emphasised.

Therefore, although Photograph 5-11 is a photograph of inanimate objects (table, kitchen drawers, and kitchen counter), the photograph is also evidently about the people and experiences that surround (and surrounded) those objects.

Nick: You mentioned your younger brother who is not in the picture but would have featured around that. Who else would have walked through the kitchen while you were studying?

Sifiso: My elder sister. She (.) okay, there is like three of us. It's me, my little brother and my sister, who is older than all of us. We were the only three people in that house, and she was the most likely person to walk in. (Sifiso, PEI 6, 389)

Nick: And tell me (.) your parents or any older family members?

Sifiso: No, the parents are deceased. So (.) um (.) no other members ... (Sifiso, PEI 6, 420)

Sifiso was reticent to discuss what happened to his parents, responding, "It was really a hectic time so eish (.) It would be a sort of like salt in a wound" (Sifiso, PEI 6, 466). Interestingly then, the photograph of a table and kitchen "Workplace" is more than a reflection of a historical study space or daily routine; it is also imbued with an intense emotional experience of familial loss. Whereas Photograph 5-11 reflects a historical study space for Sifiso, Photograph 5-12 reflects his current study space. In addition to confirming the obvious content of Photograph 5-12 (i.e., that it reflects himself studying and that this is part of his daily routine), Sifiso also contrasted Photograph 5-12 with Photograph 5-11 (i.e., his current workplace with his workplace from school).

Nothing much to compare. It's just that what I can say now it's (.) better [referring to the study space reflected in Photograph 5-12]. It's advanced, the environment is a little bit enhanced. It's quiet except for (.) the wall here – it is made of cardboard, so when somebody is playing some music on the other side it is very loud and can be disturbing. But otherwise if there is no such noise everything is fine. Its quiet environment (.) curtains (.) it's just the height, the chair height, and everything. It's conducive to studying. (Sifiso, PEI 6, 845)



Photograph 5-12. Daily routine (Sifiso C3)

Photograph 5-12 (as well as Photograph 5-10 and Photograph 5-11) reflect what Sifiso did on a daily basis at the time of the study, the commitment he had to this, reinforcing the consistency and regularity of his study efforts.

Sometimes it's not necessarily a daily, daily, daily routine, but it's a (.) sort of like a routine. It's a stable routine that I used (.) I do currently. It's just study. You have a test, you just study. There is no other way of (.) um passing a test beside study, (Sifiso, PEI 6, 784)

Moreover, Sifiso highlighted that his current and historical study spaces (Photograph 5-12 and Photograph 5-11 respectively) were conducive to effective studying. In this way, Sifiso seemed able to structure his immediate environments in such a way that they supported and facilitated his academic efforts and outcomes. Although he perceived the university study space as more favourable than the space he studied in while at school, Sifiso also identified that his historical study space (Photograph 5-11) was located in the warmest room of the house.

Sifiso also emphasised the role of social interaction in his historical and current study efforts.

You have to have a good social life, good social background, good (.) um colleagues, social background in order to have friends whom you attend with. Cos a lot of things arise when you hang out with your colleagues (.) it's important, most of the things are useful. (Sifiso, FGD 2, 315)

When asked to clarify what kinds of “things” arose when he “hung out” with his colleagues, Sifiso went on to specify –

Like academic stuff. We sometimes tend to discuss things just as a social gathering when we're chilling in the quad. We maybe sometimes raise important points. We're not always talking academically but now and then we talk about those very important academic things of which most people benefit. Ja, it's very important to have a good colleague relationship. (Sifiso, FGD 2, 330)

Unsurprisingly then, during the photo-elicitation interview, Sifiso presented Photograph 5-13, and chose to title this photograph “Socialising”.



Photograph 5-13. Socialising (Sifiso C4)

Sifiso explained that in Photograph 5-13,

It's us just hanging out. Okay, this, I think it was just before the lecture started so we just hang out, we were waiting for the lecturer. So, just hang out, talk, get to know each other, break the ice and stuff like that. Break the ice, you know. It's a way of bonding and when we bond we are able to help each like achieve more. (Sifiso, PEI 6, 1043)

Sifiso directly linked the relationships he had established with peers (colleagues), and how this helped them achieve more academically. Specifically, he located that socialising with the people one studies with increased opportunities for discussion about academic-related matters, which in turn could serve to remind and consolidate what had been covered.

In summary, Sifiso's description highlighted the presence of an important driving force within him, which was characterised by a hunger for improvement. His description also revealed a perspective on and attitude towards disadvantage that was adaptive. Sifiso rose above the challenges associated with his experience of disadvantage, finding ways to excel in education through peer interaction, environmental structuring, and a consistent daily routine.

5.6 Concluding Remarks

Chapter 5 has provided detailed and photographic-infused descriptions of four of the eight research participants who participated in all sub-stages of the qualitative data production phase of the study. The descriptions from these four participants were chosen to represent an account of exceptional academic achievement across all four UKZN Colleges, and are aligned to the second and third research questions for this study. Specifically, these questions sought to explore the processes engaged in (and reasons for) exceptional academic achievement in students who were identified as unlikely to excel.

More importantly, however, these descriptions also provided a platform for illustrating recurring themes of a vision for the future that is grounded in the past, and strategies for epistemic access and success. In particular, all four of the participants appeared to be strongly oriented towards their futures, while their strategies for epistemic access and success involved consistent study, and the establishment of peers and mentor relationships. In addition, each of the four participant accounts were underpinned by some kind of historical emotional experience (e.g., identity loss, concerns around health, bereavement; yet this was potentially offset by a hopeful and prospective orientation.

Chapter 5 was focused at the level of the individual, and was a preparation for a more macro analytic process presented in Chapter 6. This macro analytic process was further developed and

will be presented in Chapters 7 and 8, and will then be integrated in Chapter 9. However the individual photographic-infused descriptions contained in Chapter 5 are necessarily embedded in the following chapters, serving as a platform for what follows.

Part 4. Analysing Systems of Exceptional Academic Activity

- Chapter 6. An Evolving System of Exceptional Academic Activity
- Chapter 7. A Historical System of Exceptional Academic Activity
- Chapter 8. An Institutional System of (Exceptional) Academic Activity

Chapter 6. An Evolving System of Exceptional Academic Activity

6.1 Introduction and Overview of Chapter

The findings from Phase 1 of the study were presented in Chapter 4. This involved a description of exceptional academic achievement at UKZN between 2006 and 2010, as well as a logistic regression model that identified the educational and socio-demographic variables associated with increased odds of exceptional academic achievement at UKZN. It was specifically identified that exceptional academic achievement was a rare occurrence (3% of the sample), while a large majority of those in this subgroup were white females (38%). This was contrasted with an overall representation in the entire sample of 9% for white females. The logistic regression model for the entire UKZN sample suggested that the odds for exceptional academic achievement were strongly weighted in favour of white females, students not on financial aid, and students with high matriculation scores and matriculation English symbols. The participants from the qualitative phase of the study also provided explanations and interpretations of the Phase 1 findings, and these were included in Chapter 4. In addition, Chapter 4 responded to the first research question for this study, which comprised an enquiry into the profile of academically exceptional undergraduate students in South African higher education.

The response to the first research question facilitated the selection of research participants for Phase 2 of the study. Participants were selected on the basis that they did not technically “fit” the profile for undergraduate exceptional academic achievement at UKZN, however, were nonetheless high-achieving students. Chapter 5 then provided descriptive and photographic-infused accounts of the process of exceptional academic achievement for four of the research participants, and responded in part to the second and third research questions for this study. These two questions sought to explore how underrepresented examples of academically exceptional undergraduate students excelled, as well as the reasons why these students excelled. Other than the logistic regression model which could be used to predict exceptional academic achievement, Chapters 4 and 5 contained predominantly descriptive analyses of the data that were produced during this study. Chapter 6 introduces the theoretical frame (specifically of

socioculturalism and activity theory) into the analysis of data, and functions to elevate the descriptive analyses presented in Chapters 4 and 5.

This current study explored the phenomenon of exceptional academic achievement in South African higher education, and was primarily located in a sociocultural and activity theory frame. The purpose of Chapter 6 (and Chapters 7 and 8) then is to present the process of activity system construction and analysis. As informed by the third generation of activity theory, an appropriate unit of analysis was identified as being at the level of the collective object-oriented activity system (Engeström, 1987). In light of this, three activity systems were constructed and analysed for this study. These constructions arose from the researcher's re-immersion in the data with the conscious use of a sociocultural and activity theory frame. Whereas I attempted to bracket out this frame during the initial data analyses (presented in Chapters 4 and 5), Chapters 6, 7, and 8 report on analyses that drew heavily on the sociocultural constructs and heuristic trends evident in activity theory.

As mentioned in Chapter 3 (see subsection 3.5.6), I did not know beforehand which activity systems I would construct and analyse. I had to experiment with several permutations, recognising this as part of the process. I also had to be reflective of the dialecticism inherent in the mixed methodology and grounding frameworks of socioculturalism and activity theory. My interaction with the data, theoretical frame, and research questions eventually generated three activity systems, namely an “evolving system of exceptional academic activity”, a “historical system of exceptional academic activity”, and an “institutional system of (exceptional) academic activity”.

The evolving system of exceptional academic activity is presented and analysed in Chapter 6, the historical system of exceptional academic activity in Chapter 7, and the institutional system of (exceptional) academic activity in Chapter 8. The presentation and analysis of each of these systems will start by a specification of the nature of the *subject*, *object*, and *outcome* of the activity system. Secondly, the dominant *mediating artefacts*, and thirdly the *rules* that featured in the system are presented and analysed. Fourthly, the systemic components of *community* are

presented, this flowing into an analysis of the *division of labour* in the system. In addition, within these five-part descriptions and analyses, various intra-systemic tensions and contradictions that arose from the analyses will also be identified (Engeström, 1999a). As mentioned in Chapter 2 (section 2.3.4), contradictions and tensions are important concerns in contemporary research informed by activity theory. These contradictions and tensions, however are only fully developed in Chapter 9.

6.2 System Components

An evolving system of exceptional academic activity (hereafter referred to as “the evolving system”) was constructed primarily in response to the analytical dialogue engaged in with the eight auto-photographical compilations and photo-elicitation interviews in relation to these compilations. Descriptive analyses from four of these compilations appeared in Chapter 5. Although all participants, photographs, and discussions around these were included in the construction and analysis of the evolving system, more emphasis was necessarily afforded to photographs that reflected the participants’ current academic activity (as requested of them during the auto-photography induction session). Figure 6-1 is a graphic representation of the evolving system that was constructed during the data analysis processes.

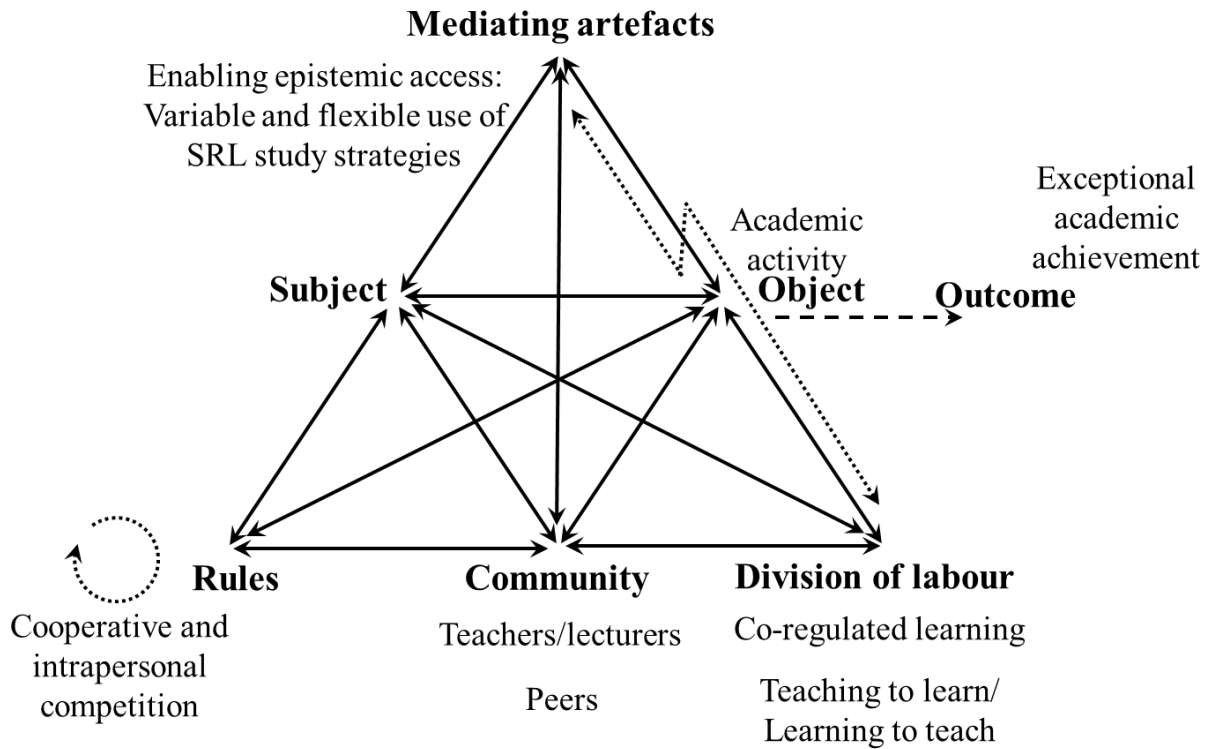


Figure 6-1. An evolving system of exceptional academic activity

6.2.1 Subject, object, and outcome.

As explained in Chapter 2 (section 2.3), sociocultural perspectives conceive of the *subject* and *object* as existing in a mutually constitutive and dialectical relationship. Nonetheless, in constructing an evolving system of exceptional academic activity, the *subject*,⁷³ was identified as academically exceptional undergraduate students who were in the second half of their undergraduate degree. In addition, the subject was only informed by academically exceptional African students. Moreover, all students who informed the subject were also in the process of excelling. This was theoretically relevant for a study that aimed to investigate the phenomenon of exceptional academic achievement *in action*, and not primarily as an *outcome*. This is proposed to signify resonance with research from a sociocultural and activity theory stance,

⁷³ I refer to the subject (i.e., the student) in the collective sense, and not in the sense of an individual student.

which advocates a focus on activity over outcomes, and processes over products (Engeström, 1996, 1999a, 2009a; John-Steiner & Mahn, 1996).

Although ontologically indistinguishable from the subject, the *object* in the evolving system was conceptualised to refer to academic activity in higher education, with a specific focus on undergraduate education. Student and academic activity are (or at least should be) inherently related. In this study, this relationship exemplified the ontological unity of the subject and object. The *outcome* of the evolving activity system was projected as exceptional academic achievement; however, given that the subject was technically still engaged in the activity at the time of data production, this outcome was not assured.

6.2.2 Mediating artefacts.

At a time when stimulus–response theories of human behaviour were dominant, Vygotsky (1978) proposed an alternative model of mediated human behaviour (see Figure 2-2). In this way, mediating artefacts can be conceived of as “helping” (or possibly hindering) the subject “act” upon the object. A mediating artefact then is that which mediates a subject’s activity, and serves as an important explanatory factor in sociocultural theories of human thought and behaviour (Daniels, 2001b). Each of the four participants described in Chapter 5 used a variety of study strategies in their pursuit of exceptional academic achievement. For example, using a diary (and planning what has to be done during allocated times on certain days) is an example of a time management strategy of which most of the participants in Phase 2 of the study provided evidence. In addition, the participants also provided evidence of being self-reflective and engaging in self-talk as a study strategy.⁷⁴ However, it was not only the presence of and ability to engage various psychological and concrete tools in the study process that were relevant for high-achieving students, but rather the variable and flexible ways in which they were used.

⁷⁴ See for example (among others) Hloniphile, FGD 1, 514; Khulekani, FGD 1, 519; Ntokozo FGD 3, 384; Bongane, PEI 1, 119; Sindi, PEI 2, 869.

On the issue of diaries, I hate diaries. I can never, cos I don't stick to them. So I've just chucked them out. I only had a diary for one month. Then I thought no, this is not happening. And I think time management obviously is an issue but there isn't one way to study. I think that students usually see someone studying in a particular way and they want to study like that. But that's wrong, cos the thing is you need to identify what is (.) what works for you, and also you need to identify times which are productive for you. There is no use going to the library and sitting for hours ... if you think you're going to sit in the library and read over that book for the whole day, you're not going to get anything from it. So, I think it's about identifying what makes you learn best and when do you learn best. So, for example, for some people you might be a morning person. If you're a morning person, have your breakfast and do your work. If you're a night person, stay up. If you're an eleven o' clock person, when the students are sleeping from campus. Ja, that sort of thing. So I think people are confined by particular methods which are suggested by lecturers. And it ends up that it may not be the best technique for you ... So it's about identifying how you work best I think. (Ntokozo, FGD 3, 396)

Similarly, it was identified that –

When I study, I don't (.) you know they give you these tips how to study and stuff. I don't use one method, I use whichever one on that day I feel like using. I find that sometimes I can't mind map, sometimes it's enough to summarise, sometimes enough just to highlight, sometimes enough to read aloud, out loud. I don't ever stick to one specific study method. (Joy, FGD 3, 365)

When constructing the evolving system, a prominent mediating artefact which enabled epistemic access to the participants was therefore conceptualised as the variable and flexible use of self-regulated learning (SRL) study strategies. Social cognitive definitions of SRL isolate this as the process whereby students “personally activate and sustain cognitions, affects, and behaviours that are systematically oriented toward the attainment of learning goals” (Schunk & Zimmerman, 2008, p.vii). Specifically, nine sub-processes⁷⁵ are closely related to high academic achievement outcomes for students across all levels of study. Instead of locating these SRL sub-processes as separate mediating artefacts in their own right, what became evident during the data analysis was that these sub-processes were selectively and variably used by high-achieving students as and when needed. In the evolving system then, SRL sub-process were more accurately

⁷⁵ These sub-processes include goal setting, task strategies, self-instruction, self-monitoring, imagery, time management, environmental structuring, help-seeking, and self-evaluation/reflection (Zimmerman, 2002a).

conceptualised as a “menu” from which the subject could select, adapt, and apply the sub-processes in individual ways. It was the variable and flexible use of different study strategies that appeared to mediate the epistemic relationship between the subject and object, rather than the mechanistic application of a set of study strategies. In other words, the complex combination of these strategies appeared to contribute to exceptional academic outcomes.

Rather than a set of recommended study strategies then, the flexible selection of various SRL study strategies appeared to be a more fitting mediating artefact, and this is reflected in Figure 6-1. It may be useful to consider why the flexible selection and application of various study strategies played a more prominent mediating role in the exceptional academic achievement trajectory of the participants, rather than the mechanical application of various SRL sub-processes as possibly “suggested by lecturers” (Ntokozo, FGD 3, 393) or through “these tips they give ... you to study” (Joy, FGD 3, 363). A possible stance from which to understand the flexible and variable use of study strategies could emanate from the historical-contextual framework developed in Chapter 1 (see Figure 1-1), and the intersectionality of the multiple variables that were incorporated into this frame. Just as the principles and outcomes of intersectionality between multiple socio-demographic and educational variables (and not the individual variables per se) could be used to explain academic (under)achievement, so too could these principles be used to explain the flexible and variable use of SRL sub-processes. Similarly, the results from Phase 1 of the study identified that a range of intersecting socio-educational and demographic variables were significantly associated with increased odds of exceptional academic achievement. The intersections between these variables highlight the differing effects that combinations of factors may have on exceptional academic achievement outcomes. Along similar lines, I argue that it is the intersections between various study strategies (SRL sub-processes) that are critical in yielding high academic achievement outcomes, rather than a set of SRL strategies and processes in themselves. In this way, it is not so much the strategies that matter, but rather the intersections between these strategies (and the potentialities arising from these intersections) that have an enabling or disabling effect on exceptional academic achievement outcomes. Zimmerman and Campillo’s (2003) three-phase cyclical model of SRL (see subsection 2.2.1.1) proposes enhanced academic outcomes from the cumulative effect of the

various theorised SRL processes. However, I suggest that there is a difference between a cumulative and an intersecting effect. Zimmerman and Campillo's (2003) model is inherently a "before, during, and after" process, the success of which appears to rely on the cumulative effect of all sub-processes in the cycle. In contrast, the application of various SRL sub-processes in the subject of the evolving system appeared to be variable, flexible, and intersecting.

6.2.3 Rules.

As described in subsection 2.3.2, the rules in an activity system refer to the norms and conventions that may govern individual actions and collective activity (Cole, 2005). Introduced in the third generation of activity theory, rules (along with the components of community and division of labour) function to integrate and account for aspects of human activity that exist at a broader social, collective, and institutional level (Engeström, 1987). However, not all rules are rules in the sense of being officially documented and enforced, and therefore, where applicable, unofficial "rules" are referred to as norms or conventions in the description below.

Two related rules appeared to dominate in the evolving activity system, both of these pertaining to competition. The first form of rules is described as cooperative competition, and the second as intrapersonal competition. Although cooperative competition may appear paradoxical, it need not be if students can understand that their own success could be dependent upon other students' success, and that exceptional academic outcomes are not necessarily exclusive or at the expense of others. This is aptly explained below.

Here, this guy ((the person in Photograph 6-1 being pointed at)) ... he actually also does very well in his studies, and we usually have a competition with him. But I also help him and he also helps me. Ja, we are a team. In every group if there is me, if there is Bongane, there is also Thabo ... And he knows that he is my competition, and I know that [I am his competition]. I usually tell him that "I will beat you ..."
(Bongane, PEI 1, 685)

The construct of cooperative competition became evident as a rule (or norm) in the evolving system, and specifically refers to the back and forth movement between interpersonal competition (with the intent of beating: "I will beat you"), and cooperation between high performing students ("But I also help him and he helps me").



Photograph 6-1. The super TEAM (Bongane C10)

All forms of competition are likely to have inherent rules and norms, and in the evolving system, both forms (i.e., cooperative and intrapersonal) exhibit a primary contradiction between the individual and the collective. In education domains, competition between students is often perceived as negative, and frequently positioned in opposition to cooperation (Attle & Baker, 2007). For example, in their study on the enabling and constraining factors of student retention and throughput at the University of Witwatersrand, Cross et al. (2010) stress the value of “supportive rather than competitive relationships ... [between] peers” (p. 78). In addition, competitive learning environments have sometimes been found to yield undesirable learning outcomes⁷⁶ (Bergin & Cooks, 2000). Moreover, certain competitive characteristics in individuals may suggest underlying feelings and corresponding motives of inferiority/superiority (Houston, Edge, Anderson, Lesmana, & Suryani, 2012). However, competitive higher education learning environments (and competition between peers) could also be understood as multidimensional, and not only potentially negative in outcome. This is because in principle, higher education students are not (or should not be) competing for a finite set of academic outcomes. The

⁷⁶ Some of the more commonly cited adverse outcomes of competitive learning environments and peer relationships include the adoption of a performance goal orientation in favour of a learning orientation (which involves mastery of content rather than mastery of performance outcomes). In addition, some research has offered that students in competitive environments adopt a rote-learning approach, failing to develop deeper understandings of content (Fryer & Elliott, 2008).

attainment of exceptional academic achievement is technically available for all. However, the belief that academic achievement should be normally distributed is probably persistent and enduring in higher education. In this way, it is questioned whether, in an attempt to distribute outcomes “normally”, students are inadvertently set up to compete for a “finite” set of exceptional results. If the system allows for non-normal distributions of academic results, cooperatively competitive environments in higher education could function to increase the chances of exceptional academic achievement for all students.

Even though cooperative competition was evident in the evolving system, there was an aversion to the explicit acceptance of direct competition with other students. On several occasions, references were made to competition with other students (which were conceptualised as cooperative competition above); however, these were quickly qualified as statements about intrapersonal competition instead.

I think I'm competitive (.) I won't say competitive, but in a way I'm competitive. But then I don't try to say, “I want to be better than who?” Then I point at a person. I want to feel good about my work. (Sibongile, FGD 3, 416)

Within the evolving system, it appeared socially unacceptable to acknowledge the comparative and competitive role that studying with and alongside other students had on an individual student's academic activity. What seemed to be more acceptable to acknowledge was the intrapersonal competitive processes that took place. Just like Sibongile settled on not wanting to “be better than” (Sibongile, FGD 3, 415) Joy, also claimed, “I always push myself. I always compete with myself. I'm a very competitive person” (Joy, FGD 3, 466).

Furthermore, when considering the internal rules that seemed to govern this intrapersonal competition, many of the research participants reported imposing conditions upon their academic performance at university. Although all felt it necessary to push themselves on a daily basis, many identified specific rules or competitive standards for themselves. These included:

- identifying a mark below 70% as a fail;
- ensuring that what has been stipulated and planned for in a daily plan was accomplished;

- aiming to achieve certificates of merit for modules, and
- participating in academic activities even when physically and emotionally unwell.

As such, a set of rules or standards seemed to govern the intrapersonal competition for the evolving activity system. Although these rules existed in the “minds” of the students who participated in the research project, I suggest that the rules are co-constructed through the ongoing cooperative competition with other students both currently and historically. Holding oneself to a high standard (e.g., regarding 70% as a fail, or aiming for a certificate of merit), is unlikely to originate internally, but is more likely to originate in the current and historical sociocultural context. This assertion is consistent with a sociocultural perspective on the human mind, where the mind is understood to be mediated through intersubjective participation (Göncü & Gauvain, 2012). In this way, a student cannot compete with him/herself until he/she has participated (and possibly competed) with others intersubjectively. Intrapersonal competition could therefore be perceived as internalised competition with others.

The above analysis of the evolving system reveals a primary contradiction within the rule component of cooperative and intrapersonal competition. In Figure 6-1, this primary contradiction is depicted as a circular arrow on the left-hand side of the diagram, and essentially represents a contradiction between the notions of individual and collective. However, a sociocultural perspective facilitates a conceptual movement beyond individual and collective constructs, a perspective which emphasises the synthesis between these constructs. Movement within and between the individual-collective dialectic (evident in the rule of cooperative and intrapersonal competition in the evolving system), is perhaps manifest in the dilemma experienced by the research participants when positioning themselves ahead, alongside, or behind other students along an academic achievement continuum. I suggest that capitalist societies preface the individual and individual effort, and often fail to synthesise the dialecticism inherent between the individual-collective relationship. Although the role of individual effort in high academic achievement outcomes should not necessarily be discounted, I suggest this individual effort is a derivative of participation in social activity. Failure to recognise and reinforce this has the potential to place an unnecessary burden of pressure on the subject of the

evolving system to work individually towards exceptional academic outcomes. In this way, it is proposed that the individual and collective contradiction has the potential to facilitate enhanced academic outcomes, especially where students are assisted to operate within the dialecticism of the individual-collective construction.

6.2.4 Community.

From an activity theory framework, the community in the evolving system shares the same object or purpose (Cole, 2005). In this way, “community” in an academic activity system would broadly refer to the people within that system who share a common purpose of academic activity. In the evolving system, both teachers/lecturers⁷⁷ and peers featured as subsections of community who shared the common purpose of academic activity. For example, some lecturers were presented as being inspiring and motivational within the academic activity, while the practice of help-seeking (from both lecturers and peers) also came to the fore. Although interaction with peers was certainly emphasised more so in the data (and in the descriptions contained in Chapter 5), certain interactions with lecturers were also evident in the evolving system.

Cynthia (the lecturer in Photograph 6-2) really taught us well ... she really engaged with us, she wanted us to understand, she tried by all means ... she even um (.) Fridays there were no psych lectures, but then there was a slot that the psych block had, so she took that space and then she said we are going to use it for revision, people don't have to come ... but then the room wasn't full [but] a bunch of us came ... and I think she really loved her job. I love people who love their jobs. (Sibongile, PEI 5, 965)

Photograph 6-2 formed part of Sibongile's auto-photographical collection, capturing her posing with her “favourite lecturer at the time” (Sibongile, PEI 5, 932). The engaging role that some lecturers play in the shared academic activity of the evolving system was particularly important for Sibongile.

⁷⁷ I use the terms “teacher” and “lecturer” interchangeably in the latter parts of this thesis. Although I acknowledge that in the South African context, the term “teacher” is usually used to denote a school teacher, and the term “lecturer” to denote a “teacher” in higher education, my belief is that *learning* in higher education is better associated with the term “teaching”. At UKZN, for example, higher education teachers are formally designated (and appointed) as lecturers; however, the term “teacher” signals a more nuanced teaching/learning role that some lecturers may perceive themselves as having.



Photograph 6-2. Favourite lecturer at the time (Sibongile C6)

In considering the role of peers in the community component of the evolving system, themes of peer teaching and learning, learning by explaining, groupwork, and socialising as an academic activity were evident across all of the participant descriptions in Chapter 5. In addition, the four research participants not featured in Chapter 5 identified similar themes of remembering through groupwork, learning through teaching, and learning from others. The persistence and dominance with which peer interaction and learning from peers appeared in the data informed the inclusion of peers as a special category in the community component of the evolving activity system. Peers and teachers/lecturers are undoubtedly essential parts of the community in an academic activity system. However, the nature and extent of their role in this shared activity is more fully realised when considering what these community members do in the community and how they do it (i.e., how is the labour of the shared academic activity divided?).

6.2.5 Division of labour.

Whereas the community shares the same object in an activity system, the distribution and division of labour within this community is necessarily varied. For example, some lecturers “really taught us well ... really engaged with us ... wanted us to understand [and] tried by all means” (Sibongile, PEI 5, 962). In this example, the lecturer also used additional lecture periods not included in the standard timetable to revise and re-teach aspects of the curriculum. Although

it may be argued that these actions are what all lecturers (should) do, they stand out as examples of variations in the labour associated with the academic activity in the evolving system. In particular, some lecturers were acknowledged in the evolving system for the additional teaching work they do, and the way this supported the learning in an academic activity system.

In addition to lecturers, peers (specifically peer interaction and teaching to learn/learning to teach) also featured as an important community component in the evolving system. Although the value of peer interaction and groupwork in educational activities is commonly accepted, the historical dominance of transmission-based teaching approaches still seems to subjugate the role that peers may have in the learning process (Zusho, Karabenick, Rhee Bonney, & Sims, 2007). It became evident that learning from (and teaching) peers functioned as a critical aspect of how time was spent and labour was divided in the evolving system. The role that peers play in this system was best materialised through the notion of “teaching to learn/learning to teach”, and the construct of co-regulated learning. As discussed in Chapter 2 (subsection 2.3.3), co-regulated learning has been increasingly used to re-conceptualise mainstream notions of SRL, especially in research that adopts a sociocultural frame (McCaslin & Hickey, 2001). In an attempt to prioritise the interpersonal and shared nature of learning (and teaching), co-regulation brings into focus the role of interpersonal and inter-regulating relationships (i.e., community and division of labour) in any learning process and academic achievement outcome. Although students in higher education succeed, excel, or fail as individuals, the co-regulatory processes (and interactions with others) involved in attaining these outcomes are essential to consider.

In the evolving system therefore, teaching to learn/learning to teach were presented as dialectical labour processes. In doing so, it was useful to underpin this presentation with varying perspectives of the Russian word *obuchenie*.⁷⁸ *Obuchenie* is often translated in English texts as unidirectional “instruction” (telling and transmitting information); however, some perspectives offer more nuanced translations. For example, Sutton (1980) advances that *obuchenie* refers to both teaching and learning, thereby embedding the dialectical relationship between these

⁷⁸ The reference to the Russian word *obuchenie* is justified given the Vygotskian and sociocultural framework within which the current study was situated.

constructs in Russian philosophy and pedagogy. In the evolving system, the labour of teaching and learning appeared to be distributed among the participants (both subject and community) in the system. Although the roles of formally appointed lecturers in higher education are not in question, what *obuchenie* brings into question is the interconnectivity between teaching and learning. If the role of higher education teachers in facilitating exceptional academic outcomes was the object of this study, the evolving system could be reconceptualised to position the teacher as subject. In this scenario, manifestations of *obuchenie* in the evolving system would probably also appear, however these manifestations would necessitate reflecting on the learning processes that arise in teachers from their formal teaching activities. Similarly, in adopting the position of the student as subject, manifestations of *obuchenie* not only involve knowledge and skills acquisition (learning), but also the corresponding practice of teaching, and how this in turn reiterates learning. Whether involving co-regulated processes by or with peers or teachers, I propose that teaching and learning are highly resonant and interrelated in the evolving system, functioning to distribute the labour in the system.

Although individual academic outcomes were important in the evolving system, these were strongly informed by the community and the way in which the labour directed at these outcomes was distributed. In fact, I argue that the individual outcomes and individual attempts to attain these fade in and out of focus in the evolving system. This system has strong themes that pertain to participation in academic activity as a form of “socially meaningful activity” (McCaslin & Hickey, 2001, p. 235), and I suggest that this is an important contributor to exceptional academic achievement outcomes. This is exemplified in the interchange between socialising as studying, and studying as socialising.

However, through co-regulated learning, themes of social participation could also be positioned in contradiction to the mediating artefact in the system (i.e., the variable and flexible use of SRL study strategies). This is an example of a secondary contradiction in the evolving system, and is reflected in Figure 6-1 as a zig-zag arrow on the right-hand side of the diagram. Whereas the variable and flexible use of study strategies (a mediating artefact) was understood as primarily being an individual process (of SRL), this potentially contradicts any co-regulatory processes

manifest in the community and division of labour components of the evolving system. However, it is the tension created by this apparent contradiction that I suggest has the potential to agitate the academic activity of the system, and thereby move this towards exceptional academic achievement outcomes. If the subject of the evolving system is able to manage and direct the contradiction, this then is theorised to have the potential to contribute to its own transformation.

6.3 Concluding Remarks

Chapter 6 has initiated the theoretically informed analysis in this thesis. This involved the presentation and analysis of an evolving system of exceptional academic activity. This system was constructed via the use of the activity system triangle as a heuristic device, in dialogue with the qualitative data produced in the focus group discussions, auto-photographic compilations, and photo-elicitation interviews. In a five-part move covering components of subject/object/outcome, mediating artefacts, rules, community, and division of labour, an analysis of various features of an evolving system that were likely to generate exceptional academic outcomes was presented. In particular, this system exemplified the activity of an African exceptional academic achiever as subject. An inherent primary contradiction between notions of the individual and the collective was identifiable, while a secondary contradiction between the community/division of labour components (i.e., co-regulated learning) and the mediating artefact component (i.e., SRL study strategies) reiterated this primary contradiction.

The evolving system, as presented and analysed in Chapter 6, provided a mechanism for conceptualising underrepresented instances of exceptional academic achievement in South African undergraduate higher education. Whereas the photographic-infused descriptive accounts presented in Chapter 5 provided individual representations of exceptional academic achievement, the evolving system is a current and collective manifestation that moved the analysis in this thesis beyond the individual level. Individual actions, motives, and emotions are embedded within the collective system; however, they are only understandable and meaningful in their current and collective contexts (Engeström et al., 1999). However, just as current and collective contexts (e.g., the evolving system presented in this chapter) are highly relevant for understanding individual action, so too is a historical perspective (Stetsenko & Arievidtch, 2004).

As a result, it became theoretically and practically essential to construct and analyse a historical perspective. This historical perspective is presented in Chapter 7, and provides a historical dimension to the phenomenon of exceptional academic achievement in South African higher education.

Chapter 7. A Historical System of Exceptional Academic Activity

7.1 Introduction and Overview of Chapter

Chapter 6 presented the process involved in the construction and analysis of an evolving system of exceptional academic activity. This drew on a framework offered by sociocultural principles and activity theory (see Figure 6-1). In addition to providing a collective basis for conceptualising the phenomenon of exceptional academic achievement in African students, the analysis also revealed a primary and secondary contradiction (see subsections 6.2.3 and 6.2.5). These contradictions were theorised to offer opportunities for systemic change and transformation. This is discussed in more detail in Chapter 9. The construction of the evolving system arose naturally as an outcome of the qualitative data analysis and the second and third research questions. However, as described in Chapter 3 (see section 3.2), the construction and analysis of a historical system became essential in light of the grounding sociocultural and activity theory frameworks used in this study. As motivated throughout this thesis, a sociocultural and activity theory perspective is necessarily historical. As a result, a historical perspective was deemed to be an essential aspect of the analysis, providing a historical and collective system within which individual action could be embedded and contextualised.

Similar to the process followed in Chapter 6, Chapter 7 presents the construction and analysis of a historical system of exceptional academic activity, tracing components of subject/object/outcome, mediating artefacts, rules, community, and division of labour. In addition, a primary contradiction that arose from the construction and analysis is discussed.

7.2 System Components

Similar to the evolving system, the historical system of exceptional academic activity (hereafter referred to as “the historical system”) was constructed in response to the theoretically informed analysis engaged in with the eight auto-photographical compilations, and the photo-elicitation interviews conducted in relation to these compilations. However, the construction of the historical system was informed more specifically by the photographs (and photo-elicitation interviews) taken by the research participants that reflected their academic activity prior to

starting university. During the data production stage of the study, the research participants were requested to take photographs that were reflective of both their current and historical academic activities. It is the latter that predominantly informed the historical system, represented in Figure 7-1.

It was difficult to clearly define a time-frame around which the historical system was constructed. The research participants were requested to produce historical evidence of their academic activity prior to starting university, and given the ages of the participants, this included material from as recent as 2009. Much of the photographic data generated evidence of moments around the turn of the 20th century. However, these moments showed traces of residual history from earlier decades and, where relevant and appropriate, these have also been incorporated into the analysis.

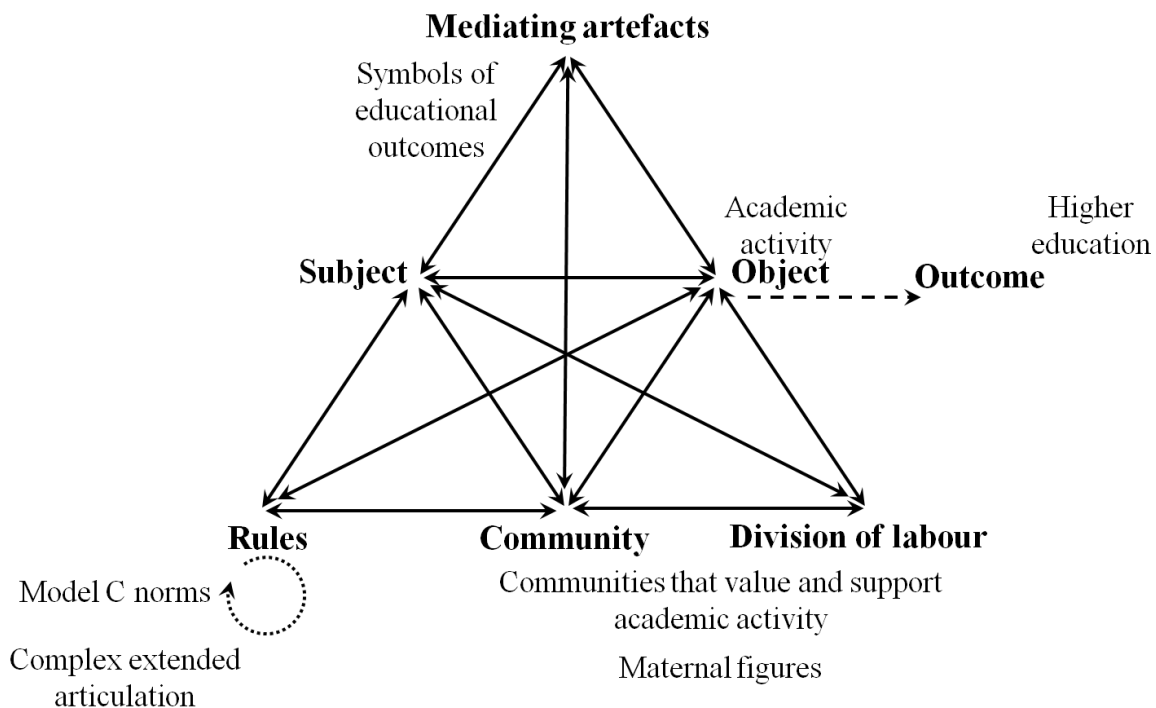


Figure 7-1. A historical system of exceptional academic activity

7.2.1 Subject, object, and outcome.

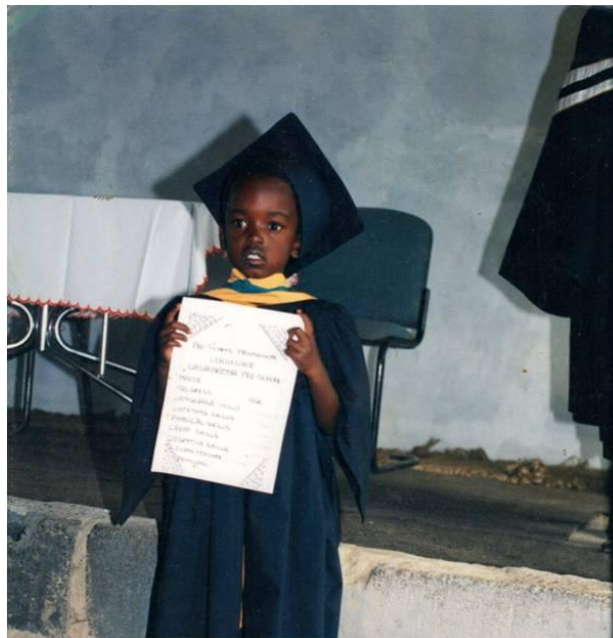
In the evolving system referred to in Chapter 6, the *object* of the system was identified as academic activity in higher education, while the *subject* referred to academically exceptional African higher education students. The object in the historical activity system was still identifiable as academic activity; however, this was now predominantly located at the level of primary and secondary education. In contrast, academic activity in the evolving system was localised at higher education level. Although the object of activity in the historical system was firmly located at schooling levels prior to higher education, a higher education trajectory was clearly evident in the historical activity system. The subject in the historical system was specified as African children of school-going age. This was informed by the eight research participants who produced data for the auto-photographic stage of Phase 2 of the study. The *outcome* of the historical activity system was identified as higher education. This captured the subject's current educational destination.

7.2.2 Mediating artefacts.

Mediating artefacts include both concrete tools and symbolic signs (Miettinen et al., 2012). Although it is likely that a variety of concrete tools existed, which mediated the historical system, a set of symbols of educational outcomes recurred during analysis of the historical data, and these are afforded prominence in the following section. In particular, certificates, awards, and academic gowns appeared repeatedly as the focal point of historical photographs produced and/or selected (see for example Photograph 7-1).

During his childhood, the research participant (Bongane) who presented Photograph 7-1 as part of his auto-photographical compilation, reportedly referred to this photograph as *isiThombe semfundo ephakeme* (literally “a photograph of education that is high”). The research participant translated the title that he gave the photograph as “The picture of my higher education”, and explained that the photograph was taken in 1996 at a ceremony to commemorate the end of his pre-schooling, and the start of formal schooling. This photograph had been enlarged and framed, and hung in Bongane's home throughout his childhood. It was commonly referred to as *isiThombe semfundo ephakeme* by himself and members of his family. Although Bongane

reported that he eventually came to understand that the photograph was not technically a photograph of his “higher education”, it had nonetheless become a symbol of this, and a symbol of something that he felt compelled to actualise. At the time of the data production process, Bongane was in the final semester of his undergraduate degree. The reality of being about to acquire a more literal photograph of his higher education graduation was significant, and provided a poignant connection between past, present, and future. It is the symbols of educational outcomes that are located in childhood, but connected to higher education that are proposed to mediate the subject–object relationship in the historical system.



Photograph 7-1. isiThombe semfundo ephakeme (Bongane H2)

Although most of the symbols of educational outcomes within the historical system existed prior to the subject entering higher education, they had obvious links to icons associated with higher education (e.g., academic gowns and degree certificates). As a mid-point between the 1996 photograph and Bongane’s impending graduation in 2013, a photograph taken in 2002 (see Photograph 7-2) connected these points across time.

Ja, on this day the teachers were wearing their gowns and I really like that. It's not about the picture and the award but it's actually what they are wearing here. And what is not in the picture? It's the principal. The principal had a doctorate and he was wearing a red gown, and from that day, I knew that the red gown symbolises a doctorate, and I actually wanted to get this. (Bongane, PEI 1, 1006)

In addition to an awareness around the significance of academic gowns (and in particular red gowns), Bongane highlighted the distinction between the obvious subject of the photograph (himself), and what he perceived the photograph was really about. He was acutely aware of the achievements of others from his community, the others being those who were seated behind him in Photograph 7-2. Bongane assimilated the achievements of others, and foresaw these as achievements in his future.



Photograph 7-2. Untitled (Bongane H1)

In essence, the symbols of educational outcomes appeared to provide an important mediating function between subject and object in the historical system. The symbols of other community members' educational outcomes were also provided as evidence of the subject's own academic activity prior to starting university. Along with their own achievements, icons of future (higher

education) outcomes seemed to provide a strong “pull” in the academic activity of the historical system.

7.2.3 Rules.

Two socio-educational norms came to best represent the rules of the historical system. These included “Model C norms” and the notion of “complex extended articulation” to higher education. Although these norms are historical, it is probable that residual effects from these persist in the evolving system, and the institutional system (to be presented in Chapter 8). The term “Model C” is no longer officially used in South African secondary education; however it is still commonly used in everyday language and was thus incorporated in the rules of the historical system. As identified in Chapter 5 (see subsection 5.3.1), former Model C schools were reserved for white learners during the Apartheid era and were (and still are) better resourced in comparison to schools that were reserved for black, coloured, and Indian learners (CHE, 2010; Msila, 2005).

Photograph 5-5 (in Chapter 5) was included to exemplify the role that Joy’s past played in her vision for her future. The photograph signalled Joy’s transition to a former Model C school during her secondary education. Although this transition to a former Model C school was described as difficult, it was also presented as important for Joy’s educational development. During this educational development, she described a range of socio-educational norms, attributing these to her new schooling environment. The norms included (among others) getting “support if you are struggling (185) doing a lot of homework ... sitting down with your books and studying (191)... learning how to write essays [and] learning how to read” (Joy, PEI 2, 191, 317). At present, the matriculation performance of learners from former Model C schools (predominantly ranked as quintile 5⁷⁹) far exceeds those in schools ranked from quintile 1 to 3

⁷⁹ Schools in South Africa are classified into five quintiles. The lower the quintile, the higher the level of poverty in the area within which the school is located (Department of Basic Education [DBE], 2013).

(DBE, 2013).⁸⁰ This contributes to the persistent perception that former Model C schools facilitate the acquisition of socio-educational norms and behaviours that enable better academic performance upon entry into higher education.

In contrast, the research participants in this study who did not attend former Model C schools prior to university appeared to have generated the very same socio-educational norms. Whereas Joy attributed her acquisition of these norms in relation to attendance of a former Model C school, the other participants appeared to have acquired these norms elsewhere. For example, “What happened is that in matric I had a B in Mathematics and I was teaching myself in matric, I didn’t have any teacher” (Sikhumbuso, PEI 8, 120). Similarly,

... I would go, like at six [in the evening] when I come back from playing, I would go with the people, the other class mates. I would go with them to the school and have some discussions, some previous papers, and stuff like that, maybe for two hours. Then at eight, we come back, go separate ways and go study. (Sifiso, PEI 6, 273)

Here, Sifiso and Sikhumbuso provide evidence of having initiated their own socio-educational norms in the absence of these being provided by a schooling system. In the absence of teachers and adequate support, Sifiso and Sikhumbuso seemed to have developed “Model C” norms, although for them these did not belong to a Model C school environment. In addition, they (and all of the other research participants) also identified the educational role that mentors in their communities played in instilling effective socio-educational norms into their study behaviours and identities. Specifically, I referred to Photograph 5-3 in Chapter 5 when describing the role that a mentor played in the development of Sikhumbuso’s mathematical skills. Of relevance is that this mentor was sought out by Sikhumbuso, illustrating the necessity for students from schooling systems that do not provide scaffolding for support and mentoring to seek these out themselves.

⁸⁰ South Africa’s Department of Basic Education (DBE) was established in 2009, this arising from the original Department of Education (<http://www.hesa.org.za/partnersandlinks/departments-higher-education-training-dhet>).

Although I have referred to this section on socio-educational norms as Model C norms, there is a primary contradiction within this component of the historical system (represented as a circular arrow in the bottom left of Figure 7-1). It is apparent that these norms do not necessarily belong to a former Model C system. Among some of the research participants, these are norms that arose in less-resourced schooling systems. However, this was seemingly dependent on the individual student's response to the schooling system, as well as the activity of the surrounding community in establishing these norms for the individual student. It is the multiple intersecting components of the historical system (and not necessarily the subject per se) that facilitate the setting up and internalisation of relevant socio-educational norms and behaviours that seem to enable high academic achievement outcomes in subsequent years.

The second socio-educational norm that became evident in the historical system pertained to an extended articulation path to higher education. "Articulation can be used to refer to the linkage between educational levels, phases, programmes or qualification types. There are thus vertical, horizontal, and diagonal forms of articulation" (CHE, 2013, p. 5). The term "articulation gap" can be used to describe the "mismatch or discontinuity between the learning requirements of higher education programs and the actual knowledge and competencies of first-time entering students" (Fisher & Scott, 2011, p. 12). For the subject in the historical system, the presence or absence of an articulation gap seemed secondary to a prominent experience of *complex extended articulation*. The notion of complex extended articulation is introduced in this thesis to capture the non-direct path, and sometimes lengthy transition period from secondary to higher education. Of the eight research participants (who represented the subject in the historical system), seven had not followed (or had the opportunity to follow) a direct articulation path from secondary schooling to their current higher education activities. As identified earlier, the subject in the historical system was specified as African children of school-going age (see subsection 7.2.1). As future subjects in the evolving system, it would be remiss not to explore the possible reasons why a path of complex extended articulation was seemingly associated with subsequent exceptional outcomes in higher education.

The complex extended articulation for the seven research participants was experienced as time-consuming and at times unproductive. For example, it was identified, “I stayed at home for like three years” (Joy, FGD 3, 225), while Xolile remarked, “I had to stay at home for like five years, [and] by that time I was wondering if I would ever go to university” (Xolile, FGD 3, 463). Although the complex extended articulation is problematic in that it could be understood as “lost” educational time, it is also possible that this path provided opportunities for the subject to inadvertently address any gaps in academic and personal preparedness for higher education activities. Whereas it could be anticipated that time spent out of formal education would lead to a loss of skills required to achieve in higher education, this was not the case for the subject in the historical system. In Chapter 5, I referred to how Joy reported reading several English books during the time she spent at home, and how she linked this reading (and her current continued interest in reading) to her academic performance (see subsection 5.3.2). Moreover, several of the other research participants identified having employment experiences between school and university. They described the skills that these experiences allowed them to develop, and then how these skills had in turn facilitated their exceptional academic achievement in the evolving system. Finally, McCaslin’s (2009) motivational constructs of struggle, negotiation, and opportunity provide a reference for understanding what may have happened during points of complex extended articulation. Although direct articulation from secondary to higher education is likely to be an ideal scenario for some, it may not always provide sufficient challenge and struggle to bring about exceptional academic achievement in higher education.

7.2.4 Community and division of labour.

When constructing and analysing the historical system, the dynamics of the community inadvertently yielded information about the ways in which various community members contributed towards the labour of the collective object-oriented activity (Cole, 2005). Therefore, in the historical system, the components of community and division of labour are presented concurrently. In the historical system, the community was conceptualised to include those people who existed in close biological or intentional proximity to the subject. The term mostly included family members, especially given that the subject in the historical system was formulated as a child. In addition, the subject’s school community in the community and division of labour

components of the historical system were not included as this had been accommodated in the rules component of the historical system (i.e., Model C norms). Two related elements from the components of community and division of labour became prominent in the analysis of the historical system, namely communities that value and support academic activity and maternal figures.

When schooling systems were not conducive to learning and high academic achievement outcomes (e.g., gaps in the provision of teaching and limited resources for teaching), individual participants were compelled to seek communities external to school that valued and supported academic activity. Sometimes families and home environments provided this; however, establishing and maintaining a relationship with an academic mentor while at school (see for example Photograph 5-3), and forming a study group of peers were other ways of securing support for academic activity that generated high-level outcomes. The latter was exemplified in almost all of the research participants who contributed to this study. In addition, although educational and employment opportunities for adult women were conceptualised as being limited in the historical system of academic activity, their role in the community of the historical system was nonetheless seen as pervasive. Repeated references to and photographs of mothers, grandmothers, sisters, and other maternal figures were presented by the research participants when exploring moments in their academic histories. These references were frequently affect-laden, and charged with a need to recognise the role that maternal figures played in the historical system and continued to play in their current academic activities. For example, maternal figures were referred to as “My anchor” by Joy (see Photograph 5-6) and “My foundation” by Sikhumbuso (see subsection 5.2.2). In light of this, maternal figures appeared to facilitate the labour of the academic activity in the historical system in various ways. Sometimes maternal figures played grounding roles, anchoring the subject in the historical system. Alternatively, maternal figures were experienced as inspirational and motivational, providing a future and hopeful orientation.

7.3 Concluding Remarks

The construction and analysis of a historical system involved the explication of an African child as subject in an academic activity system with higher education outcomes. The role of the various components of mediating artefacts, rules, and community and division of labour were analysed in relation to their contribution to the higher education outcomes. An inherent primary contradiction within the rule component was identifiable, this revealing the problem of associating former Model C norms with exceptional academic achievement in higher education. In summary, whereas the evolving system (Chapter 6) provided a current and collective account of exceptional academic achievement, the historical system (Chapter 7) provides a cultural historical perspective on the development of exceptional academic achievement in African students in higher education. Chapter 8 presents the construction and analysis of an institutional system of (exceptional) academic activity, and signifies a shift in analysis towards an overarching collective level.

Chapter 8. An Institutional System of (Exceptional) Academic Activity

8.1 Introduction and Overview of Chapter

The previous two chapters presented an evolving activity system and a historical activity system of exceptional academic achievement. These systems exemplified a subject that is academically exceptional; however, this exceptionality was also identified as unlikely in Phase 1 of this study. Chapter 8 presents an academic activity system that takes the unit of analysis to an overarching collective level, and refers specifically to academic activity at an institutional level. Whereas the evolving and historical systems were representative of a subset of academically exceptional students in higher education, the activity system presented in Chapter 8 is inclusive of all successful academic activity at an institution. Similar to the process followed in Chapters 6 and 7, Chapter 8 presents the construction and analysis of an institutional system of (exceptional) academic activity, tracing components of subject/object/outcome, mediating artefacts, rules, community, and division of labour. In addition, a primary contradiction that arose from the construction and analysis is discussed.

8.2 System Components

The third activity system presented in this thesis was predominantly constructed from two sources of data. This firstly involved the integration of the quantitative data produced during Phase 1 of the study, and secondly, the transcriptions from the three focus group discussions conducted with 18 of the participants from Phase 2 of the study. The third activity system was referred to as an “institutional” system of academic activity because it incorporated five years of undergraduate graduation data from a higher education institution (i.e., UKZN), as well as an analysis and explanation of the institutional data from the perspective of high-achieving students who were studying at UKZN at the time of the data production. The institutional system of academic activity (hereafter referred to as “the institutional system”) resonates with the findings presented in Chapter 4. This is because the same sources of data were used to generate the current chapter and Chapter 4. In this way, the construction and analysis of the institutional system allowed for an analysis (and integration of analysis) of the data across the quantitative

and qualitative phases, and functioned to enhance the mixing across data analyses, and resultant mixed method inference quality.

The construction and analysis of this institutional system was an attempt to represent academic activity (and academic achievement outcomes) at a collective and institutional level. As identified earlier, within the third generation of activity theory, an appropriate unit of analysis is at the level of collective object-oriented activity systems (Engeström, 1987). In light of this, the institutional system is congruent with current analytic trends in activity theory research.

8.2.1 Subject, object, and outcome.

For the institutional system, the higher education student was positioned as the *subject* and the academic activity engaged in by the student was identified as that which linked the *subject* and the *object* (see Figure 8-1). More specifically, however, the subject in the institutional system was positioned to include students who successfully completed their undergraduate degrees, which was informed by the graduation data from the quantitative phase of this study. Although all students in the institutional system were those who had completed their undergraduate degrees and therefore shared a similar outcome (i.e., degree completion/successful throughput), this outcome could be differentiated according to the level at which the subject graduated (i.e., exceptional academic achiever or regular graduate). As described in Chapter 4, some of the subjects in the institutional activity system were found to be more likely to excel.⁸¹

⁸¹ White female students, students not on financial aid, and students with relatively higher matriculation scores and matriculation English symbols were found to be more likely to excel.

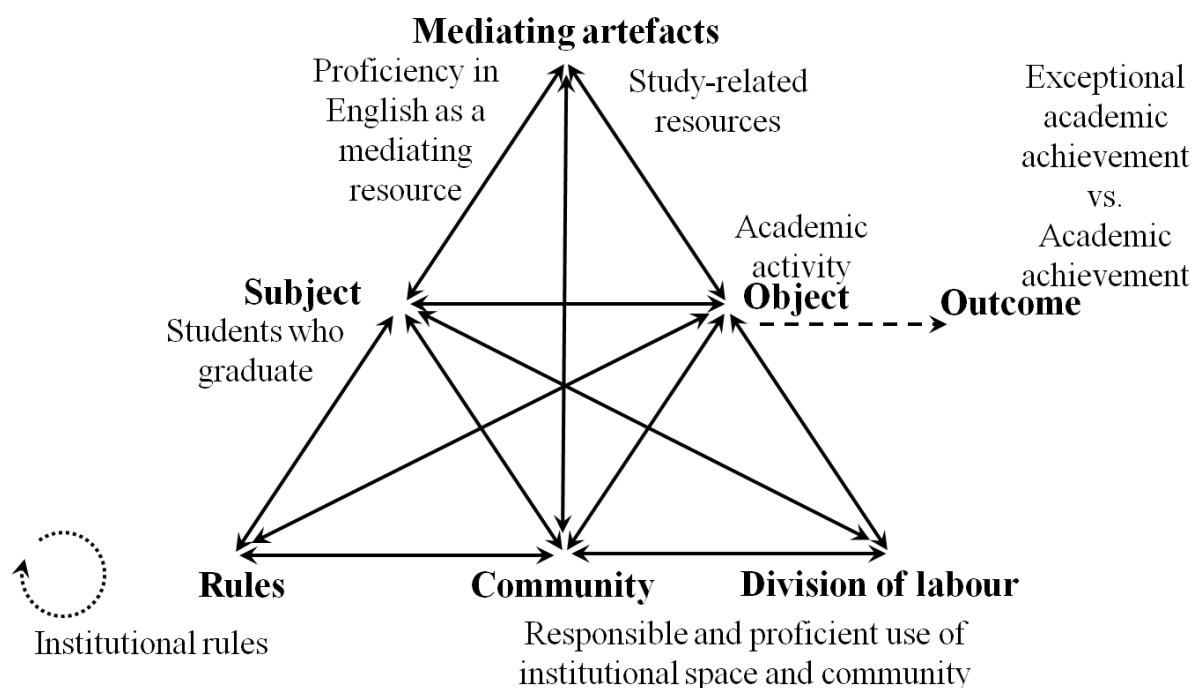


Figure 8-1. An institutional system of (exceptional) academic activity

The differentiation between exceptional academic achievement and academic achievement (i.e., regular graduate) within the institutional activity system is not readily recognised in contemporary South African higher education. As highlighted in Chapter 1, the focus on the tension between throughput and dropout/failure and not on the varying levels of quality within the “throughput” has been a dominant feature in current South African higher education. Conceptualising levels within the quality of throughput at undergraduate level is therefore novel, and raises interesting questions around useful forms of inquiry in higher education studies.

8.2.2 Mediating artefacts.

Both concrete cultural and internalised symbolic artefacts can be conceptualised as resources in the institutional system. Perhaps the most commonly identified mediating artefact is language (a psychological tool) and this was strongly identifiable in the institutional system. After presenting proficiency in English as the first mediating resource (artefact), a second set of concrete resources, namely study-related resources is presented. Study-related resources are

predominantly conceptualised as examples of concrete cultural artefacts; however, as will become evident, they too may become internalised as psychological tools.

8.2.2.1 Proficiency in English as a mediating artefact and resource.

Proficiency in English was found to mediate exceptional academic achievement at UKZN in two ways. Firstly, students who were more proficient in English were undoubtedly perceived by the research participants as being at a relative advantage when it came to grasping theoretical concepts taught in English, as well as comprehending and responding appropriately to questions in tests and examinations. Secondly, the research participants also perceived English as a language system to mediate academic activity at UKZN through its inherent dominant status.

In Chapter 4 (see subsection 4.2.4), the UKZN logistic regression model identified that incremental increases in a student's matriculation English symbol were associated with increased odds of exceptional academic achievement. In response to this, the participants across all three focus group discussions offered interpretations of why proficiency in English (and not necessarily matriculation English symbol) may increase a student's chances of exceptional academic achievement.

I found that we because we not speaking English as our first language, sometimes you find yourself not doing well or failing because you didn't understand what the question wanted you to answer. Not because you didn't study and know the question. If maybe we revising the paper and the lecturer says, "This was supposed to be, this was supposed to be the answer," and I was saying "Aah (.) I knew that but I didn't understand what the question was really saying to me." (Sibongile, FGD 3, 171)

In the above excerpt, Sibongile refers to her own perceived struggle with English at university, specifically around interpreting and responding accurately to test/examination questions.

Although she qualified that she did English as a second language during her matriculation year and went to a "township school" (Sibongile, FGD 3, 173), she unknowingly also affirmed that her current levels of exceptional academic achievement could be partially explained by her high achievement in English (obtaining an A for matriculation English) when at school. Sibongile also claimed, "I don't think it [her vocabulary] will ever match a white person" (Sibongile, FGD 3, 174). During the same focus group discussion, another participant contested that, "I don't think it

is only students that have poor rural backgrounds that actually struggle with questions ... It's an issue even for people who have good academic backgrounds" (Ntokozo, FGD 3, 213, 219). In relation to this claim, Ntokozo went on to discuss what he perceived as "the gap" between high school and university for all students, regardless of their race or socio-economic and educational backgrounds. For Ntokozo, the gap between school and university was what influenced how students understood test/examination questions; not necessarily their proficiency in English.

Ntokozo's argument is consistent with positions which theorise the articulation gap between school and higher education (as discussed in subsection 7.2.3), and related positions which advance a deeper conception of language. These positions highlight epistemological access (Morrow, 2009) and academic literacy (Mgqwashu, 2011) as more meaningful mediators of academic achievement, asserting that English language proficiency alone is insufficient for academic achievement in higher education. The idea that students in general (regardless of their proficiency in English) could achieve academically if they were assisted to access the discourse of higher education features regularly in literature pertaining to high drop-out rates and low throughput in South African higher education (Wilson-Strydom, 2010, 2011; Wilson-Strydom & Hay, 2010). Although the institutional system recognises how levels of proficiency in English seem to mediate exceptional academic achievement, this does not exclude the possibility that issues pertaining to epistemological access and academic literacy also play a role in academic achievement.

The second way in which proficiency in English was perceived to mediate academic activity in the institutional system was through its inherent dominant status. Most of the focus group discussion participants (all second language English speakers) identified that their exceptional academic achievement at UKZN was enhanced or compromised by their levels of English proficiency. In this, they inadvertently positioned English as a necessary and dominant mediating tool and resource in their academic activity. A possible resistance to this dominant status was also noticeable.

I can't speak Zulu. Sorry, if I may sound biased, but Zulu people they don't like to speak English. And the only way to get better in English is to speak it (.) because white people are good because they speak it. (Maipfi, FGD 3, 264)

Maipfi (a Tshivenda speaker) ascribed his difficulties in establishing social relationships at UKZN to what he perceived as the reluctance by Zulu people to engage with him in English. “They’ve got this tendency of saying, ‘This is our home, we can’t [not in the sense of not being able to, but rather refusing to] speak English’” (Maipfi, FGD 3, 264). He further surmised that this “attitude is a factor for most black students because they don’t want to have anything to do with English” (Maipfi, FGD 3, 266), also implying a resistance to engaging educationally in English. Although Maipfi’s comments represent his experience at UKZN and within the institutional system, these comments do resonate with the fact that isiZulu is spoken as a first language by 78% of the KZN population (Statistics South Africa, 2012), and the proportion of UKZN students who speak isiZulu as a first language is growing.⁸² Given that a growing proportion of students speak isiZulu as their first language at UKZN, and that KZN is home to a majority of isiZulu speakers, it would be reasonable to expect that people within the province would want to learn and socialise in their home language. It was questioned “whether or not we should consider having people being taught in their own languages” (Ntokozo, FGD 3, 276), and it was concluded that –

... because you find that when they are out of university, the people that we are working with are ordinary black people from the streets and they will be speaking isiZulu, so to challenge them to speak (.) sorry, write or read English in a certain way (.) it’s very unnecessary because when they go out there they not going to be associating in English, they going to be serving society that is predominantly their own. (Ntokozo, FGD 3, 279)

Interestingly, Ntokozo’s assertion about being taught in isiZulu only applied to careers that “serve the community” (Ntokozo, FGD 3, 281). He went on to note, “Sometimes, it [being taught

⁸² The quantitative sample used for this study showed that between 2006 and 2010, 31% of UKZN graduates listed isiZulu as their home (first) language. During this time, the majority of UKZN graduates (60.8%) listed English as their home language. This proportion correlated closely with the proportion of Indian and white students in the graduation sample. Between 2011 and 2013, the number of registered students who listed isiZulu as their home language grew from 48% to 52%.

in English] may be significant if you going to develop um (.) into the corporate world for example” (Ntokozo, FGD 3, 280). For Ntokozo, being taught in isiZulu was acceptable if your career prospects were in social services and community development. However, prospective corporate workers (presumably those with prospective financial power) were perceived as needing to submit to English as a language system in order to function in the corporate world. According to Ntokozo then, whereas social services were seen as needing to be delivered in a community’s home language, corporate and economic power still needed to be negotiated in English.

8.2.2.2 Study-related resources.

It also became evident that study-related resources (e.g., textbooks, laptops) were perceived as important mediating artefacts for a student to excel in the institutional system. As with the English language system, however, study-related resources were not isolated entities, but were closely related to other constructs of race and socio-economic status (and financial aid). During the three focus group discussions, it was repeatedly asserted that being on financial aid was viewed as a proxy for a poor socio-economic background, educational disadvantage,⁸³ and a subsequent inability to access necessary study-related resources.⁸⁴ “Most students on financial aid are those who come from poor backgrounds and an education system that is not okay” (Joy, FGD 3, 69). Similarly, in a separate focus group discussion, Sifiso noted that students on financial aid “usually come from disadvantaged backgrounds” (Sifiso, FGD 2, 67).

Even though financial aid loans are likely to have contributed to the widening of access to higher education for students from poor backgrounds, “the financial aid may not be enough” (Sifiso, FGD 2, 85) to contribute to exceptional academic achievement. It may not be enough in the sense that, “Most students who are on financial aid (.) tend not to perform well, because they

⁸³ In Chapter 1 (subsection 1.2.1), it was identified that the term educational disadvantage came to the fore in South African higher education studies in the 1990s. As physical access to South African higher education increased, the term was used to describe students who were seemingly disadvantaged by their prior schooling experiences (CHE, 2010).

⁸⁴ The association between NSFAS, and socio-economic and educational disadvantage is not unexpected given that the latter forms part of the eligibility criteria for a NSFAS award (Republic of South Africa, 1999).

don't have enough resources in terms of laptops, computers and other books" (Johnson, FGD 3, 106). Participants across all three of the focus group discussions explained financial aid students' decreased likelihood of exceptional academic achievement as being related to their socio-economic circumstances, and subsequent inability to access textbooks and study material. In contrast, white students were perceived as having an advantage in the exceptional academic achievement trajectory because of their access to finances which, in turn, could support their study-related needs.

The white males are far more better off. They are more resourced financially (.) even any kind of instrument you may require to assist you in to study. If you think of it (.) books for example, they just purchase books. They've got vehicles to attend; they could come back at any time of the night to work. (Khulekani, FGD 1, 313)

In addition to the psychological tool of language, concrete tools (study-related resources) were therefore also perceived to mediate the relationship between subject and object (student and academic activity), and to contribute to the transformation of the object into high-level academic outcomes. However, it was important to question why the focus group discussion participants (all African students who had excelled academically) reinforced conflated assumptions around poverty, language, material resources, and academic achievement. From a critical perspective, it is plausible that dominant social systems may indoctrinate the beliefs and experiences that those who are disempowered (through money, resources that money can buy, and language) are less likely to excel. This assumption seems to hold even when it is at odds with an individual's experience.

8.2.3 Rules.

In accordance with the category of rules in the activity system triangle (see Figure 8-1), a set of *institutional rules* became apparent in the construction and analysis of the institutional system. Several existing rules seemed to function in the institutional system, and some of those that specifically pertained to exceptional academic achievement outcomes included:

- rules for graduating *cum laude* or *summa cum laude*;
- rules for obtaining a distinction;

- norms and conventions for being awarded a certificate of merit or a dean’s commendation;
- rules for acceptable test- and examination-taking behaviour; and
- norms that direct how high academic achievement could be attained.

Although some of the rules may be explicitly documented by a higher education institution (e.g., in rule, college, or faculty handbooks), they may also be hidden in the sense that they are not necessarily part of the everyday discourse for students in higher education. In addition, many of the norms pertaining to high academic achievement in higher education would not be evident immediately upon entry into higher education. It is likely to take some time for a first-year student to acclimatise to the norms that yield high achievement outcomes in higher education, especially where those norms differ from those required at school level. In addition, high-achievement norms are at risk of not becoming established at all, especially where competing norms that govern academic survival and throughput prevail (e.g., just doing enough to pass). Many of the research participants (who were all high-achieving students) identified a need for “UKZN”⁸⁵ to be more explicit about the rules for and benefits from achieving academically.

Maybe the university should start (.) even when you start registering, saying maybe if you get certain grades (.) if you graduate *cum laude* or *summa cum laude* (.) Also when I first got my merit certificate, I asked them, “What was this?” cos I didn’t know what it was. Then they said “Oh, congratulations.” (Sindi, FGD 1, 197)

Similarly, Hloniphile remarked, “I didn’t know this, that there was something called *cum laude*” (Hloniphile, FGD 1, 211). As highlighted in Chapter 1 (see subsection 1.2.3), current discourses in South African higher education are focused on understanding and responding to academic failure and underperformance. This is necessarily accompanied by a corresponding focus on rules pertaining to failure and resultant academic exclusion. Perhaps this focus contradicts academic activity that generates high academic achievement outcomes. It is questioned whether

⁸⁵ Inverted commas are used in this instance because it could be argued that it is not UKZN’s (or any institutional system’s) responsibility to make rules pertaining to high academic achievement explicit. All UKZN students have access to the university rules pertaining to high academic achievement; however, it is likely that these rules are not always made explicit within the university system, and/or actively read and assimilated by students.

there is room within the institutional system for the norms and conventions pertaining to exceptional academic achievement to be emphasised, and what effect this would have in the system and on the resultant outcomes.

Cos really, the issue of reinforcement. I think it can work. Even if you are introduced at first year, you are just told, “Listen if you do like this you are in a greater chance for graduating *cum laude*, and you are in a greater chance to getting scholarships and all those things to proceed with your studies.” I think it can work. (Mzolisi, FGD 1, 207)

The analysis of the institutional system (and particularly a set of institutional rules pertaining to academic performance) brought into question which institutional rules pertaining to academic activity prevailed, and whether these should prevail. In essence, this was reflected as a primary contradiction within the institutional system, specifically reflecting a contradiction within one component of the system. This primary contradiction is reflected in Figure 8-1 as a circular arrow, and functions to highlight the tension within institutional rules (and norms) that govern academic activity and achievement. Although the rules for academic achievement across the spectrum of performance levels are clearly documented in rule handbooks, it appeared to the research participants as if those that governed failure and poor performance overshadowed those that emphasised exceptional academic achievement. In spite of this, it is important to highlight that the primary contradiction within the component of the system has the potential to initiate change and transformation. If the institutional system is able to bring rules and discourses around exceptionality into balance with rules and discourses that pertain to failure, the system is likely to increase its potential to generate exceptional academic achievement outcomes.

8.2.4 Community and division of labour.

Similar to the historical system, the process of constructing and analysing the institutional system yielded dynamics around *community* that inadvertently generated dynamics pertaining to the *division of labour*. In particular, community dynamics also provided information as to how various community members contributed towards (or could be compelled to contribute towards) the collective object-oriented activity (Cole, 2005). In effect then, the analysis of community also yielded insight into the ways in which labour (or activity) within the system was divided.

Therefore, in the institutional system, components of community and division of labour are presented concurrently.

That skill of being able to interact. You know, most students don't have it. They come to campus, they attend lectures and then they just go home ... In the School of Law, most lecturers know me – I am able to interact with them. So you learn that, you know (.) perhaps before I didn't know that lecturers were actually soft people ((laughs)) that you can actually [interact with], and are very impressed by students that come and chat to them, not only about the law, but about you know general stuff. (Ntokozo, PEI 4, 486)

The inclination and ability to interact with lecturers is presented above as an important community dynamic in the institutional activity system. Although there was evidence of multiple communities and sub-communities within the institutional system, perhaps the most central community included lecturers. Whereas peers were afforded central prominence in the academic activity of the evolving system, lecturers were offered as the primary community in the institutional system. If students are unable to interact with lecturers both within and beyond the lecture room, they may be able to pass; however, they are less likely to excel. Seeking clarity on academic issues from lecturers was something that was presented as central to many of the participants (see Photograph 8-1).

This photograph is about clarity because it was after the lecture and there was something that I didn't understand. So, ja, I just wanted like clarity. (Xolile, PEI 8, 275)



Photograph 8-1. Clarity (Xolile C8)

Xolile went on to specify that in Photograph 8-1, she is depicted after the lecture had finished, discussing with the lecturer something that she did not understand in the course pack. In addition to simply interacting with and seeking clarity with lecturers as community members, exceptional students in the institutional system appeared to engage lecturers in ways that maximised the benefit to the student. More than there being “lecturers I need to consult if there is a problem” (Mzolisi, FGD 1, 482), Mzolisi also asserted –

I don't like this selfish attitude of thinking for yourself. So, what I always think is [that] I need to open space for someone else. So I need to make sure that I get myself, because I got an opportunity. There are lecturers I need to consult if there is a problem. There are resources. I need to use those resources. There are computers there. I need to use them. They are there for me. I have paid for them. I need to use them all for my benefit and be out of this place. I need to be in this place not because I am repeating the modules. I need to be in this place doing something else, and opening a space for someone else. (Mzolisi, FGD 1, 484)

In addition to identifying the need to consult with lecturers if there is a problem, Mzolisi brings into focus a range of other community resources (e.g., computers) that he felt compelled to use for his academic achievement in the above excerpt. Moreover, he also referred to a sense of

social awareness and responsibility (i.e., of moving efficiently through the system so that he did not obstruct others from doing so), and this seemed to have driven his optimal use of the institutional community and resources.

In the institutional system, exceptional students seemed to get more out of the system, and seemed to engage community members in socially responsible and proficient ways. This highlights how the labour of academic activity can be modulated differently by different groups of students, and how this in turn could have an impact on the types of outcomes that the institutional system produces.

8.3 Concluding Remarks

Chapter 8 has presented the construction and analysis of an institutional system of academic activity. As with the evolving and historical systems of exceptional academic activity, the institutional system was constructed and analysed via the use of the activity theory informed activity system triangle as a heuristic device. In a four-part move covering components of subject/object/outcome, mediating artefact, rules, and community and division of labour, an analysis of various features of an institutional system that generated both successful and exceptional academic outcomes was presented. Although themes of failure, dropout, and academic underachievement are clearly evident in multiple higher education institutions (and the institutional system presented in this chapter), these have been moved out of focus in the institutional system and in this thesis. The institutional system presented and analysed above offered a complementary perspective on the contradiction and struggle between exceptional academic achievement and academic achievement, instead of more commonly presented (higher) education struggles between failure and achievement and throughput.

Part 5. Synthesis Towards Exceptional Academic Achievement

- Chapter 9. Systemic Contradictions, Tensions, Collective Emotions, and Intersections
- Chapter 10. Reorientation: Towards a Socio-Political Object of Exceptional Academic Achievement

Chapter 9. Systemic Contradictions, Tensions, Collective Emotions, and Intersections

... affect is the alpha and the omega, the first and last link, the prologue and epilogue of all mental development. (Vygotsky, 1998, p. 227)

9.1 Introduction and Overview of Chapter

Chapter 9 is the culminating analysis and discussion chapter of this thesis, and functions to integrate the three activity systems presented and analysed in Chapters 6, 7, and 8. Necessarily, this also involves an appropriate assimilation of findings and first-level analyses presented in Chapters 4 and 5.

There are three main sections to Chapter 9, the last two representing a dialectical process of both inward and outward reflection. The first section of Chapter 9 functions to revisit and integrate two contemporary sociocultural concerns presented in Chapter 2 (see subsection 2.3.4 – contradictions and tensions, and collective emotions). The second section of Chapter 9 includes a reiteration (and inward reflection) of the primary and secondary contradictions presented in the evolving, historical, and institutional systems presented in Chapters 6, 7, and 8. The third section of Chapter 9 (see section 9.4) describes an outward reflection which includes the exploration of possible tertiary and quaternary contradictions arising from or impacting on the three activity systems. An integrative outcome of the inward and outward reflection is presented in Chapter 10, this taking the form of a synthesis and reorientation towards a socio-political object of exceptional academic achievement in South African higher education.

9.2 Integrating Contradictions and Tensions, and Collective Emotions

In Chapter 2 (subsection 2.3.4), contradictions and tensions were highlighted as being of central and contemporary relevance for conceptualising and explaining human phenomena from an activity theory perspective. Specifically, it was identified that contradictions and tensions in activity systems could be understood as “the driving force for change and development” (Engeström, 2001, p. 135). I also suggested that these contradictions and tensions could generate collective emotions, which in turn would then have the potential to generate motion, and

subsequent change and transformation. Therefore, although activity systemic contradictions and tensions as well as emotions in activity theory were presented in Chapter 2 (see subsection 2.3.4) as two separate contemporary activity theory concerns, in some ways the notion of emotion could be placed within the trajectory between and/or before activity system contradiction, and activity system change. Therefore, before exploring the contradictions identified in the evolving, historical, and institutional academic activity systems (presented in Chapters 6, 7, and 8), the overarching emotional reflection and subsequent regulatory role played by the emotional reflections for each activity system will be discussed.

9.2.1 Emotional reflections and emotional regulation.

Working backwards (i.e., through Chapters 8, 7, and 6), the collective emotional reflections arising from the analyses of the institutional, historical, and evolving systems of exceptional academic activity are discussed. As mentioned in Chapter 3 (subsection 3.5.6), the process of activity system construction and analysis involved the researcher adopting multiple positions and engaging in an iterative set of dialogues. In addition to using the activity system as a heuristic device through which I dialogued with the various forms of data produced (i.e., focus group discussion transcriptions, auto-photographical compilations, and transcriptions from photo-elicitation interviews), I also engaged in several forms of dialogue with the research participants. The participants did not only provide data in a unidirectional manner, but were also central in explaining and interpreting data. In this way, dialogues in this research study involved research participants in a collaborative interpretation and verification process. As suggested by (Engeström, 1999b), these dialogues facilitate “strong personal involvement [for researcher and research participant], often including emotional encounters with and tense discussions on the data”⁸⁶ (p. 68). For each of the three activity systems presented in the previous chapters, a dominant collective emotion was identifiable and came to be both reflective and potentially regulatory of the relevant activity system.

⁸⁶ I suggest that the personal and emotional aspects of the data production and analysis process described here contributes to the sixth affective domain of quality exercised in this study (see section 3.7)

Given that the institutional system (presented in Chapter 8) was primarily constructed and analysed in relation to the Phase 1 quantitative data and the focus group discussions in response to this data (see section 4.3, and specifically subsection 4.3.1), I returned to the transcripts from the focus group discussions with a view towards isolating elements of emotion. The participants' responses to the Phase 1 findings were not manifestly emotional; however, they did contain an underlying collective emotion that I inferred from the dominant motion in relation to the institutional system. Drawing on Roth's (2011) genetic conception that emotion generates motive, and motive generates motion/action, it became possible to deduce a collective emotion within the institutional system by identifying the manifest motion/action in response to the institutional system. Although there were several responses and explanations to the Phase 1 findings, the dominant motion in response to the institutional system (and the Phase 1 findings) is aptly captured in the response, "They're shocking [and] the question is how can that be changed?" (Sindi, FGD 1, 113, 327). This response was noted in Chapter 4 (subsection 4.3.1) when reporting on the general participant responses to the Phase 1 findings. In addition to the obvious and persistent injustice associated with the findings from Phase 1 of the study, it also became apparent that the participants were already engaged in, had been drawn into, and were motivated to participate in activity that could transform the current status quo and injustice associated with this status quo. Many of the behaviours described in Chapter 5, and the activities identified in Chapters 6, 7, and 8 pertain to discipline, hard-work, and sacrifice. Phrases such as a "drive to succeed", a "driving force in some people", "not wanting to relax", "punishing yourself" (by ensuring that you finish your daily academic tasks), and "blocking everything out and just concentrating" featured strongly in the focus group discussions. This was a group of students who fought to achieve and had "that anger ... to make things right" (Mayibongwe, FGD 2, 38). In conceptualising collective notions of anger in the political arena, Iyer, Schmader, and Lickel (2007) highlight that, because anger is an intensely provocative emotion, it is often associated with a tendency towards action. The authors further suggest that "[a]nger is associated with the goal of actively challenging injustice" (Iyer et al., 2007, p. 574). This suggestion is consistent with Rosenthal's (2006, 2007) work on the tension between capitalism and socialism, and her assertion that anger is inherently related to (and the product of) social injustice. Although not explicit in the data produced for this study, I argue that by isolating the activity (i.e., driving

to achieve, making things right, and persisting), an underlying collective emotion can be identified. This emotion is identified as an anger in response to the injustice associated with inequity of exceptional academic achievement in higher education.

It was relevant for all focus group discussion participants how the current profile of exceptional academic achievement in higher education could be changed. Although success and graduation rates for African higher education students have improved over the past few years, it is apparent that these improvements are not yet being seen at exceptional levels of academic achievement. This is reflective of the persistence of a system of historical injustice, which I have suggested evokes an emotion of anger and a resultant orientation and motion towards change. Exceptional African students in the institutional system “don’t relax, don’t forget where [they are] coming from [and] have to visualise where [they] are going” (Sikhumbuso, FGD 2, 348). In this way, the institutional system reflects a historical and persistent injustice pertaining to the equity of exceptional academic achievement outcomes, and this reflection generates an emotion of anger. It is this emotion of anger that has a regulatory role in the institutional system, a role that has the potential to effect change in the equity of representation of exceptional academic achievement outcomes.

Turning now to consider the collective emotion in the historical system (presented in Chapter 7), three themes in the historical domains from the participants’ descriptions became relevant. In particular, three of the emotions pertaining to historical academic activity were focused on the sadness associated with a desire for freedom (see subsection 5.2.1), the partial loss of cultural identity in exchange for educational opportunity (see Photograph 5-5), and the empty spaces and missing people that surround study spaces (see Photograph 5-11). In constructing and analysing the historical system, and drawing on the above-mentioned data-driven emotional themes, an experience of an edu-emotional struggle came to be reflective of the collective activity of the system. Although there were instances of strength and support in the historical system (e.g., communities that value and support academic activity, maternal figures, and symbols of educational outcomes), these seemed to exist alongside critical moments of educational and personal struggle. However, just as an injustice-based anger was identified as potentially

regulatory of activity in the institutional system, so too was an edu-emotional struggle identified as regulatory of activity in the historical system. This notion is resonant with McCaslin's (2009) presentation of struggle, negotiation, and opportunity as motivational drivers from a co-regulatory perspective.

Within the evolving system of exceptional academic activity (presented in Chapter 6), several values and emotions became manifest during the construction and analysis processes. For example, a positive value was attached to spirituality, while themes of hope and a vision for the future were also apparent. These themes were introduced in Chapter 5 (see subsections 5.2.1, 5.3.1, 5.4.1, and 5.5.1), with each of the participant descriptions offering varying and positive visions for the future. Once introduced in Chapter 5, the visions were integrated into the evolving system of exceptional academic activity, resulting in a construction that seemed to reflect a positive edu-emotional valence. In addition to reflecting the subject's concrete experience of being involved in collective object-oriented academic activity, the positive edu-emotional valence also had an important regulatory role in this activity. It is the positive interaction between spirituality, hope, vision, and exceptionality in higher education that is suggested to contribute to the regulation and direction of the activity of the evolving system.

9.3 Inward Reflections: Primary and Secondary Contradictions

In addition to the identification of central emotions within the three activity systems presented in earlier chapters, the process of constructing and analysing the systems also highlighted three primary contradictions, and one secondary contradiction. These contradictions were discussed as they arose in response to the relevant systems. This is briefly brought into focus below in an attempt to reiterate the core inner contradictory features of the three systems, and how these may contribute to the outcome of exceptional academic achievement in higher education. This re-focus will provide a platform for the second section of the chapter, namely the process of outward reflection where the tertiary and quaternary contradictions between and beyond the three systems are discussed.

The three primary contradictions (and one secondary contradiction) discussed in the three previous chapters are summarised in Table 9-1. Several questions are posed as possible ways in which the contradictions could interact, and lead to exceptional academic achievement in higher education.

Table 9-1
Summary of Primary and Secondary Contradictions and Potential for Change

Activity system and component	Contradiction, and subsequent potential for change
<p>Evolving system of exceptional academic activity:</p> <ul style="list-style-type: none"> • primary contradiction within the rules component (intrapersonal and cooperative competition); and • secondary contradiction between division of labour (co-regulated learning) and mediating artefacts (SRL study-strategies) components. 	<p>In the evolving system, intrapersonal and cooperative competition was inherently contradictory, and gave rise to a primary contradiction which was characterised as a dialectical relationship between individual and collective constructs. This dialectical relationship was reiterated in the secondary contradiction between co-regulated learning (division of labour) and self-regulated learning (mediating artefact). How can higher education teaching and learning environments be created so as to enable cooperative competition? In what ways can students compete cooperatively so as to maximise the potential for all to excel? How can the social and collective nature of learning activity be brought to the fore?</p>
<p>Historical system of exceptional academic activity:</p> <ul style="list-style-type: none"> • primary contradiction within the rules component (Model C norms). 	<p>Socio-educational norms that facilitate exceptional academic achievement were perceived to arise from former Model C schooling systems. In contrast, these socio-educational norms were identified as not being the preserve of former Model C schooling systems, but were also co-creatable in less-resourced schooling environments. How can relevant socio-educational norms that enable high academic achievement be instilled in</p>

Activity system and component	Contradiction, and subsequent potential for change
	higher education, regardless of the schooling systems that students come through?
Institutional system of academic activity:	Rules in the institutional system emphasised those rules pertaining to academic failure and/or adequate
<ul style="list-style-type: none"> • primary contradiction within the rules component (institutional rules) 	performance (i.e., exceptional academic achievement vs. academic failure). In what ways can the rules and norms that govern exceptional academic achievement be brought into the everyday discourses of higher education?

9.4 Outward Reflections: Tertiary and Quaternary Contradictions

As described in Chapter 2 (see subsection 2.3.4), tertiary and quaternary contradictions pertain to contradictions between activity systems, with the former referring to the introduction of “culturally more advanced form(s)” of activity (Engeström, 1987, p. 103). In subsection 2.3.4, it was hypothesised that the introduction of technology in (higher) education was an example of a tertiary contradiction. It was suggested that technological advancements in higher education had initiated several secondary contradictions within higher education systems, the outcomes of which had undoubtedly initiated significant change and transformation in the way in which the activity of higher education was formulated and practiced. In addition, the section on tertiary contradictions in subsection 2.3.4 also referred to Leontiev’s (1977/2009) notion of learning activity replacing play activity as children transition from pre-schooling to formal schooling. Leontiev’s (1977/2009) notion was provided as a foundational example of the introduction of a culturally more advanced form of learning into an activity system, which inevitably initiated multiple other primary and secondary contradictions within the formal schooling system. Quaternary contradictions were also described in Chapter 2 (see subsection 2.3.4) to occur between activity systems, acknowledging the intersecting role that neighbouring (and multiple) activities and activity systems may have on the central theorised activity (Engeström, 1987). With this in mind, three tertiary and four quaternary contradictions are presented below, functioning to further integrate the activity systems presented in the previous chapters. The

tertiary and quaternary contradictions emanate from relevant historical-contextual factors (identified in Chapter 1), as well as dominant findings from the study (identified across Chapters 4 to 8).

9.4.1 The introduction of culturally more advanced forms of activity: Tertiary contradictions.

I identify and work with three “culturally more advanced” forms of activity in this chapter, and locate these as being introduced into the institutional system that I constructed and analysed in Chapter 8. The first example of a tertiary contradiction refers to the introduction of a new funding framework for South African higher education in 2004, while the second is the current proposal by the CHE for a revised undergraduate curriculum. The third refers to the introduction of isiZulu as a medium of communication, instruction, and scholarship at UKZN together with English. Each of these culturally more advanced forms of activity are positioned around the institutional system (see Figure 9-1 on next page). The zig-zag arrows emanating from the three surrounding forms of activity (captured in the circles) are intended to represent the introduction of a new form of activity and the resultant contradictions that have arisen (and are likely to arise) from the introduction of these activities.

9.4.1.1 A new funding framework.

The cost-effectiveness of South African higher education (and specifically the financial cost of student failure) was referred to in Chapter 1 when the historical-contextual framework for this study was developed. Partly in response to cost-effectiveness concerns, a new funding framework was implemented in South African higher education in 2004 (DOE, 2004). In addition to other sources of funding (e.g., student fees and private income), the framework specified a range of government block grants for higher education institutions, relating to teaching input, teaching output, research output, and institutional factors (DOE, 2004). Although the block grants are interdependent, the new funding framework has placed an emphasis on funding in relation to “equitable student access, quality teaching and research, [and] improved student retention and throughput” (Essack et al., 2009, p. 276). Since its inception, there has been an understandable increase in emphasis on institutional strategies to enhance student success and

throughput (CHE, 2010). In this way, the introduction of the new funding framework could be conceptualised as a more advanced form of cultural activity (a tertiary contradiction) in that it has initiated revisions in the way in which the academic activity of the institutional system has been organised. Since previous institutional funding formulae may have been less related to student success and throughput, the new funding framework has necessitated this.

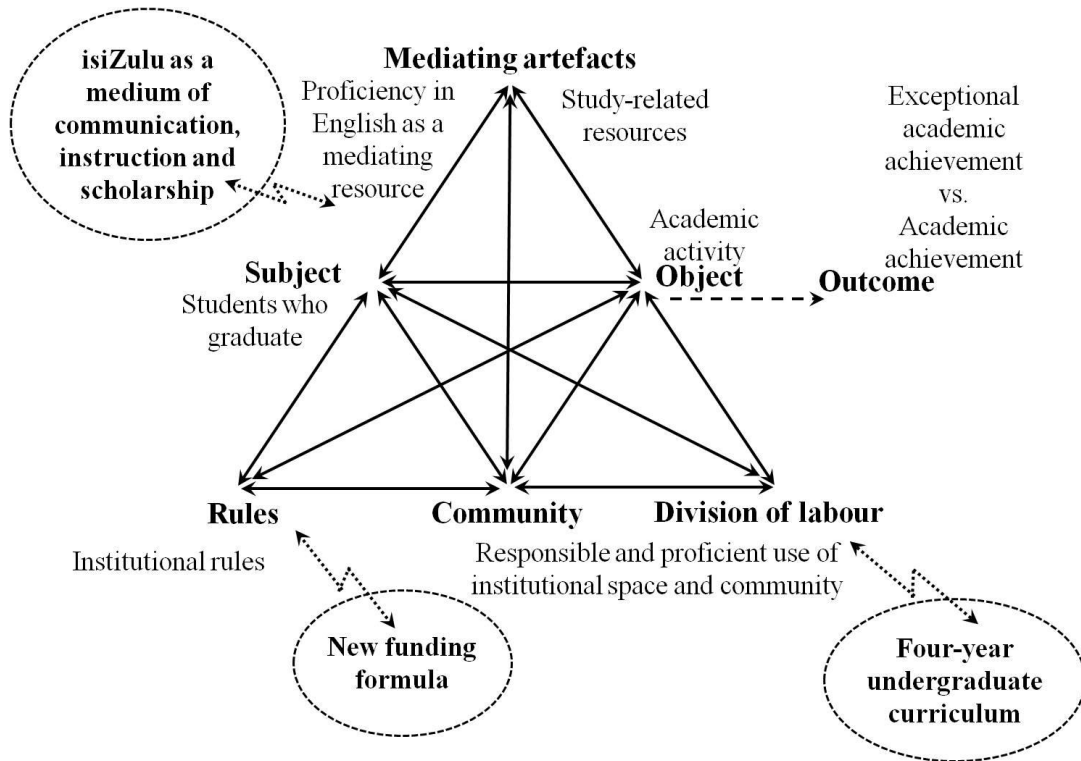


Figure 9-1. Tertiary contradictions

Within the rules component of the institutional system (see Chapter 8, subsection 8.2.3), I explored the role that institutional rules play in the academic activity of the institutional system. Specifically, it was identified that the rules/norms governing exceptional academic achievement in the institutional system could be elevated in an attempt to enhance the outcomes of the system. I suggest that the new funding formula requires the academic activities of the institutional system to be reformulated in ways that would enhance student success and graduation rates. However, I argue that improvements in student success and graduation rates may not necessarily be

associated with improvement in rates of exceptional academic achievement. In fact, some critics may suggest that the push to improve student throughput may come at a cost of quality in academic achievement, and a subsequent focus on mediocrity in performance. The concerns around mediocrity in academic performance and declining academic standards in (South African) higher education are well documented (Strydom, Kuh, & Mentz, 2010). Moreover, these concerns are frequently associated with the increasing diversity and massification of the higher education student population (Letseka & Cosser, 2010). Although there is certainly a current focus on student throughput, quality assurance processes in higher education institutions should make it possible for academic standards (and consequent academic performance) to be maintained, if not enhanced. The new funding formula enables the enhancement of teaching and learning quality in South African higher education institutions, and therefore could also be used to enhance the equity and quantity of exceptional academic achievement.

9.4.1.2 A revised undergraduate curriculum.

As detailed in Chapter 1, South African higher education persists as a “low-participation, high-attrition system” (Fisher & Scott, 2011, p. 1). Although there have been considerable gains in the equity of representation of students accessing higher education over the past two decades, the system is still beset with relatively low throughput and graduation rates (CHE, 2013). A range of multiple interconnecting strategies are more than likely needed to address the sector’s poor performance; however, one of these involves the current proposal for a revised undergraduate curriculum in South African higher education. I position this as the second example of a culturally more advanced form of activity that will possibly be introduced into the institutional system. A recent discussion document by the CHE (2013), *A proposal for the undergraduate curriculum reform in South Africa*, proposes three fundamental changes to the current South African undergraduate curriculum. At present, the majority of South African undergraduate degrees and diplomas have a formal start to completion duration of three years full-time study. The completion of some professional bachelor’s degrees requires four years of full-time study. The first proposed curriculum change involves the inclusion of additional and “new first-year courses” (CHE, 2013, p. 112) to all current undergraduate curricula, with accompanying changes in funding and qualification credits. In effect, this will result in the addition of an extra year of

full-time study to all undergraduate curricula. Rather than the introduction of new content to the curricula, the extra year is proposed to address the articulation gap currently observed between South African secondary and higher education (CHE, 2013).

The second proposed change to South African undergraduate curricula includes the provision of flexibility in order to accommodate the diversity in the student population. This will presumably allow some students who enter higher education to qualify for exemption from some of the new first-year modules, in turn allowing them to complete their undergraduate qualifications within a relatively shorter time period (CHE, 2013). The third proposed change asserts the need for the exit-level standards for the current curricula to be maintained or enhanced. In effect, it is reasoned that more time spent in the undergraduate curriculum could form part of the strategy to improve graduate throughput in South African higher education.

In the institutional system, the introduction of this activity could be positioned as a tertiary contradiction at the components of division of labour and community. It is likely that the introduction of a new curriculum structure into the institutional system would initiate several secondary contradictions, which in turn would have an impact on the academic activity in the system.⁸⁷ In particular, it is likely that the institutional communities will have more time in the curriculum to facilitate enhanced learning outcomes. Although the issue of exceptional academic achievement in the revised undergraduate curriculum is not specifically addressed, it is envisaged that the revisions technically would underpin the development of this. However, the development of discourses around exceptional academic achievement are unlikely to arise without substantial contradiction and tension in current higher education institutional systems.

⁸⁷ In addition to secondary contradictions within the institutional system, the introduction of the new curriculum structure is also likely to initiate contradictions within the general labour market. On the one hand, the new curriculum structure may delay entry into the labour market for young South Africans, which in turn could have a negative impact on socio-economic activity. On the other hand, however, the new curriculum structure could also offer more guarantee than the current curriculum structure that young South Africans would enter the labour market with successfully completed qualifications, and a consolidated skill set. It is possible that the opportunity cost of delayed entry into the labour market outweighs the current cost of the present curriculum structure.

9.4.1.3 isiZulu as a medium of communication, instruction and scholarship.

In Chapter 8 (see subsection 8.2.2.1) proficiency in English was conceptualised as a prominent mediating artefact in the institutional system. Similarly, the findings from Phase 1 of the study (reported in Chapter 4, see section 4.2) identified that increasing scores for matriculation English (along with other intersecting educational and socio-demographic variables) were associated with increased odds of exceptional academic achievement in higher education. In 2006, UKZN's Senate approved a language policy for the institution (UKZN, 2006), which effectively signalled a commitment by UKZN to become a bilingual institution. The policy advocates the development of both isiZulu and English as mediums of communication, instruction, and scholarship. I suggest that this policy (and its introduction) is a third example of a culturally more advanced form of activity that is in the process of being introduced into the institutional system. As with other forms of culturally more advanced activity, the introduction of isiZulu into the academic activity at UKZN is being facilitated by multiple representatives of culture. It is evident that at a national level, the South African constitution recognises the equality of eleven languages in South Africa (Section 6), advocating for the advancement of these languages in public educational institutions (Section 29 [2]) (Republic of South Africa, 1996). Given the large proportion of people living in KwaZulu-Natal who speak isiZulu as a home language,⁸⁸ the introduction of the language as an official language at UKZN is both logical and illustrative of how representatives of culture at national, provincial, and institutional level may attempt to modify the forms of academic activity in an institutional system. The logic of UKZN's 2006 language policy illustrates not only that language systems are understood to mediate learning and achievement, but also that the introduction of a new form of activity (i.e., isiZulu as an academic activity) has the potential to elicit secondary contradictions and subsequent systemic change. The move has been met with some resistance and critique;⁸⁹ however, I argue that the way in which

⁸⁸ As identified in Chapter 8, isiZulu is spoken as a first language by 78% of the KZN population (Statistics South Africa, 2012).

⁸⁹ The critique around the introduction of isiZulu at UKZN escalated in popular media in 2013 upon the announcement that a credit in an isiZulu module will become compulsory for all new UKZN students from 2014. See, for example <http://constitutionallyspeaking.co.za/oh-shucks-theres-a-zulu-in-my-curriculum/>, and <http://slipnet.co.za/view/blog/language-policy-in-south-africa-and-the-unfounded-fears-of-a-zulu-hegemony/>.

the institution responds to these critiques and manages the resultant contradictions has significant potential for change and transformation. If isiZulu is successfully established as a medium of instruction and scholarship at UKZN, it too will become a mediating artefact in the subject–object relationship of academic activity. It would then be relevant to ask how the introduction of an additional language system as mediating artefact would alter the outcomes of the institutional system. If the growing majority of UKZN students speak isiZulu as a first language, and opportunities for learning in isiZulu alongside English are maximised, it is highly likely that this will have an impact on exceptional academic achievement outcomes in the institutional system.

The tertiary contradictions in the institutional system (i.e., a new funding framework, a revised undergraduate curriculum, and isiZulu as a potential mediating artefact) function to illustrate the dynamic nature of activity systems. In particular, the institutional system is open to “external” influences (conceptualised as culturally more advanced forms of activity). Although these influences are likely to elicit contradiction and tension initially, the ways in which they are managed has significant potential to bring about positive change in the quality of the academic activity and academic achievement outcomes of a sector of the system. The next section identifies and considers the potential utility of quaternary contradictions between the three activity systems constructed and analysed for this thesis.

9.4.2 Intersecting activity systems: Quaternary contradictions.

As mentioned above, quaternary contradictions occur between activity systems, acknowledging the intersecting role that neighbouring (and multiple) activities and activity systems may have on the central theorised activity (Engeström, 1987). There are undoubtedly an infinite number of quaternary contradictions between the exceptional academic activities theorised within this thesis; however I restrict my analysis to three. These contradictions are included because of the repetitive or qualitatively significant nature in which they emerged during both the data-driven and theoretically informed analysis processes. The three quaternary contradictions identified and analysed firstly include the embedded nature of (and tension between) the subject of the evolving system and the subject of the institutional system. Secondly, it became apparent that a quaternary contradiction existed between the institutional system and a sub-system of institutional rules

pertaining to financial aid. Thirdly, all three academic activity systems presented in this thesis (namely the evolving, historical, and institutional systems) were also conceptualised in quaternary contradiction to the family systems of the subjects in the academic activity systems.

When bringing the three activity systems into dialogue with each other, it firstly became apparent that the evolving system was a chronological extension of the historical system. In addition, it became apparent that the evolving system could be positioned or embedded within the institutional system. Moreover, the positioning of the evolving system within the institutional system is representative of a quaternary contradiction especially at the level of subject. Whereas the institutional system includes a profile of exceptional academic achievement, the evolving system was comprised of the antithesis to this profile (namely in the form of African students who excel academically). In this way, a contradiction existed between these two activity systems. However, this contradiction should be viewed in light of its potential to contribute to change and transformation in the institutional system. If there is a proportional increase in the number of exceptional African undergraduate students (an emerging evolving system), the system's power and propensity to bring about change within the institutional system could be expanded.

Secondly, the analysis of the activity systems also revealed a quaternary contradiction between the institutional system and a sub-system of activity pertaining to the norms and rules of financial aid. Although there are formalised financial aid rules both nationally and at UKZN (e.g., rules for loan renewal or rules for conversion of a loan to a bursary), some are more accurately described as "norms". For example, it became evident that the rules and norms around financial aid did not necessarily exert sufficient pressure to enable exceptional academic achievement. "If you know that you are using NSFAS, you kind of don't care about studying seriously cos you know that at the end of the day NSFAS is going to pay" (Xolile, FGD 3, 86). Similarly, it was also highlighted that, "Financial aid only require 50%, like if you do four modules you have to pass two, then you know that you are secure. Even next year you will have that financial aid" (Hloniphile, FGD 1, 166). The perception was that the conditions for financial aid loan renewal (which indeed are that students only needs to pass 50% of the modules/credits

for which they are registered⁹⁰) do not encourage students to aim for high academic achievement outcomes.⁹¹

For some students then, financial aid rules for loan-renewal may not provide enough of an incentive to work towards high academic achievement, this presenting as a quaternary contradiction in the institutional system. If the rules for financial aid loan-renewal were made more stringent, this could impact negatively on the number of students from low socio-economic backgrounds progressing through the system. On the other hand, the current academic performance expectations that are placed on students from low socio-economic backgrounds could be seen as perpetuating conflated notions of low socio-economic status and poor academic performance. Interestingly, the requirement that financial aid students only pass 50% of their credits in order to be eligible for loan-renewal falls below the “acceptable performance levels” (UKZN, 2012, p. 3) expected of all UKZN students, as indicated in the institution’s *Academic monitoring and exclusions policy*. In this policy, it is stated that students who have not passed 75% of their maximum expected credits are eligible for academic risk monitoring.⁹² By implication then, every financial aid student who only meets the minimum requirements for financial aid loan renewal will also then be flagged for academic risk monitoring.

“Also, financial aid is also not quite vocal with the benefits of doing well, cos you don’t get to pay back what you owe to them. But they are hardly vocal” (Khulekani, FGD 1, 181). Although

⁹⁰ The 50% pass rate requirement for returning students to be eligible for continued funding has been part of the UKZN financial aid policy for many years. However, this policy is under revision, and revised eligibility criteria for funding continuation are due for release in 2014 (M. Davids, personal communication, 15 July 2013).

⁹¹ In contrast, some participants asserted that being a NSFAS-funded student should compel a student to “perform well” (Sifiso, FGD 2, 66). Another of the participants explained that when he did not receive NSFAS funding in the first semester of his first year, he “failed dismally as there was no way to support [him]self ... And then in second semester they tried by all means to give me a residence and financial aid, and from there I just ... I done very well” (Mfundo, FGD 3, 132).

⁹² In addition to not passing 75% of the maximum expected credit load, students need to have passed less than 70% of the normal credit load in the current semester.

the rules governing the conversion of a financial aid loan to a bursary are available,⁹³ the point was raised during the data production process that these rules could be made more explicit. It is therefore questioned whether making financial aid rules for the conversion of a loan to a bursary as explicit as those pertaining to the failure for the loan to be renewed would vary the outcome of the institutional system.

In addition to the financial aid rules pertaining to loan renewal and loan conversion, a norm of ineffective administration within the financial aid system is relevant to reiterate as it adds to the complexity of the quaternary contradiction. Specifically, delays in processing financial aid meal and textbook allowances were raised by the research participants as norms which could impact on the ways in which financial aid students are able to participate in the institutional system.

Cos NSFAS sometimes it pays late and some of them they are always stressing. Even in the middle of the year, they're stressing where will they get money to buy this, when will get money for food and everything? So they can't focus very well on their studies but they are focusing on how to get money. So "Where am I going to eat next week? What am I going to do? Should I call my parents or what?" That's just the reason. (Johnson, FGD 3, 111)

Thirdly, the analysis of the academic activity systems also revealed a quaternary contradiction between all three activity systems, and the variety of student family systems. McCaslin and Hickey (2001) emphasise the necessity of "understanding the interpersonal influences of home and school [in relation to] a student's specific intrapersonal approach and response in a learning situation" (p. 234). This position is resonant with Engeström's (2009a) argument that the analysis of an activity system should involve the analysis of networks within multiple activity systems.

The intergenerational family influences (i.e., family systems) on a student's academic activity across the historical, evolving, and institutional systems are highly relevant to consider. The set of family influences that became manifest around the three systems were undoubtedly consistent

⁹³ To be eligible for a NSFAS loan to be converted to a bursary at UKZN, a student needs to have passed all their modules with an average of 65% and above (<http://studentfunding.ukzn.ac.za/Applicationprocedure.aspx>).

with Bourdieu's (1986) construct of cultural capital. Although various authors have emphasised different aspects and interpretations of cultural capital over the years (Lareau & Weininger, 2003), the central importance of the notion pertains to recognising the implicit attitudes, skills, and behaviours that familial and sociocultural contexts may impart on individuals. Given that these attitudes, skills, and behaviours are located within the family and sociocultural environment, they are likely to be intense, affect-laden, and reinforced (and therefore internalised) over many years for students. It is in this way that family systems introduce a quaternary contradiction into all three activity systems constructed and analysed in the previous chapters.

If a white guy (.) he knows that his father is the director of a company, he can't be failing at school. You know, that's not the trend in the family. (Sindi, FGD 1, 377)

Familial career trends are likely to inform career choices, as well as the academic activities directed towards attaining those careers. Where these familial career trends are related to high academic outcomes, this is also likely to be suggestive of familial histories of attitude, skill, and behaviour reinforcement that enable high academic achievement in subsequent generations. Sikhumbuso highlighted this when he says

With the white students, probably even with the way they were raised. Maybe there are certain things, skills they get from their educated parents? Maybe how to deal with certain things that we don't get from our [African] parents? (Sikhumbuso FGD 2, 146)

Where these attitudes, skills, and behaviours of family systems coincide with the dominant institutional system and corresponding pedagogic actions, there is an increased likelihood for positive academic outcomes. Although these systems do not necessarily contradict the activity of the institutional system (but rather reinforce it and facilitate its outcomes), the systems are still identifiable as a quaternary contradiction in that they intersect with the institutional system.

The students' families represent elements of the community and division of labour in activity systems external to the institutional system. Implicit in the statements about white students' families offering advice and support is that labour in the family systems of white students is

more likely to coincide with the labour of institutional communities in the institutional system. The extent of the division of this labour is not known, and may be completely overestimated in certain instances. However, this does imply that the labour demands for African students in the institutional system (and other students who may not have access to cultural and economic capital) are heavily weighted upon them as individuals.

Black people, most of us we are born as solutions to our families. We are trying to fight poverty by all means [and] that is why we come and engage in bigger degrees like engineering cos that it where there is a lot of money. (Maipfi, FGD 3, 158)

The intense and multi-generational pressure placed on some students in higher education (i.e., “to serve as solutions to [their] families’ ... poverty”) is striking. “[E]ven if you call at home, they don’t understand what you are talking about; this academic thing of yours. Our parents are not educated” (Nqobile, FGD 2, 155). Importantly, the generalisation that African students do not have family support and are under intense pressure to solve their families socio-economic circumstances was challenged in the evolving and historical activity systems. At a collective institutional level, however, conceptions of support that facilitate exceptional academic achievement appear to be dependent on “insider” systems and knowledge. In contrast to this, I suggest that “outsider” systems and knowledge can also generate exceptional academic achievement outcomes. This notion is developed further in the final chapter.

9.5 Concluding Remarks

Contemporary theoretical and empirical concerns within a sociocultural and activity theory tradition gravitate towards notions of contradiction, tension, and collective emotion (Darwin, 2011; Holodynski & Seeger, 2013; McCaslin, 2009). Consistent with these concerns, Chapter 9 has firstly explored the collective emotions associated with each academic activity system constructed and analysed in the current study, and secondly presented an inward and outward reflection of contradictions and tensions within and across the activity systems. In this way, Chapter 9 has gone beyond the construction and analysis of academic activity systems that may explain exceptional academic achievement in contemporary and future South African higher education, and presented an intra- and intersystemic conceptualisation of the phenomenon under

investigation in this study. In particular the intra- and intersystemic conceptualisation has pointed to the potential constructive and transformative value associated with contradictions and tensions, and collective emotions in the trajectory of exceptional academic achievement in South African higher education. The final chapter of this thesis presents a synthesised and socio-political object of exceptional academic achievement in higher education.

Chapter 10. Reorientation: Towards a Socio-Political Object of Exceptional Academic Achievement

The properties of groups of minds in interactions with each other, or the properties of the interaction between individuals' minds and artifacts in the world, are frequently at the heart of intelligent human performance. (Hutchins, 1993, p. 62)

10.1 Introduction and Overview of Chapter

The preceding chapters have documented the contextual, conceptual, methodological, analytical, and inferential processes that were engaged in to explore the phenomenon of exceptional academic achievement in South African higher education. From firstly exploring the dominant quantitative and social cognitive perspectives for representing and explaining the phenomenon, a sociocultural and activity theory framework was then offered as a suitable lens through which the study could be approached. This necessitated a dialectical stance, which in turn lent itself to a mixed methods approach. The findings, analyses, and interpretations from the two phases of the study were presented in Chapters 4 to 8. Congruent with a dialectical stance and a fully mixed methodology, findings, analyses, and interpretations across both quantitative and qualitative modes were drawn upon and presented interchangeably. Chapter 9 presented a final analysis and discussion, this functioning to integrate the three activity systems constructed and analysed for the thesis. Chapter 9 also brought to the fore contemporary concerns within sociocultural and activity theory frameworks.

I turn now to a final reorientation, this involving the proposal of a socio-political object of exceptional academic achievement in higher education. The proposed object is focused at national level and constitutes the main section of this chapter; however, it is preceded by some key principles of theorising from a dialectical stance. These principles informed the proposed socio-political object.

10.2 Theorising from a Dialectical Stance

Throughout this study and resultant thesis, I have attempted to draw on a dialectical stance. This stance was informed by a sociocultural framework and activity theory, these in turn being informed by the philosophies of Hegel, Marx, and Engels (Langemeyer & Roth, 2006). A dialectical stance permeated the contextual and conceptual frameworks presented in Chapters 1 and 2, as well as the methodology (in Chapter 3). Within the methodology for example, the research questions, data production, data analysis, and interpretation activities were all purposively mixed to enhance the dialectical reasoning and inference processes engaged in during the study.

The starting point for a dialectically informed inquiry and resultant socio-political object in this thesis was Hegel's rejection of the subject-object distinction (Hegel, 1977). The subject and object are mutually constitutive, this mutual constitution resulting in the formation of a new unit (Langemeyer & Roth, 2006). In fact, referring to either subject or object is in itself a non-dialectical act, as it is the link between the subject and object (i.e., the resultant unit of activity) that is of primary importance. Moreover, as identified in Chapter 2 (subsection 2.3.2), contemporary approaches to cultural-historical activity theory distinguish (and at the same time fuse) two notions of *object*. Whereas the notion of an object of activity is primarily thought- and motive-oriented (i.e., what is the motive of collective activity?), the subject-object distinction elicits an understanding of *Objekt* that is primarily in reference to a concrete, "problem space"⁹⁴ that can be acted upon and within (Kaptelinin, 2005; Roth, 2013). Therefore, although various forms of subjects and objects were referred to in the preceding chapters, the context within which these were referred to would have determined whether the relevant object pertained to the motive of collective activity, a problem space within which the subject acted, or a dialectical combination of the two. In this study, the subject was mostly conceptualised as the higher education student, and academic activity was conceptualised as the link between the subject and object (i.e., a collective motive, as well as a problem space where activity ensues). Therefore,

⁹⁴ As identified in Chapters 3 and 7, an object can be characterised as "the 'raw material' or 'problem space' at which the activity is directed and which is molded [*sic*] and transformed into outcomes" (Centre for Activity Theory and Developmental Work Research, n.d.).

this was not only a study about exceptional academic achievers (i.e., subject) or exceptional academic achievement (i.e., object and outcome), but this was also a study about the connecting processes of (exceptional) academic activity that integrated and provided a motive for subject and object in the higher education context. The final contribution of this thesis therefore proposes a socio-political object of exceptional academic achievement, this involving both a collective motive and a potential problem space within which this motive could be enacted.

An important dialectical thread that has run through this thesis (and which informed the socio-political object in this chapter) has been the continuous attempt to integrate and contradict individual and collective constructs concurrently. At times I have emphasised individual processes of academic activity (especially in Chapter 5); however, I have predominantly worked towards an individual–collective dialectic when conceptualising academic activity and exceptional academic achievement. For example, the construction and analysis of multiple intersecting activity systems (in Chapters 6, 7, and 8) facilitated this, and enabled a perspective of the individual *in* society, rather than dualistic representations of individual *and* society. Moreover, the notion of contradiction⁹⁵ was identified as central to activity theory, as well as the construction, analysis and interpretation of the object of the activity systems. Just as dialectical thought processes involve contradiction, which in turn facilitate movement to a new stance, the contradictions within the various activity systems were also conceptualised to enable change and movement (i.e., transformation) to a new position or potential problem space in higher education.

It is also relevant to highlight the transformative potential of contradiction and tension in relation to the process of dialectical thinking. I argue that theorising from a dialectical stance enabled a transformative conceptualisation of the phenomenon under inquiry. In this thesis, dialectical theorising was applied for the purpose of socio-political critique with an intended transformative outcome in the material world. Specifically, the dominant profile of exceptional academic

⁹⁵ In Chapter 2 (subsection 2.3.4), the notion of contradiction was emphasised from an activity theory perspective. In particular, contradictions and tensions in activity systems were conceptualised as “the driving force for change and development” (Engeström, 2001, p. 135). In addition, it was suggested that contradictions could generate collective emotions, which in turn would have the potential to generate motion, and subsequent change and transformation.

achievement in South African higher education was found to be persistently inequitable and unjust. In addition, it was suggested that, among other factors, higher education systems perpetuate this inequity and injustice. In this way, the socio-political object of exceptional academic achievement was purposively change- and transformation-oriented.

Finally, the formation of an idea from a dialectical stance was also perceived as the outcome of the synthesis between two contradictory ideas. This outcome is more than the collation of the two contradictory ideas, but rather the development of a new idea as a result of the two original contradictory ideas (Hegel, 1910). Importantly, dialectical thinking is a continuous and circular process, where a synthesised idea is likely to, in time, face an anti(syn)thetical idea. In developing the contextual and conceptual frameworks for this thesis, I firstly suggested that quantitative approaches to representing (exceptional) academic achievement (see Chapter 1, subsection 1.2.2, and Chapter 4, subsection 4.2.4) generated the position that academic achievement is dependent on membership to certain sociocultural and socio-demographic groups (a thesis). Secondly, I identified that social cognitive approaches (see Chapter 2, subsection 2.2.1, and Chapter 5, sections 5.2, 5.3, 5.4, and 5.5) offered an antithesis to this thesis, namely that individual students (through SRL for example), regardless of their group membership, could regulate their way to exceptionality. Thirdly, I positioned a sociocultural approach to representing exceptional academic achievement in higher education (see Chapter 2, section 2.3, and the evolving, historical, and institutional systems presented in Chapters 6, 7, and 8) as a possible synthesis of these two positions. With the sociocultural approach, static constructs of race, gender, socio-economic disadvantage in relation to exceptional academic achievement were disrupted, and purely individualistic paths for exceptional academic achievement were questioned. It is this style of dialectical thinking that has been used increasingly in Chapters 6, 7, 8, and 9.

In summary, the process of theorising dialectically for the purposes of this thesis involved maintaining the subject–object unity of activity, synthesising contradiction, working with a non-dualistic conception of individual and collective constructs (yet retaining the inherent contradiction), and exploring opportunities for social critique, and change and transformation in

the material world with specific applications to academic achievement in undergraduate higher education.

10.3 Towards a Socio-Political Object of Exceptional Academic Achievement

There is no doubt that multiple forms of human existence and activity (including higher education) are unjust and that they limit opportunities for many, and result in unequal outcomes. Although access to, academic achievement within, and graduation from higher education are becoming increasingly equitable (CHE, 2013), this does not appear to be the case for academic achievement at exceptional levels. It is for this reason that I proposed a socio-political object of exceptional academic achievement. A socio-political object of exceptional academic achievement is both a potential problem space and a collective motive. The potential problem space is reflected as the area within the outer oval shape in Figure 10-1, and serves as a material site and an ideal site where exceptional academic activity intersects with contemporary and historical socio-political dynamics. In addition to being a potential problem space, a socio-political object of exceptional academic achievement can also be understood as the collective object (or motive) of academic activity at a social and national level. Although the potential problem space and motive components of the socio-political object are discussed separately below, they are necessarily unified.

The starting point for the proposed socio-political object of exceptional academic achievement in this chapter is the space within which current exceptional academic achievement in South African higher education is located. This space is a definitive “problem” space in that it is exponentially weighted against African students, even when potentially confounding variables (such as previous school performance, English language proficiency, and socio-economic status) are controlled for. The injustice of this reality was reflected in Phase 1 of this study (see Chapter 4, subsection 4.2), and articulated within the institutional system of academic activity (presented in Chapter 8). Point 1 in Figure 10-1 reflects the institutional activity system as the starting point (and core of the space) of the proposed socio-political object of exceptional academic achievement. In addition, Point 1 in Figure 10-1 represents the academic activity engaged in by university students who graduate. From an activity theory perspective, this activity is comprised

of object, subject, and outcome. In addition, student academic activity is necessarily mediated by artefacts, rules, the community, and a division of labour. In response to the injustice of the reality reflected in the institutional system, a dynamic and iterative trajectory (see dotted line starting from Point 1 and ending with Point 5 in Figure 10-1), is theorised within the socio-political object of exceptional academic achievement. The trajectory is perceived to be both constitutive of and embedded within the socio-political object, thereby suggesting an object that is dynamic across time and space as well as individual and collective domains.

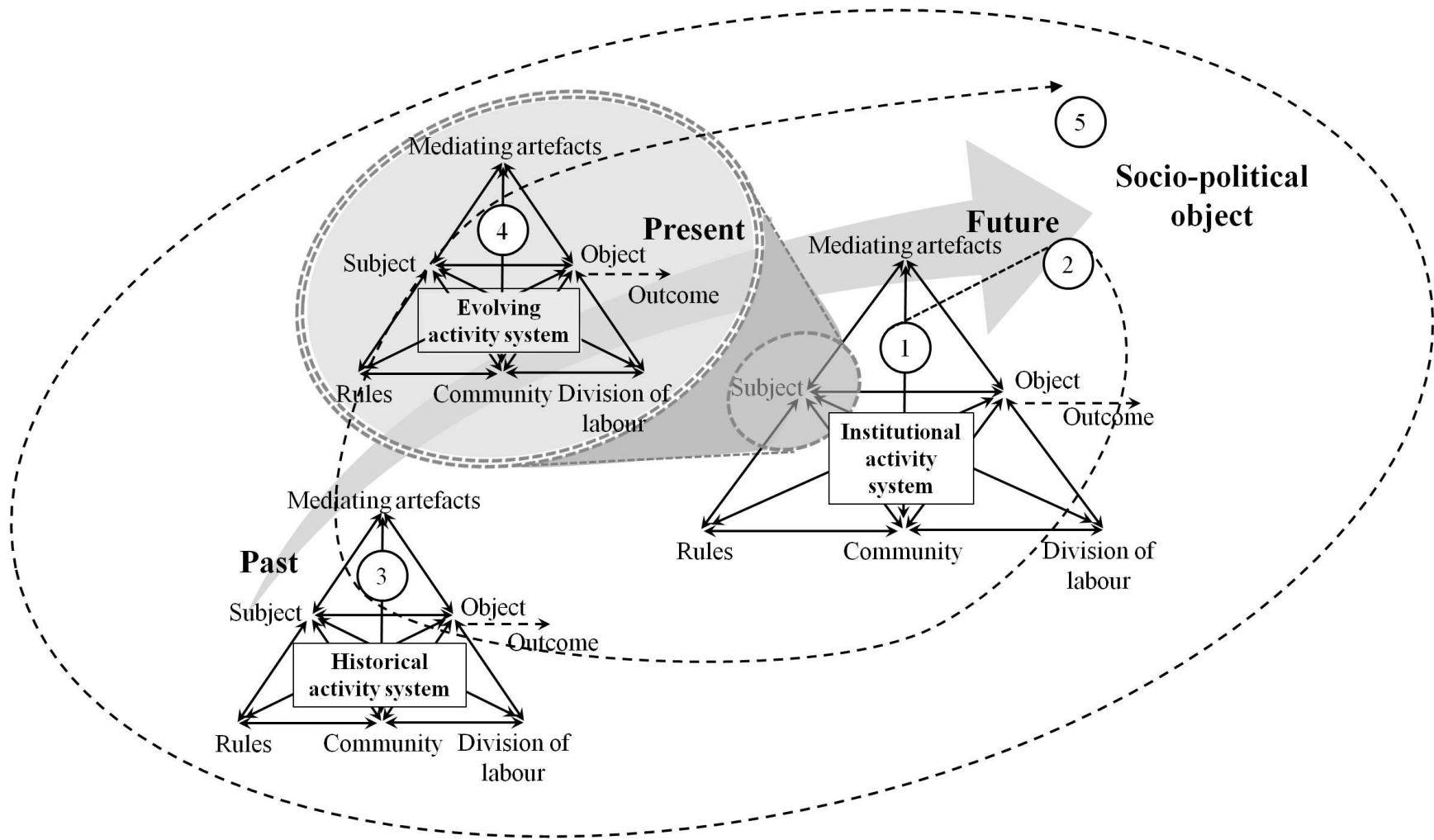


Figure 10-1. A socio-political object of exceptional academic achievement

In Figure 10-1, the iterative trajectory first depicts movement from Point 1 towards the future (Point 2), and then back through the institutional system (between Points 2 and 3). A reflection on the past is symbolised at Point 3, while currently evolving practices of exceptional academic achievement are gathered at Point 4. Importantly, the evolving system (Point 4) is embedded within the institutional system (Point 1), exemplifying the iterative nature of the trajectory. In addition, the embeddedness of the evolving system within the institutional system is signified through the former's positioning within the cone-like structure in Figure 10-1, which emanates from the subject component of the institutional system. The iterative trajectory within the socio-political object of exceptional academic achievement is then projected towards Point 5, reiterating an overarching future path. Below, I argue that it is the very contradictions, collective emotions, emotional reflections, and emotional regulations that exist within and between multiple intersecting activity systems that function to bring the aforementioned trajectory into effect. Specifically, four constructs further define and constitute the nature, and regulate the activity of the socio-political object. These include an injustice-based anger, a historical edu-emotional struggle (as described in Chapter 9, subsection 9.2.1), the development of *flexible capital*, and the development of a positive edu-emotional valence (as described in Chapter 9, subsection 9.2.1). Overall, the potential space is characterised as being fragile and homologous in the sense that it is perceived to generate both exceptional academic outcomes and academic underachievement.

In Chapter 9 (see subsection 9.2.1), it was identified that a residual emotion of anger was reflected in the injustice associated with the institutional system. Given that this thesis has developed the notion that emotions both reflect and regulate systems, the emotion of anger was perceived as a regulating force within the potential space of the socio-political object of exceptional academic achievement. In the qualitative phase of the study, I purposively sampled high achieving African students who, according to the logistic regression model of exceptional academic achievement (and institutional system), were unlikely to be academically exceptional (see Chapter 4, subsection 4.2.4). The data produced by the participants facilitated the construction and analysis of two additional activity systems of exceptional academic achievement (i.e., the evolving system presented in Chapter 6, and the historical system

presented in Chapter 7). In Figure 10-1, these systems are integrated within the socio-political object of exceptional academic achievement as Points 3 and 4. Both systems enabled a conceptualisation of how exceptional academic achievement could be attained by African students in contemporary South African higher education. As these students were also part of the institutional activity system, the evolving system is technically embedded within the institutional system as “subject” (see cone-like structure in Figure 10-1), while the historical system is related to the evolving system both spatially and through time. Although identifiable as subjects within the socio-political object of exceptional academic achievement, exceptional African students also have inherent status as objects of a particular academic and socio-political activity and purpose. I turn now to consider how the iterative trajectory through the historical and evolving systems in Figure 10-1 (Points 3 and 4) may draw on pertinent activities, emotions, and processes within the potential space associated with a socio-political object of exceptional academic achievement.

Common notions pertaining to cultural capital seem to present the educational, familial, and cultural histories of African students as being a compromising factor in their future academic achievement in higher education (Bourdieu, 1986; Lareau & Weininger, 2003). Although I am not challenging efforts that aim to remediate historical and persistent systems of injustice, it is interesting to note how exceptional academic achievement appeared to arise not only in spite of, but because of injustice and struggle. Sometimes, the very environments that constrain academic achievement also seem to facilitate exceptional academic achievement. The individual descriptions presented in Chapter 5 (see sections 5.2, 5.3, 5.4, and 5.5), and the evolving and historical systems presented in Chapters 5 and 6 provided empirical support for this. As described in Chapter 9 (see subsection 9.2.1), the historical system in particular is imbued with significant challenge, and is reflective of an edu-emotional struggle. Although the system is associated with struggle, loss, and displacement, it is also associated with the development of notable resilience and adaptability. This development is sometimes enabled by significant community members who facilitate an edu-emotional struggle that regulates activity adaptively. I argue that if this edu-emotional struggle becomes internalised as a form of flexible capital, it will have adaptive and highly functional applicability in subsequent higher education endeavours. I characterise flexible capital as a special form of cultural capital that does not necessarily emanate

from the dominant culture, but rather from *outside*. “Flexible capital” refers to adaptability and malleability, arising from experiences of struggle and compromise. It is in this way that the environments that sometimes constrain academic achievement in South African higher education (e.g., educational disadvantage, socio-economic struggle, and personal and emotional strain and struggle) are the same environments that in some instances enable exceptional academic achievement. In light of this, I suggest that the space associated with the socio-political object of exceptional academic achievement is fragile and homologous. It is fragile in the sense that the prospect of exceptional academic achievement may frequently be *lost* (to academic underachievement) in the educational space. The space is however also homologous because it has the potential to produce both exceptional academic achievement and academic underachievement. The challenge remains as to how to differentiate that which enables and that which constrains in the fragile and homologous space, and emphasise the former over the latter. It is the projected path between Point 3 and Point 4 in Figure 10-1 that signals one possible way by which exceptional academic achievement can arise over academic underachievement.

Movement from Point 3 to Point 4 in Figure 10-1 is accompanied by a corresponding shift in the dominant emotion reflected in and regulatory of the respective systems denoted at these two points. If the edu-emotional struggle reflected in the historical system (Point 3) is resolved in the sense that it contributes to the development of flexible capital, an important emotional resolution could be enabled. However, if the edu-emotional struggle is not resolved, the emotional residue of anger from the institutional system (Point 1 in Figure 10-1) is likely to inhibit the movement from the historical system to the evolving system (Point 3 to Point 4), and thereby have an adverse effect on academic outcomes. Where there is an emotional resolution, a positive edu-emotional valence is possible, which becomes reflected in and regulatory of the evolving activity system (Point 4). Indeed, a positive edu-emotional valence is grounded in struggle, however it is also directed by a prospective orientation, a vision for exceptional academic achievement, and the opportunity to struggle towards these future-oriented ideals. It is the grounding struggle, opportunity, prospective orientation, and vision for the future that exemplify the socio-political object (and space) of exceptional academic achievement presented in this thesis.

Having proposed the dynamic nature of the potential space associated with the socio-political object of exceptional academic achievement in South African higher education, I now isolate the collective motive (object) of this activity. Specifically, three collective motives for a socio-politically object-oriented activity of exceptional academic achievement are advanced. Firstly, I argue that equality of educational opportunity (e.g., access) is meaningless without equal opportunity for learning that facilitates equitable educational outcomes (even at exceptional level). Although this perspective resonates with Coleman's (1967) multi-faceted conceptualisation of equality of educational opportunity (published almost 50 years ago), the perspective appears to be far from realised in contemporary South African higher education. The collective motive or socio-political object of exceptional academic achievement is therefore aligned with a national higher education imperative of parity between equity of input (access) and output (even within the domain of exceptional academic achievement) (CHE, 2013; DOHET, 2012)

Secondly, the aforementioned socio-political object is advanced as a collective motive because exceptional academic achievement (like any other human outcome and activity involved in attaining these outcomes) is paradoxically problematic if conceived of as being the preserve of an elite few. Leontiev (1978) aptly captures this problematic when he describes the interaction between individual actions, collective activity, outcomes, and emotion.

It may happen, for example, that this [an unpleasant emotional residue] is his [*sic*] negative reaction to somebody's success in achieving a common goal solely because it seemed to him to be his alone; and here it seems that this was not exactly so, and that really the principal motive for him was achieving the success for himself (p. 125).

From an activity theory perspective therefore, individual goals and aspirations exist, however, these only exist within and because of a larger collective motive and object. When individuals fail to internalise this, and continue to position their individual goals and aspirations above the collective object, there will always remain an "unpleasant emotional residue" (Leontiev, 1978, p. 125). Persistent norms and systems that facilitate exceptional academic achievement in higher education for individual students will continue to entrench injustice, and an emotional residue of

anger. Although exceptional academic achievement is inherently elite and referential to those who achieve beyond how others do, it should in principle not be the preserve of an elite, but equally possible for all.

Thirdly, the aforementioned socio-political object is proposed because it facilitates a critique of higher education processes and outcomes from a stance that synthesises exceptionality, equity, and equality. In this way, the object facilitates a movement away from deficit discourses that may conflate notions of disadvantage, race, socio-economic status, and language with poor academic achievement.

From a utilitarian viewpoint, the socio-political object of exceptional academic achievement theorised above could be perceived as an attempt to “squeeze more” out of a developing labour force for the purpose of capitalist outcomes. If there are more academically exceptional students who also are more equitably representative of South African demographics, it is likely that there will be more opportunity for income-generating intellectual and labour market activity. Indeed, a part of the agenda of this socio-political object presented in this thesis is about economic development, and the global positioning of African higher education. However, the agenda is also necessarily about a move towards equity, and the relationship between exceptional academic achievement and equity. As identified earlier, exceptional academic achievement is meaningless without equity, and problematic if constituted by a system that entrenches injustice. Therefore, an outcome of the socio-political object for exceptional academic achievement may indeed yield “more” from a developing workforce. However, I argue that this may be justifiable if this “more” is collectively meaningful, systematically just, and transformative of current higher education outcomes.

Future research directions in the domain of exceptional academic achievement in higher education would benefit from an exploration of individual, social, institutional, and national barriers to the socio-political object presented in this chapter. In particular, barriers to exceptional academic achievement could be viewed through a sociocultural lens as potential sites of struggle and negotiation (McCaslin, 2009), and approached as opportunities for change and transformation. In addition, further regression and predictive models of exceptional academic

achievement could be developed, while tracer studies of graduates who excelled in higher education could explore the trajectory of exceptional academic achievement *into* society and the workplace. Moreover, the reasons behind the relative increased odds of exceptional academic achievement for white female students in South African higher education could be of value to identify and explore. In particular, the reasons underlying the differential rates of race/gender empowerment in terms of academic achievement in higher education would be of interest to isolate.

10.4 Concluding Remarks

Chapter 10 has presented a final argument on the phenomenon of exceptional academic achievement in South African higher education. After delineating the ways in which dialectical theorising has taken place in this thesis, I proposed a socio-political object of exceptional academic achievement. This object referred both to the potential space within which contemporary socio-political dynamics could be enacted, as well as to a collective and national motive or purpose of exceptional academic achievement in higher education. Although the socio-political object of exceptional academic achievement may be perceived as paradoxical (in the sense that if all students were academically exceptional, exceptionality would not exist), the object is a collective motive in three ways. In addition to critiquing the current status quo in higher education, the object advocates for equity in higher education access and outcomes domains, and highlights the emotional residue associated with persistent elitism in the domain of exceptional academic achievement. A conceptual and graphic representation of the socio-political object (see Figure 10-1) depicted this object as being constituted by an iterative trajectory through historical and evolving systems of exceptional academic achievement. In addition, the object was identified as being regulated by an emotional resolution within a fragile and homologous space that unifies enabling and constraining academic achievement environments.

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Appendices

Appendix 1: Turnitin Originality Report

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Appendix 2: Gatekeeper's Permission



4 October 2011

Mr N Munro
Counselling Psychologist
Student Counselling and Careers Centre
University of KwaZulu-Natal
Pietermaritzburg Campus

Dear Mr Munro,

RE: PERMISSION TO CONDUCT RESEARCH

Gatekeeper's permission is hereby granted for you to conduct research at the University of KwaZulu-Natal towards your PhD qualification, provided Ethical clearance has been obtained via the Research Office. It is noted the title of your dissertation is:

- 1) Exceptional academic achievement in undergraduate South African higher education.


Please note that the data collected must be treated with confidentiality and anonymity.

Yours sincerely,



Prof J Meyerowitz
Registrar

Office of the Registrar
Postal Address: Private Bag X54001, Durban 4000, South Africa
Telephone: +27 (0) 31 260 8005/2206 Facsimile: +27 (0) 31 260 7824/2204 Email: registrar@ukzn.ac.za Website: www.ukzn.ac.za

 1910 - 2010 
100 YEARS OF ACADEMIC EXCELLENCE

Appendix 3: Ethical Approval



Research Office (Govan Mbeki Centre)
Private Bag x54001
DURBAN, 4000
Tel No: +27 31 260 3587
Fax No: +27 31 260 4609
Ximbap@ukzn.ac.za

25 November 2011

Mr N Munro (931316183)
School of Education and Development

Dear Mr Munro

PROTOCOL REFERENCE NUMBER: HSS/1247/011D
PROJECT TITLE: Exceptional academic achievement in South African undergraduate higher education

EXPEDITED APPROVAL

I wish to inform you that your application has been granted Full Approval through an expedited review process:

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number. PLEASE NOTE: Research data should be securely stored in the school/department for a period of 5 years.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

Professor Steven Collings (Chair)
Humanities & Social Sciences Research Ethics Committee

cc Supervisor – Professor Renuka Vithal
cc Mrs S Naicker/Mr N Memela

17 December 2013

Mr N Munro
PO Box 101040
Scottsville
PMB
3209

Dear Mr Munro


CHANGE OF TITLE: DOCTOR OF PHILOSOPHY

The chair of School Research & Higher Degrees Committee (SRHDC) executively resolved to approve change of title for your Doctor of Philosophy Thesis.

Current Title: Exceptional academic achievement in South African undergraduate Higher Education

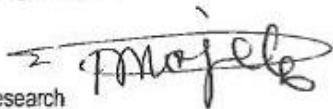
New Title: Exceptional academic achievement in South African Higher education.

Regards



Botso Bhengu-Mnguni
Academic Administrative Officer
Research & Higher Degrees office

Cc: Dr P Morojele
Academic Leader Research



Cc: Professor Vithal
Supervisor

School of Education

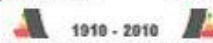
Telephone: +27 (0) 31 260 3663

Postal Address: Private Bag X03, Ashwood, 3605, South Africa





Facsimile: +27 (0)31 260 3600

Email: education@ukzn.ac.za

Website: www.ukzn.ac.za



1910 - 2010
100 YEARS OF ACADEMIC EXCELLENCE

Founding Campuses:  Edgewood  Howard College  Medical School  Pietermaritzburg  Westville

Appendix 4: Calculation of Matriculation Score

The National Senior Certificate (NSC) replaced the Senior Certificate Examination (SCE) as the South African Grade 12/matriculation/school-leaving examinations in 2008 (Nel & Kistner, 2009). This replacement resulted in a change in the way in which the matriculation score was calculated. In this study, all students in the quantitative sample wrote the Senior Certificate Examination (i.e., matriculated prior to 2008). Table 10-1 and Table 10-2 detail the way in which the matriculation score is calculated for students who completed the Senior Certificate Examinations, and complete the National Senior Certificate examinations (<http://www.cao.ac.za/Programmes.aspx?content=Programmes>).

Table 10-1
Point Allocations for Achievement in Subjects within Senior Certificate Examinations (Prior to 2008)

	Symbol (mark range)					
	A (80-100%)	B (70-79%)	C (60-69%)	D (50-59%)	E (40-49%)	F (30-39%)
Points for higher grade subjects	8	7	6	5	4	3
Points for standard grade subjects	6	5	4	3	2	1

Table 10-2
Point Allocations for Achievement in Subjects within National Senior Certificate Examinations (from 2008 onwards)

	Mark range							
	90-100%	80-89%	70-79%	60-69%	50-59%	40-49%	30-39%	0-29%
Level of achievement	7	7	6	5	4	3	2	1
Points	7	7	6	5	4	3	2	1

Appendix 5: Invitation to Attend Focus Group Discussion

(Date)

Dear (name)

Re: Invitation to attend a discussion on exceptional academic achievement at the University of KwaZulu-Natal

My name is Nicholas Munro, and I am registered for a PhD in Higher Education at the University of KwaZulu-Natal. I am conducting a study on exceptional academic achievement in higher education, and would like to invite you to attend a discussion. I am contacting you because your academic achievement at UKZN thus far has been exceptional, and as such I would be interested to hear your views on this topic.

In the discussion I will:

- present the findings from an analysis of data on exceptional academic achievement at UKZN between the years 2006 and 2010;
- explore some ways for you to maintain your level of academic achievement through to graduation;
- ask you to share your experiences of and strategies for high academic achievement, and
- invite you to participate in my study.

The discussion will take place on (date) in the (venue) between (time).

Please let me know if you are interested to attend this discussion by emailing me on munron@ukzn.ac.za.

Refreshments will be served.

Sincerely,



Nicholas Munro

Tel: 033 260 5835, 074 897 2852, Email: munron@ukzn.ac.za

Appendix 6: Semi-structured Focus Group Discussion Guide

First focus group discussions: Programme/discussion guide

Time/day: Saturday morning or weekday evening

Time	Activity	Details
08:30–08:45 or <i>17:00–17:15</i>	Arrive and welcome	<ul style="list-style-type: none"> • Participants arrive • Register • Facilitator and participants introduction
08:45–09:15 or <i>17:15–17:45</i>	Introduction to PhD study and consent	<ul style="list-style-type: none"> • Facilitator explains study • Go through consent form • Seek informed consent and/or dissent • Seek consent to audio record discussion
09:15–09:30 or <i>17:45–18:00</i>	Feedback on Phase 1 results	<ul style="list-style-type: none"> • Facilitator explains the study of UKZN graduation data (2006–2010), and displays results, and • Encourages questions, comments and discussion on Phase 1 results
09:30–09:45 or <i>18:00–18:15</i>	Tea/supper break	
09:45–10:15 or <i>18:15–18:45</i>	Attaining and maintaining exceptional academic achievement	<ul style="list-style-type: none"> • Facilitator presents major findings from recent literature and research on the attainment and maintenance of (exceptional) academic achievement in higher education • Facilitator encourages participants to share their own experiences of attaining exceptional academic achievement to the group • Facilitator encourages participants to share their own thoughts about maintaining levels of exceptional academic achievement in 2012
10:15–10:30 or <i>18:45–19:00</i>	Close	<ul style="list-style-type: none"> • Open question time • Facilitator invites participants interested in further participating in the study to leave their names

Appendix 7: Informed Consent

Dear (name)

Re: Consent to participate in study on exceptional academic achievement in higher education

My name is Nicholas Munro, and I am registered for a PhD in the School of Education at the University of KwaZulu-Natal (UKZN). I am conducting a study on exceptional academic achievement in South African higher education. The study aims to profile academically exceptional students at UKZN, as well as understand how and why these students attain academically exceptional results.

You have attained exceptional academic results so far in your degree, and could be on track to graduate *cum laude* or *summa cum laude* at the end of 2012 or 2013. I am therefore interested to include you as part of my study.

If you consent to participate in this study, your involvement could involve one or more of the following activities:

- Attendance at a focus group discussion, where exceptional academic achievement at UKZN will be discussed (approximately two hours).
- Participation in an auto-photographic induction session before the end of the first semester in 2012 (approximately one hour).
- Taking some photographs with a camera that I will give you (approximately three hours of your time).
- Attending at least one interview with me (approximately two hours in total).

The following points are also important to note about this study:

- The activities we engage in will be audio-recorded and saved in electronic format. These audio-clips (and any transcriptions and documents that arise from these) will

be securely kept by me for the duration of the study. I will then dispose of these five years after the study has been finalised.

- Any information you disclose will be kept confidential, and your identity will also remain anonymous, unless you request otherwise.
- Any photographs or documents you produce during this study will belong to you, however, by signing this consent, you agree to allow me to use these photographs or documents (or copies thereof) for the purposes of this study.
- Unless you specifically request your identity to be known in the study, your name and student number (and any other identifying details) contained on any documents you produce or are produced during the data production process will be replaced with a code or pseudonym. I will be the only person who will be able to match the code or pseudonym back to you (the original data source).
- Involvement in this study will pose no harm, threat or financial cost to you. Should you need to travel anywhere for the study, these costs will be covered by the researcher.
- Your participation in this study is entirely voluntary, and you are free to withdraw your participation at any stage should you wish to. Your withdrawal from the study will not disadvantage you in any way. In addition, your participation (or choice of non-participation) will not directly influence your academic results, or any College decisions around whether you graduate *cum laude* or *summa cum laude* or not.
- I anticipate that your involvement in the study could be of positive benefit to you. Specifically, your involvement could provide you with an opportunity to reflect upon the activities of your academic life and how you would like these to develop and maintain these in the future.

My research supervisor is Professor Renuka Vithal, and she can be contacted on vithalr@ukzn.ac.za or 031 260 8231 should you have any questions regarding the study, or your involvement in it.

Sincerely.



Nicholas Munro

Tel: 033 260 5385, 074 897 2852, Email: munron@ukzn.ac.za

Participant declaration

I..... (full names of participant) hereby confirm that I understand the contents of this document and the nature of the research project, and I consent to participating in the research project.

I understand that I am at liberty to withdraw from the project at any time, should I so desire.

.....
SIGNATURE OF PARTICIPANT

.....
DATE

I hereby request that my identity be known in the reporting of this study. If I change my mind regarding this at a later stage, I will notify the researcher.

.....
SIGNATURE OF PARTICIPANT

.....
DATE

Appendix 8: Information Pertaining to Qualitative Research Participants

Table 10-3

Relevant Socio-Demographic Information Pertaining to the Qualitative Research Participants

Participant	Race	Gender	High school and quintile	Funding source/s for higher education study
Sindi^a	African	Female	- ^b (Q4)	Bursary
Hloniphile	African	Female	Mpande High (Q3)	Financial aid
Khulekani	African	Male	Greytown High (Q4)	Financial aid
Mzolisi	African	Male	Siyaphambili High (Q2)	Bursary
Zanele	African	Female	Emkhayideni (Q3)	Bursary
Lethiwe^a	African	Female	- ^b (Q5)	Private sponsor
Mayibongwe	African	Male	Umqhele Public Secondary (Q5)	Financial aid
Nqobile^a	African	Female	- ^b (Q4)	Financial aid
Sifiso	African	Male	Lusushwana Secondary (Q1)	Bursary
Sikhumbuso	African	Male	Nkosibomvu (Q3)	Scholarship
Bongane	African	Male	Kwaphayikeni High (Q2)	2009: Self-funded, 2010: Financial aid, 2011+: Scholarship
Johnson	African	Male	Asser Maloka (Q1)	Bursary
Joy	African	Female	Dundee High (Q5)	Not provided
Maipfi	African	Male	Tshivhase Secondary (Q2)	Bursary
Mfundo	African	Male	Nkosibomvu (Q3)	Bursary
Ntokozo	African	Male	Brettonwood High (Q5)	Financial aid
Sibongile	African	Female	Siyamukela (Q5)	Mother
Sandile^{a, c}				
Xolile	African	Female	Mziwethu (Q3)	Bursary

Notes:

^a Denotes a pseudonym.

^b School name removed to protect identity of participant.

^c Consent form not returned, but did participate in focus group discussion: Responses in focus group discussion removed from records.

Table 10-4

Relevant Study and Previous Academic Achievement Information for Qualitative Research Participants

Participant	Matriculation year and certificate type (i.e., SC/NSC^b)	Articulation to UKZN	Current UKZN degree	Commenced current degree	2012 year of study	Matriculation score or Academic performance score^c	Matriculation English symbol and level^d
Sindi^a	2002 (SC)	NDip DUT, Employment	BCom (Acc)	2010 (S2)	2 nd	Matriculation score = 31	E (2) 2 nd language
Hloniphile	2010 (NSC)	Direct, but start with BSc Chem Tech 2011	BSc Agric	2012	2 nd	Academic performance score = 39	C (4) 1 st additional
Khulekani	2008 (NSC)	Direct	LLB	2009	4 th	Academic performance score = 34	B (5) Home language
Mzolisi	2008 (NSC)	UNISA	BSS (Hons)	2012	-	Academic performance score = 24	C (4) 1 st additional
Zanele	2010 (NSC)	Direct	BCom (Acc)	2011	2 nd	Academic performance score = 41	B (5) 1 st additional
Lethiwe^a	2006 (SC)	2007 – 2009 not provided, 2010: BSc (Bio Sci) UKZN	BSc (Microbiology/ Biochemistry)	2010	3 rd	Matriculation score = 39	B (5) 1 st language
Mayibongwe	2009 (NSC)	BCom (Acc) UKZN 2010	BSc (Applied Maths)	2011	2 nd	Academic performance score = 33	D (3) 1 st additional
Nqobile^a	2010 (NSC)	Direct	BPharm	2011	2 nd	Academic performance score	B (5) 1 st additional

Participant	Matriculation year and certificate type (i.e., SC/NSC ^b)	Articulation to UKZN	Current UKZN degree	Commenced current degree	2012 year of study	Matriculation score or Academic performance score ^c	Matriculation English symbol and level ^d
						= 39	
Sifiso	2007 (SC)	BSc Biochem (Institution not provided)	BPharm	2009	4 th	Matriculation score = 42	Not provided
Sikhumbuso	2001 (SC)	Employment	BSc (Maths & Stats)	2011	2 nd	Matriculation score = 35	D (3) 2 nd language
Bongane	2008 (NSC)	Direct	BSW	2009	4 th	Academic performance score = 31	B (5) 1 st additional
Johnson	2009 (NSC)	Direct	BSc Land Surveying	2010	3 rd	Academic performance score = 35	C (4) 1 st additional
Joy	2003 (SC)	UJ BSc Biochem (incomplete)	BSW	2010	3 rd	Matriculation score = 32	C (4) 1 st language
Maipfi	2009 (NSC)	Direct	BSc Land Surveying	2010	3 rd	Academic performance score = 34	B (5) 1 st additional
Mfundo	2007 (SC)	BSc Augment (UKZN) 2008 & 2009	BSc Land Surveying	2010	3 rd	Matriculation score = 29	E (2) 2 nd language
Ntokozo	2006 (SC)	UKZN LLB 2007	LLB	2010	3 rd	Matriculation score = 40	C (4) 1 st language
Sibongile	2004	MbChB UKZN (incomplete)	BSS	2011	2 nd	Matriculation score = 45	A (6) 2 nd language
Sandile^{a, e}							

Participant	Matriculation year and certificate type (i.e., SC/NSC^b)	Articulation to UKZN	Current UKZN degree	Commenced current degree	2012 year of study	Matriculation score or Academic performance score^c	Matriculation English symbol and level^d
Xolile	2002	BSS Augment (UKZN) in 2010	BSW	2011	2 nd	Not provided	C (4) Not provided

Notes:

^a Denotes a pseudonym.

^b SC/NSC refers to Senior Certificate or National Senior Certificate – the latter referring to matriculation certificate South African students wrote from 2008 onwards. Students who wrote matriculations examinations prior to 2008, would have completed the Senior Certificate examinations.

^c Matriculation score refers to the composite score achieved for performance in the Senior Certificate matriculation examinations (before 2008). The academic performance score refers to the composite score achieved for performance in the National Senior Certificate matriculation examinations from 2008 onwards.

^d In the NSC, “first additional language” refers to the language being studied as the first additional language to a student’s home language. This differs from the reference to “first language”, which for the SC, denotes a student studying the language at the level of a home language.

^e Consent form not returned, but did participate in focus group discussion: Responses in focus group discussion removed from records.

Table 10-5
Research Participants' Levels of Involvement in the Qualitative Data Production

Participant	Consent	Consent to revealing identity in study	Focus group discussion	Auto-photography induction	Auto-photography completed	Photo-elicitation interview
Sindi^a	Yes	No	1 (Pietermaritzburg)	Yes	Yes	Yes
Hloniphile	Yes	Yes	1 (Pietermaritzburg)	No	Not applicable	Not applicable
Khulekani	Yes	Yes	1 (Pietermaritzburg)	No	Not applicable	Not applicable
Mzolisi	Yes	Yes	1 (Pietermaritzburg)	No	Not applicable	Not applicable
Zanele	Yes	Yes	1 (Pietermaritzburg)	No	Not applicable	Not applicable
Lethiwe^a	Yes	No	2 (Westville)	No	Not applicable	Not applicable
Mayibongwe	Yes	Yes	2 (Westville)	No	Not applicable	Not applicable
Nqobile^a	Yes	No	2 (Westville)	No	Not applicable	Not applicable
Sifiso	Yes	Yes	2 (Westville)	Yes	Yes	Yes
Sikhumbuso	Yes	Yes	2 (Westville)	Yes	Yes	Yes
Bongane	Yes	Yes	3 (Howard College)	Yes	Yes	Yes
Johnson	Yes	Yes	3 (Howard College)	No	Not applicable	Not applicable
Joy	Yes	Yes	3 (Howard College)	Yes	Yes	Yes
Maipfi	Yes	Yes	3 (Howard College)	Yes	No ^c	Not applicable
Mfundo	Yes	Yes	3 (Howard College)	No	Not applicable	Not applicable
Ntokozo	Yes	Yes	3 (Howard College)	Yes	Yes	Yes
Sibongile	Yes	Yes	3 (Howard College)	Yes	Yes	Yes
Sandile^a	No ^b	Not applicable	3 (Howard College)	Not applicable	Not applicable	Not applicable
Xolile	Yes	Yes	3 (Howard College)	Yes	Yes	Yes

Notes:

^a Denotes a pseudonym.

^b Sandile did not return the consent form, but did participate in the focus group discussion. His responses in the focus group discussion were removed from the transcription and subsequent analyses.

^c Maipfi did not complete the auto-photography task. Email correspondence encouraging him to do so was abandoned after a non-response.

Appendix 9: Auto-photography Induction: Facilitator Guide

Time	Activity	Facilitator prompt/guide/questions
10:00–10:15	Arrival and welcome	<ul style="list-style-type: none"> • Participants arrive and register • Facilitator and participants introduction • Seek consent for audio recording of session
10:15–10:45	Introduction to auto-photography	<ul style="list-style-type: none"> • Auto-photography information sheet and agreement • Acknowledgement and release forms – adult and child • Hand out prompt cards
10:45–11:15	Technical instruction	<ul style="list-style-type: none"> • Camera distribution and instruction on technical use • See “acknowledgement of receipt of camera and conditions of use” forms
11:15–11:45	Recap of way forward	<ul style="list-style-type: none"> • Remind participants of process (i.e., take photos, individual interview with me, then choose some to show to group)
11:45–12:00	Open discussion	

Appendix 10: Auto-photography Information Sheet for Participants

5 May 2012

Dear (name)

Re: Auto-photography information sheet and agreement

Thank you for participating in this research project on exceptional academic achievement at the University of KwaZulu-Natal. This information sheet and agreement is intended as a guide for you as you embark on the auto-photography component of the project. It is structured as a set of frequently asked questions (FAQs). Once signed, I will scan and email this back to you.

FAQ 1: What is auto-photography?

Auto-photography is a research method where research participants:

1. take photographs in response to a prompt by the researcher;
2. present and discuss these photographs with the researcher in an interview, and then
3. possibly select some of their photographs to present and discuss with other research participants.

In this research project, you will be using auto-photography to represent your current and historical activities of academic achievement.

FAQ 2: What privacy and ethical issues are there in taking photographs within this research project?

Wang and Redwood-Jones (2001) identify four interrelated privacy and ethical considerations that arise when taking photographs as part of a research project. These include:

1. it being unethical for you to take a photograph of someone without their consent as this could be an **intrusion into their privacy**, even if the person is in a public space,
2. portraying someone in an **embarrassing** light,
3. placing someone in a **false light**, and
4. using the image of someone for **commercial gain**.

In light of the above:

- ✓ You should always obtain consent from a potential subject of a photograph (or the subject's parent/guardian if they are a child) to take their photograph (see "acknowledgement and release" form).
- ✓ If a person (i.e., subject) refuses to have their photograph taken, you should not take the photograph. You do not need consent if you are taking a photograph of a crowd of people, and individual identities in the crowd are unrecognisable. Or, if your focus of the photograph is an object (e.g., a building), and someone inadvertently walks into the frame of the photograph, you do not need that person's consent to take their photograph.

FAQ 3: How will I take the photographs?

I will provide you with a new digital camera, data card, batteries for the camera, and a voucher to develop some photographs. Should you wish to, you could use the voucher to develop hard copies of the photographs for yourself. If you take a photograph of someone, you should offer them a copy of the photograph. Use your voucher to develop this copy for them.

FAQ 4: Who owns the images (photographs) and how will they be used?

You will own the photographs you take, however I may request your consent to use copies of your photographs for my study, thesis or any publications arising from this. I can only use the photographs for these purposes, and only if you specifically consent to this (see sample “photo-release” form). It would be unethical for you to use these photographs for commercial purposes without the consent of the subjects of your photographs. In addition, it would be unethical for me to use these photographs for commercial purposes without your consent and the consent of the subjects of your photographs.

Please feel free to ask me any additional questions you may have about auto-photography via phone or email.

Sincerely



Nicholas Munro

I hereby acknowledge that I have read and understood what auto-photography is, and agree to abide by the ethical and privacy issues documents in this letter.

Name

Signed

Date

References

Wang, C. C., & Redwood-Jones, Y. A. (2001). Photovoice ethics: Perspectives from Flint Photovoice. *Health Education & Behavior*, 28(5), 560-572. doi: 10.1177/109019810102800504

Appendix 11: Semi-structured Photo-elicitation Interview Guide

1. Introduction and debrief about (where appropriate):
 - a. Research process thus far
 - b. Auto-photography process
 - c. First semester academic performance
2. Request the participants to download electronic copies of the photographs they took. Remind the participant that they do not need to download or show the researcher any photographs they do not want to, or they did not get consent for from the people reflected in the photographs.
3. Gather consent forms from people who appeared in the photographs
4. Request the participant to start the reflection process by selecting any photograph that they would like to show and discuss with the researcher. Allow participant to talk freely and openly about the photograph. Some guided questions may include:
 - a. Why did you take this photograph?
 - b. What does it mean to you?
 - c. What is in the photograph?
 - d. Who is in the photograph?
 - e. What is not in the photograph?
 - f. Who is not in the photograph?
 - g. Do any of these photographs represent your future?
 - i. If so, which one and why?
5. Close

Appendix 12: Acknowledgement and Release Form (Adult)

Why are you being asked to have your photograph taken?

- You are being asked to have your photograph taken by a student (and research participant) from the University of KwaZulu-Natal as part of a research project. The researcher for this project is Nicholas Munro, and he can be contacted on 033 260 5824, 074 897 2852 or munron@ukzn.ac.za. Please contact him should you have any questions.
- The research project is a study on academic achievement in higher education, and the student who is taking the photograph is part of the study.
- The student is aiming to take photographs that represent the activities they engage/d in and experience/d as part of their pursuit towards academic achievement.

How will the photograph be used/not used?

- The student will show the photograph to Nicholas, and will have a discussion with him about the meaning of the photograph.
- The student may also show the photograph to a small group of other research participants (all students at the University of KwaZulu-Natal).
- The photograph will NOT be sold, or used to generate any income.
- If the student consents, the photograph may appear in Nicholas' write up of the study, and/or in any publications or documents arising from this.
- Although your name and other identifying details will not appear along with any reproductions of the photograph, it is possible that others may recognise you from the photograph. If you are concerned about this, please decline the request to be photographed.

Who owns the photograph?

- A photograph belongs to the person who takes it. However, the student should offer to provide you with a copy of the photograph, and make the necessary arrangements to get this to you.

Agreement statement: By signing this consent form, I agree to have my photograph taken, and for the photograph to be used as mentioned above.

Name

Signature

Name of photographer

Date

Appendix 13: Acknowledgement and Release Form (Child)

Why are you being asked to have a photograph taken of your child?

- You are being asked to have a photograph taken of your child by a student (and research participant) from the University of KwaZulu-Natal as part of a research project. The researcher for this project is Nicholas Munro, and he can be contacted on 033 260 5824, 074 897 2852 or munron@ukzn.ac.za. Please contact him should you have any questions.
- The research project is a study on academic achievement in higher education, and the student who is taking the photograph is part of the study.
- The student is aiming to take photographs that represent the activities they engage/d in and experience/d as part of their pursuit towards academic achievement.

How will the photograph be used/not used?

- The student will show the photograph to Nicholas, and will have a discussion with him about the meaning of the photograph.
- The student may also show the photograph to a small group of other research participants (all students at the University of KwaZulu-Natal).
- The photograph will NOT be sold, or used to generate any income.
- If the student consents, the photograph may appear in Nicholas' write up of the study, and/or in any publications or documents arising from this.
- Although your child's name and other identifying details will not appear along with any reproductions of the photograph, it is possible that others may recognise them from the photograph. If you are concerned about this, please decline the request for your child to be photographed.

Who owns the photograph?

- A photograph belongs to the person who takes it. However, the student should offer to provide you with a copy of the photograph, and make the necessary arrangements to get this to you.

Agreement statement: By signing this consent form, I agree to have a photograph of my child taken, and for the photograph to be used as mentioned above.

Child's name

Child's age

Parent/guardian's name

Signature

Name of photographer

Date

Appendix 14: Photograph Release Form

Dear participant,

This form is for the release of the photographs taken by you during the research process as initiated by Nicholas Munro.

“Release” means that you consent for the photographs (named below) to be:

	Tick if you consent
- used in the analysis of data for the research study	<input type="checkbox"/>
- reproduced in the dissertation	<input type="checkbox"/>
- reproduced in academic publications	<input type="checkbox"/>

By signing this form you agree that the photographs may be used for the purposes mentioned above.

As you are aware, you own the photographs, and are under no obligation to release any of these photographs for the research.

Names of photographs I consent for release:	

I agree to release the above listed photographs for use/reproduction as indicated above.

Name of participant:

Signatures

Participant:

Date:

Researcher:

Date:

Appendix 15: Transcription Symbols

Adapted from Silverman (2011):

- (()) Text within double parentheses denote the researcher's own descriptions of actions, emotions, and/or references made during the focus group discussion or interview rather than actual transcriptions. The focus of material enclosed in double parentheses is on any process dimension that may be of relevance to report.
- [] Square brackets enclose material that is aimed at adding to, explaining, or clarifying what a person is saying. These differ from double parentheses in that square brackets are focused on clarifying any content dimensions of the quotation.
- (.) A dot in parentheses indicates a gap in conversation that the researcher assessed as not being adequately catered for via usual punctuation. The length of these gaps is usually between one and three seconds.
- _____ Underscored text indicates some form of stress or emphasis on a word or series of words. This stress or emphasis may be related to pitch and/or amplitude.

Adapted from the Publication Manual of the American Psychological Association 6th Edition (APA, 2010):

... A set of ellipsis points indicates some material has been omitted. Where the ellipsis points occur at the start or end of a quotation, this is used to denote that the quotation begins or ends in the middle of a sentence.

‘ ’ Single quotation marks within an indented transcription refer to instances of direct speech as referred to by the person speaking in the transcription. This direct speech could either belong to the speaker in the transcription (e.g., ...and then I said ‘okay’), or the speaker’s reference to someone else speaking (e.g., ...and then she said ‘okay’).