Exploring students' conceptions of the racial and socio-cultural diversity in the learning environment of a medical specialty

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GLOSSARY

BSc	Bachelor of Science
CA	Cognitive Apprenticeship
CHE	Council on Higher Education
CMSA	College of Medicine of South Africa (‘College’)
CoP	Community of Practice
HE	Higher Education
HOD	Head of Department
HPCSA	Health Professions Council of South Africa
HREC	UCT Faculty of Health Sciences, Human Research Ethics Committee
LPP	Legitimate Peripheral Participation
PG	Postgraduate
SA	South Africa
SCD	Socio-cultural differences
SCT	Social Cognitive Theory
SL	Situated Learning
SA	South African
UCT	University of Cape Town, South Africa
UG	Undergraduate
UNESCO	United Nations Educational, Scientific, and Cultural Organisation
UNISA	University of South Africa
WHO	World Health Organisation
ZPD	Zone of Proximal Development

ABSTRACT

Study problem

In the education of South African postgraduate medical specialities, various challenges that could have negative impacts on learning are evident. Racial and socio-cultural diversity in South Africa has roots in a previous societal structure that systematically discriminated against particular social groups resulting in significant political, economic and social inequalities between the groupings.

With the current processes of transformation underway, the sphere of training postgraduate students in medical specialities reveals visible differences in racial backgrounds between students and consultants at the training centres across the nation, with the majority of consultants being Whites and Indians, whilst the majority of students are Black Africans and a few Indians. The recent high failure rate of the summative exit examination in certain specialities has stimulated a high level of interest into how racial and socio-cultural diversity may have influenced the training and learning of postgraduate students or registrars.

Theoretical framework

In this thesis, a conceptual framework is used that combines dimensions from the theories of Collins (1987), Collins, Brown and Holum (1991) on cognitive apprenticeship, Vygotsky (1978), Lave and Wenger (1991) on socio-cognitive and socio-cultural learning, and Bronfenbrenner's (1977) theory on Human Ecology. Collectively they posit that relationships are central to the quality of learning and training.

The education of postgraduate students, so called registrars or intermediary novices, is structured as personal mentoring in the form of cognitive apprenticeship and their legitimate participation in the departmental Community of Practice. Learning in this context occurs through daily service provision under supervision or mentorship, as well as unscheduled informal discussions (engagement) that reflect socio-cultural learning in which novices and consultant specialists interact socially and academically. This form of learning is dependent on effective mediation and participation, which depends upon understanding, trust and mutual respect in a relationship between the two parties. This relationship could be influenced by factors such as inter-personal differences. Whether the factors translate into socio-cultural differences such as language, culture and social identities, need to be determined.

Aim and objectives

The aim of the study was to explore the conceptions of two student groups, one who had left the specialist programme, and the other who had recently qualified, regarding the nature of racial and socio-cultural diversity in their learning environment, the influences on their learning, and how they responded to them.

Methodology

Using one of the medical speciality disciplines as a focus area, a qualitative enquiry using face-to-face in-depth interviews followed by a thematic analysis of descriptive data was employed. Participants were former students who had either left the formal training programme after being unsuccessful in the summative examination and reached the end of their employment contracts, or those who had recently passed the examination and qualified as junior specialists. The interviews were semi-structured to explore participant's learning background through schooling, undergraduate and postgraduate studies, with focus on experiences in formative learning through these stages. The participant's family socio-cultural background was also explored. Data analysis and interpretation were done using a social constructionist epistemology where meanings were co-constructed based on multiple perspectives

Findings and analysis

The following themes were identified from the data analysis:

Theme 1: Racial and socio-cultural differences as barriers in learning, with the sub-themes: constructing 'race', 'language', 'culture', and 'feeling excluded by social status' as barriers to learning;

Theme 2: Relationships in the learning environment shaping learning, with sub-themes: 'relationships in the early learning stage', 'relationships in undergraduate medicine', and 'relationships in postgraduate learning stage of speciality training';

Theme 3: Challenges in the learning process, with sub-themes as: 'lack of curricular clarity', and 'lack of formative learning structure';

Theme 4: Resilience, with sub-themes: 'capacity for adaption', and 'the ways in which resilience has been shaped by the micro- and macro-environments'.

The further analysis found the socio-cultural diversity and relationships affecting engagement during formative learning themes to be inter-related, whilst sub-themes race, language, culture and social identities were also inter-connected. The curriculum, formative training, relationships, people's perspectives and culture of the community were found to be intricate and complex, yet difficulties could still be overcome using certain attributes and skills.

Conclusion

Participants perceived the racial and socio-cultural diversity such as language, culture, personality and socio-economic status in the postgraduate learning environment as barriers to learning. Participants in the group who had qualified were however able to negotiate the diversity by being resilient, adaptable and emotionally mature. These attributes enabled them to navigate difficulties and remain focussed on their goal. An ability to initiate and form relationships with new peers and consultants emerged as an important feature in this group.

These findings could hopefully benefit both current and future students and highlight the need to create opportunities for cross-cultural engagement activities in medical speciality training programmes.

CHAPTER 1. INTRODUCTION AND STUDY PROBLEM

1.1 Introduction and context

The study was set in the context of a postgraduate programme in a medical speciality in South Africa (referred to as Medical Speciality-A) and in particular, the learning environment with respect to racial and socio-cultural diversity (SCD). The researcher was one of the educators in this speciality programme. After two years internship, medical graduates in South Africa have to serve one year of community service before they can specialise. In most medical specialities the 4-6 year duration of the programme is tied with a period of an employment contract. The first attempt at the national exit examination, set by the relevant college, can be taken after four years. During the period 2006 to 2012, there was no part I examination for Medical Speciality-A. Students registered in this period only took part in the part II (final) examination. The curriculum and blue printing for the examination was initially established by the College of Medicine of South Africa ('College') in 2012.

The training programme is divided into 2 phases, the first focussing on basic sciences and the second on advanced clinical medicine, problem solving and management. The students in the Medical Speciality-A programme are also required to conduct and pass a research module in the form of a mini-dissertation in order to register with the Health Professions Council of South Africa (HPCSA) as a specialist. The educational method is based on the cognitive apprenticeship of developing novices into experts. Student registrars are expected to learn while working under supervision and being mentored by the consultants who are considered as experts in the field. Both are employed by the same organisation. Globally, the recommended educational method in medical education and most medical specialities is by cognitive apprenticeship, and this discipline is no different (Cruess, Cruess & Steinert, 2008; Bezuidenhout, Cilliers, Heusden, Wasserman & Burch, 2011). Such a model of education involves personal mentoring and participation in the Community of Practice (CoP), thus requires meaningful engagement and a close relationship between the educator and the students (Genzen & Krasowski, 2007).

Before Independence in 1994, there were only two medical universities that were open to Black African students. Twenty years after Independence, there are nine medical universities in South Africa with selection and admissions policies that seek to redress past discriminatory practices. A number of the institutions achieve this by means of setting racial quotas that are based on the population demographic of the region in which the university is situated. Others use racial quotas based on the national demographic (van der Merwe et al., 2015).

In addition to increased access of Black students to undergraduate medicine, the transformation initiatives of the Department of Higher Education in South Africa have also

focused on training Black South African doctors in the various medical specialities (Council on Higher Education South Africa, 1997), given their under-representation in the professions (Lumadi, 2008), and Medical Speciality-A is in the same situation. The selection and admission policies changed in the year 2000 to allow for transformation. This has led to many Black students from different socio-economic and academic backgrounds entering the Medical Speciality-A programme. They now study under consultant educators who are mostly White and Indian South Africans. There are also White and Indian students in the programme. The ratios depended on the historical background of the universities in terms of whether they were previously predominantly White, Indian or Black universities and the extent that they have now transformed. This had created an interface of racial and socio-cultural diversity that may influence inter-personal relationships. Between 2006 and 2012 the number of students in Medical Speciality-A programme was 15, and of these, six were senior students eligible for the exit examination and none of them passed. These six students continued repeating the examination, but gradually within another four years (2012-2016) as they had not passed, they had to leave the formal education programme and employment. The pass rate in this period cannot be compared with the pass rate before this time as the exit examination was previously conducted internally by the Universities (known as the MMed examination) and there was no standardisation or blueprinting as in the national exit examination by the College.

This cohort of six students who had to leave the programme were four Black and two Indian students. The next batch of seniors in the same period were seven students of whom six managed to pass the exit exam nationwide, and qualified as junior consultants. They were five Blacks and one Indian. Both groups studied under educators who were racially and socio-culturally different from them (from the researcher's observation as one of the consultant educators in this specialty). This phenomenon of two contrasting outcomes in the cohorts arising after the transformation in Higher Education is a central focus of this study.

The literature on South African Higher Education suggests that racial and socio-cultural diversity between students and lecturers can be a complicating phenomenon, and could lead to power issues in the exchange of the knowledge, skills and attitude of the speciality discipline, and the language of various groups may be used to demonstrate power (Jansen, 2004; Diab, Naidu, Gaede & Prose, 2013). In addition, the choice of language of communication, consciously or unconsciously, may be exclusionary, thereby intensifying power relations between students and lecturer. These differences can be more intense in previously divided societies, such as in the South African context. This study emanated from the researcher's interest in exploring if and how students in these two contrasting cohorts conceived racial and socio-cultural factors, between themselves and the consultant educators, and the influence on the quality of their learning.

1.2 Study problem

Medical Speciality-A is offered at the seven medical universities across South Africa. Medical doctors who have been in clinical practice for at least two years are eligible. Students are enrolled with academic departments whilst employed by the service provider as trainee-workers. The nature of the education in this discipline is an apprenticeship model where students learn the practical aspects directly from the consultant educators, whilst applying the theoretical background.

The researcher has been a consultant educator in this discipline for 16 years, as well as an examiner in the final national examinations for the past 5 years. As a female consultant with a racial and socio-cultural background different from the majority of consultant educators and students, the researcher has personally observed a range of dynamics at play in the circle of consultants and student registrars in this field. Coming from different racial and socio-cultural backgrounds, students entering this speciality are also diverse in their academic preparedness as they attended schools or universities with different levels of resources and opportunities. Academic preparedness in this educational programme refers to having adequate knowledge in the theoretical background in the subjects of medical biochemistry, physiology, mathematics, biostatistics as well as demonstrating application skills, an analytical mind, and critical thinking amongst others. Graduates are expected to have clinical practice abilities by the educators of this discipline but in reality, the employer's transformation policy did not discriminate selection of students based on these criteria. The two years in clinical practice also prepared the incumbents differently depending on where they were placed during their internship and community service years. Some received proper training and exposure but others did not. After entering Medical Speciality-A, the student registrars come into contact with the predominantly White and Indian specialist consultants, who are more used to educating students who are better prepared academically. This aspect was experienced by the researcher through informal conversations with students and educator colleagues and is in agreement with reports in higher education elsewhere (Jansen, 2004; Sehoole, 2012) which noted the demographic profile of teaching staff, consultants of the discipline in this case, has not changed significantly in various medical professions.

In the model of cognitive apprenticeship in medical specialities the educators are required to mediate the students' cognitive development effectively via situated learning opportunities such as scaffolding, that allows construction of new concepts, observations and practicing under supervision, cooperative and reciprocal learning, and importantly, social interactions in the CoP. A relationship with understanding, trust and mutual respect between the students and the educators is crucial in this educational model. Factors that can either enhance or hamper this relationship would consequently impact the student's learning.

In accordance with this educational model, the contact time between students and educators is paramount, but in Medical Speciality-A it is limited. The time available for training is in competition with other duties such as a 24-hour service provision to the hospital and surrounding clinics, teaching undergraduate students and engaging in research. Adding to the educational workload is the recent additional requirement that successful completion of a research project is essential for registration with the HPCSA as a specialist. In terms of working hours for the consultants, the 56-hour working week comprises: 30% teaching, training and research, and 70% service provision. However, 70% service provision of consultants' time includes practical training of novice registrars. For the students, the 56 hours are divided as: 40 hours per week dedicated to service provision, with the remaining 16 hours for self-studying and research. In the apprenticeship model, specifically cognitive model, novices are required to learn closely from the educational experts on a day-to-day service learning platform, identifying and solving problems. Thus, in reality, education and service times are not separate.

Learning in Medical Speciality-A focusses on the following areas: knowledge acquisition, skills in making clinical decisions as problems occur, how to handle case consultations, solving day-to-day problems in management areas involving the quality of services, and resolving human resource problems. Effective learning requires active engagement and in-depth discussion between the student and the consultant educator. Discussions outside the formal training programme are just as important, and constitute an important part of learning, making the quality of inter-personal relationships between the two parties a significant feature of learning. The research project also requires close supervision and intensive mentoring between the supervisors and students. The supervisors for the research projects are the same consultant educator in the respective department, and if the relationship between the two parties is poor, then it compromises not only the training but also the research supervision. With the shortage of time and staff in many medical specialties, any contact time between the educators and the students is an opportunity that requires the best efforts of efficient communication and interaction to ensure that learning happens. If this is hampered by factors such as racial or socio-cultural differences, then learning may be jeopardised.

In 2014, educators who were also examiners of Medical Speciality-A, convened a workshop for all the students in the programme to provide guidance in study skills and exam preparation, and the researcher was invited as an observer. Two recently graduated students who had passed their exit examinations with distinctions, provided some guidance to the students and examiners of the last exit exam and provided feedback on the common shortcomings. Students were asked to discuss the learning challenges at their respective training sites but unfortunately, students were mostly silent and the interaction from them was poor. After the

workshop, the researcher randomly asked some students about their experiences in the workshop. They said that they had difficulty in engaging with the presenters and examiners, and they mentioned the same experience in engaging with the consultant educators in their own departments. They did not provide any reasons for these difficulties.

As relational aspects of learning are of key importance, this would seriously hamper the formative learning process due to poor guidance and lack of monitoring. The educators in the workshop recommended study skills such as concept mapping, critical inquiry, active engagement, and they also suggested learning within a group. Such approaches are part of learner-centred teaching methods for facilitating conceptual development and are essential for the specialist training (Spencer & Jordan, 1999). When the presenters asked how much of these activities or opportunities are provided in the formative education in their departments, participants did not provide a clear picture. Students who attended the workshop and were in their final year had felt that the workshop and suggestions came a bit too late for them. The researcher noted that the students did not have the courage to openly discuss their challenges at the workshop.

On another occasion, the researcher met students who had failed the exit exam, but continued in the formal programme and requested some assistance in checking their answers to some past papers. They expressed feeling overwhelmed with the workload with little time to study. Some found themselves incapacitated in certain difficult tasks relating to the subject areas where their previous exposure was not adequate, whilst others had expressed feelings of being pre-judged as having poor abilities to cope with the programme. These students also talked about how peers segregate into racial groups during informal discussions, and that some educators select the students from their same ethnic group to discuss patient cases. This was also observed in the researcher's own department, as the consultants seem to relate or engage better with the students from the same ethnic group with whom they share their vernacular.

In the South African context, the previous political regime practised policies of institutionalised discrimination based on 'race' that negatively impacted and inhibited the life chances and opportunities of those who were discriminated against. It resulted in racial tensions and deep gulfs between the various racial groups (Jansen, 2008; Pym, 2006). Under apartheid, the racial differences of various groups of people were linked to their distinct cultural, linguistic and social divisions. However, after 24 years into the new South African democracy, socio-cultural diversity are not only exclusively related to race, but also inclusive of beliefs, values and attitudes of societies in the areas of life styles, socio-economic class and political trends (Dolby, 2001). Furthermore, within one ethic group, for instance Black South Africans, there may be social layers and individuals with a different culture in their daily

practices. Given the legacy of the Apartheid policy, and the relative infancy of the South African democracy, the proposed study assumed that socio-cultural diversity are related, but not reducible to racial differences between the students and educators of Medical Speciality-A. The complexities of navigating learning that has been influenced by the previous racial and social divisions have become challenging for students when their mentors or consultants are from different cultural backgrounds.

From the researcher's observations, in addition to the known factors such as constraints in the contact time due to high workload, there may also be subtler or less visible difficulties related to the inter-personal relationships amidst racial and socio-cultural diversity. Such diversity could underpin the students' claims of lack of engagement and poor relationships with the consultants, which subsequent impacts on the cognitive apprenticeship model. Therefore, a study was thus needed to explore the students' conceptions of such diversity in their learning environment, how they dealt with them, and if and how this impacted on their learning in this medical speciality.

CHAPTER 2. LITERATURE REVIEW

2.1 Socio-cultural diversity in higher education and in the South Africa post-apartheid era

According to the World Health Organisation (2008), diversity includes race, ethnicity, gender, religion, language and disability. Cultural diversity is not only based on the traditions of race and ethnicity, but also on social beliefs, values and practices. In some societies, stereotypical and prejudicial beliefs and behaviours also contribute to the cultural diversity. Socio-cultural diversity is defined by UNESCO (2011) as socially and culturally constructed human differences. From that perspective, diversity is not impartial, but may imply potential problems of discrimination and disparities that authorities and individuals in that environment must deal with. These problems are more visible in societies divided by politics, race or social injustice as in conflict or post-conflict areas in the world.

In the context of education, inter-racial and cross-cultural learning have both impacted learning in higher education globally. In South Africa with challenges arising from power struggles, emotions and tensions between students and teachers have been noted (Conceição, 2002; Bozalek, Carolissen, & Leibowitz, 2013; Diab et al., 2013). The uncomfortable feelings associated with sharing the learning environment with students from different racial and socio-cultural backgrounds, and also learning from educators of different origins and backgrounds, may lead to exclusion and segregation amongst learners in higher education (Alegre & Villar, 2009).

In South Africa medical universities, the apartheid education system divided societies and students coming from White, Indian and Black backgrounds. The universities were racially segregated, following the categories imposed by the apartheid State on primary and secondary schooling with separate institutions for White, Indian and Black groups, respectively. During apartheid, individuals were not only barred from knowing and interacting with each other, but it was a social system that severely disadvantaged the majority of the population (SAHO, 2017). Throughout schooling and higher education, access to well-resourced facilities was for many decades reserved for Whites only, with a small amount of others having to struggle to enter the arena. In the later years of the apartheid regime, certain universities were created to educate only Black doctors to work in the rural areas to treat their own race, and the curricula at these institutions were specifically made for training generalists, focussing on the locally prevalent diseases in the Black communities.

Twenty years after Apartheid, as the diverse cultural groups have come together to share the learning platforms in higher education, relationships were expected to be formed with mutual trust and respect. In Sehoole’s (2012) view, transformation has not happened in the hearts of the previously advantaged ‘race’ and forgiveness has also not yet arrived in the hearts of the

oppressed. Both sides have not been prepared adequately for how to deal with each other, and the rush of transformation has led to power issues at every interface, including social and educational spheres (Msila, 2013; Jansen, 2004; Reddy, 2004).

Jansen (2004) highlighted that although the drastic change in the size and shape of student recruitment to reverse the landscape has been visible, this has created an interface between the dominant number of Black students and the non-Black educators at higher education institutions. The author warned that the radical altering of the educational models designed towards training and support for these students needed urgent attention in order to develop the new cadre of academics and researchers. In Jansen's (2004) opinion, this can only be met if the owners of the knowledge and skills are willing to transfer this property of knowledge and skillsets to the students without the presence of power play. Students too can learn to act without attitudes of arrogance transpiring from the changed politics of the country, and from their previous racial scars. The deeply rooted beliefs and behaviours of each party will take some time to change, hence the importance to monitor that the institutional culture does not remain in the shadow of apartheid.

Taking cognisance of these changes and the need to monitor the pace of transformation, the Council of Higher Education of South Africa (CHE) commissioned a case study highlighting the importance of sluggish and ineffective social transformation, resulting in the flaws of poor quality and sub-optimal learning outcomes, including a low success rate of students from under-privileged backgrounds (Reddy, 2004). This was supported by another study advocating that current practices do not address critical issues of power and social forces that affect the learning, sharing of resources and environment (Lumadi, 2008). Sehoole (2012) added that although there has been rapid and deliberate racial integration enforced by laws in the South African higher education arena, a lack of integration or cohesion on a social and cultural level of racially diverse lecturers and students has remained visible. Whilst students of different backgrounds now share the classrooms and the learning environment, the relationships in day-to-day learning are still mostly based on how comfortable they feel within the same racial and socio-cultural background, shared language, and the past inequalities that may have resulted in hegemonic assumptions and distrust amongst different racial groups (Sehoole, 2012). Msila (2013) also highlights the post-apartheid gap between the poor and rich Black families, creating distinct social classes within a race. This gap has led to a lack of educational opportunities for poor Black families and possibly low educational achievements in coming generations. If this is not corrected it may lead to a perpetuating cycle of disadvantage. Furthermore, the author claimed that language selection can infer power relations in a diverse racial and cultural community that can pose a barrier to learning (Msila, 2013).

Student academic preparedness also forms part of the diversity in the context relating to the readiness for higher education programmes. This educational background originates from the inadequacy of secondary school education specifically in the context of medical education, and such students need either an extended period of study, or extra academic support to bridge the knowledge and skills. Most universities struggle with the number of staff or skilled staff to provide the instructional design for bridging courses, which poses additional challenges to the remedial actions in support programmes (Sondlo & Subotsky, 2010).

The University of Cape Town (UCT) in South Africa undertook a survey of postgraduate student profiles and student experiences in medical specialities between 1999 and 2006. The findings revealed that although the number and profiles of enrolled students showed significant transformation driven by the policies and procedures, some Black students experienced animosity or hostility. They also reported students' fears of being discriminated against. There is a call for policies that ensure appreciation of diversity and integration of diverse students. The findings also highlighted a need to review strategies to address the currently prevailing institutional culture and foster mentorship (London, Kalula, & Xaba, 2009).

Dukhan, Cameron, & Brenner (2016) reported academic challenges of first year students at the University of the Witwatersrand due to the language barrier, as they transit from secondary school. At secondary school, teachers use a mixture of mother-tongue and English to explain difficult concepts in a purely English medium curriculum. The shift from a teacher-driven environment of school to student-driven learning was also identified as a challenge. Vandeyar & Mohale (2017) discussed the racial relations at another university in South Africa that, despite the new Constitution providing equal opportunities for all, racial categories still operated in the daily institutional experiences. Students' immersion in different cultures in the shared residences, however, seemed to intensify the feelings of prejudice. In the postgraduate arena, Bezuidenhout and colleagues (2011) found that students expressed feeling alienated and believed that this related to their lack of relationships with their consultants and it led to poor learning outcomes.

Between 2002 and 2012, some universities had developed interventions to address the transition challenges. For example, the University of Cape Town identified vulnerable students through the admission scores in undergraduate medicine and rehabilitation professions' programmes and provided extra academic support via an innovative intervention programme (IP) (Alexander, Badenhorst & Gibbs, 2005). It was a supported learning programme for educationally disadvantaged students and it produced promising outcomes. Simultaneously, in the clinical training of undergraduate medicine, problem-based learning

was incorporated with the mainstream curriculum to enhance academic performance (Burch, Sikakana, Yeld, Seggie, & Schmidt, 2007).

Dissatisfaction with the progress of transformation came to a head in 2015 with the "#Rhodesmustfall" campaign by Black students at the University of Cape Town. This campaign highlighted the students' struggle with alienation and barriers such as the institutional culture and language use. Students constructed this as racism and the effects of colonisation. The protests were joined by Black students at Afrikaans-speaking universities calling for decolonisation of curricula in various academic programmes. The subsequent 2016 "#feesmustfall" protests demanded equal opportunity in terms of access to higher education. Whilst the feasibility of free higher education is still under discussion, Habib (2016) called for de-racialised higher education at every SA institution by critically analysing the root causes of institutional barriers of students failing.

The literature supports that South African students in medical programmes are facing real challenges of integration within the framework of racial and socio-cultural diversity in their learning environments (Alexander et al., 2005; Burch et al., 2007; Dukhan et al., 2016). They believe that it contributes towards students' educational outcomes. The literature in this regard is more prevalent for undergraduate students than for postgraduate registrars, especially regarding how the students conceive the effects of diversity. Whether their learning is hampered or not by experiences of diversity has not been explored in any depth nor is there published research on how graduated students navigated experiences of diversity during their studies.

2.2 Educating intermediate novices in medical specialities

Literature on training in the medical specialities that addresses the nature of the study problem indicates three main intertwined concepts. These inter-related concepts form the basis of the theoretical chapter. The main concept, cognitive apprenticeship, is implemented through sequences that are closely related to guided cognition within the Zone of Proximal Development (ZPD) (Vygotsky, 1978) and legitimate participation of intermediate novices in the CoP (Wenger, 2010). The implications in both processes are the importance of inter-personal relationship between the student and mentor or amongst the members of the CoP. Each concept is discussed in the literature below and the relationship between the three components is discussed in the 'Theoretical Framework' chapter.

2.2.1 Cognitive apprenticeship model in training of medical specialities

Most clinical disciplines in medical specialties, including that of the present study, use a cognitive apprenticeship (CA) model of training (Lyons, McLaughlin, Khanova, & Roth, 2017). Literature concerning innovations in training models for medical specialities refers

principally to curricular frameworks rather than methods of training, the most common being competence-based or workplace-based assessment approaches that encompass CA (Fokkema, 2016; JRCPTB, 2009). The CA model includes mentoring, role modelling and development of novices into experts, all of which require a positive nurturing relationship between the student and the consultant educator (Collins, 1987; Collins, Brown & Holum, 1991). Drawing on the work of Sullivan and Ruddick (2013), cognitive apprenticeship is a learning model using observation, coaching and practice with an expert who focuses on the development of skills for complex professional practice. In the process, the learner acquires the knowledge and psychomotor skills associated with a profession. In the cognitive apprenticeship model, the experts and novices interact socially whilst modelling and coaching the tasks. This cultivates learning and developing cognitive skills provided by the authentic learning experiences. The model harnesses socio-cultural theories of learning in situations through participating in the CoP by the junior members that is a legitimate ground for learning and internalising the practices and culture of the profession. Students participate in the legitimate peripheral zone and move towards the centre of expertise, as described by Lave and Wenger (1991). They claimed that learning through active participation in real life settings and the engagement in the process promotes the transfer of knowledge, skills and attitudes. The situated learning that the authors refer to is also at the heart of cognitive apprenticeship. However, it requires and enhances a metacognitive level of thinking, articulating and critiquing skills, leading to deeper learning with better outcomes (Dennen, 2003; Dennen & Burner 2007). These authors support the notion that the cognitive apprenticeship model is intertwined with the socio-cognitive as well as the socio-cultural learning theories.

The CA framework encompasses four dimensions of the learning environment: 1) Content required for expertise such as facts, concepts and procedures; and, problem-solving, meta-cognitive and learning skills; 2) Methods for promoting expertise development; 3) Sequence of learning activities as increasing in complexity and diversity, and building conceptual maps before acquiring specific skills; 4) Social characteristics affecting learning, such as real-world context, practice communities, learner motivation, and cooperation amongst learners. In this framework, consultant experts need to be mediators to determine the cognitive and conceptual levels of where the student novices are and also to determine where they need to grow to become experts. Their duty will then be to coach the students to reach the expert level by guiding and facilitating learning. The strategies of developing a novice in the model of cognitive apprenticeship are explained by Sullivan and Ruddick (2013) and are discussed in detail in the 'Theoretical Framework' chapter below.

In the context of medical specialty training, the CA model focuses on the development of cognitive skills for complex professional practice. It differs from the traditional

apprenticeship model that focuses rather on the workplace needs, over and above learning needs. To transform the traditional apprenticeship model to one of cognitive apprenticeship the mentor is responsible for identifying an appropriate task aligned with the expected outcomes. Educators need to look for tasks in authentic real-life contexts and make the expected outcome explicit to the students, so that they can appreciate the task as relevant and create different applications with shared aspects. This enables the novices to relate what they are currently learning to what they have already learnt, thereby promoting spiraling learning (Collins, Brown, & Holum, 1991).

2.2.2 Mediation by the more knowledgeable other

Medical specialty education is focused on coaching of novices to become experts. Vygotsky's (1978) concept of the ZPD is applied as a component of Social Cognitive Theory (SCT). The theory suggests that the development phase comes after the learning phase in which the more knowledgeable other (MKO) creates the zone that is a gap between the levels of what the novice can currently do or think, and what the novice can do with the assistance of the MKO, seen as a potential step in growth (Bandura, 1989). It is the gap between what the novice has mastered and what can still be learnt when educational support or mediation is supplied. The ZPD is a key area where the mentor can contribute to the actual development of a student. The expert educator needs to discover what the novice's potential is by getting to know what he or she already knows, understands and can do, and then to introduce a range of appropriate learning opportunities for the novice to develop relevant knowledge and skills to reach his or her potential (Vygotsky, 1978). In the context of medical specialty education, the learning opportunities would include those listed previously (modelling, coaching, scaffolding, articulating, reflecting, exploring) drawing on Sullivan and Ruddick's (2013) work. Forming trusting and honest relationships is crucial for such positive and conducive learning experiences. In that model of learning a profession, the presence and interplay of racial and socio-cultural diversity in the South African context would be an important factor that can deter quality learning.

2.2.3 Participatory learning in a Community of Practice (CoP)

In addition to the concepts of ZPD and socio-cognitive development, learning in a CoP also applies in postgraduate medical specialty education. CoPs are communities where members from the same or related professions share the focus, goals and practices, socially interact, develop a culture and the attitude of the specialty and learn from one another's experience and shared views (Lave & Wenger, 1991). As the postgraduate students in this context have already been medical doctors with a few years' experience, they are closer than undergraduate medical students to the center of the CoP that is occupied by the senior members (consultants

and experts) of the discipline. Over the four-year training period, the students' 'intermediate' position changes to the status of junior member in the CoP.

If experts display dominating behavior towards the intermediate students transitioning to junior status, it has the potential to create power issues between senior and junior members of the CoP, and that, in turn, can be counter-productive for learning in the CoP (Lave & Wenger, 1991). In some medical clinical disciplines in South Africa, the CoPs are small in size as per the nature of the discipline, and such power issues, if present, would be more detrimental to learning. Overcoming such deterrents has become a center of attention in order to ensure active and meaningful participation of novices and intermediaries in the CoP. These deterrents may consist of socio-cultural differences amongst others. If the members of the community are not mature, or have an inadequate emotional capacity to accept and deal with the diversity, the participation in the CoP will not be fruitful. Such an effect may be more apparent in South Africa due to the country's previously divided society. Members of the dominant culture may promote poor interaction with members from another culture owing to the history of social division (Jansen, 2008).

Currently there is no published research in the literature that discusses if and how contextual factors impact the training of postgraduate students in medical specialties in South Africa. Due to the social injustice and divided societies from the apartheid history, such studies are relevant for this country especially in the area of postgraduate Higher Education where students are professional workers.

2.3 Human Ecology theory of development

Relationships play an important role in the socio-cultural interactions and ultimately meaningful engagement between the learning parties and members of the community. Inter-personal relationships require understanding, mutual respect, trust, and empathy that, in turn, are shaped by an individual's behavior and attitude. It is therefore important to understand the impact of previous environments on the growth and development of individuals in the learning environment and ultimately how they see their relationships with others. This notion is evident in the macro and chronological ecology theory first mentioned by Bronfenbrenner (1977). The theory postulates why people's behavior may be different depending on where they are operating, such as in the presence of their family, in school or at work. The principle of this theory is that there are various environments in which the individual is immersed throughout his or her life cycle, and each environment may influence the behavior of the individual in varying degrees. The author used the image of an ecosystem with micro-, meso- and macro-environments that influence people's outlook towards life challenges. For some individuals, these experiences and responses may lead to discomfort or distrust in relationships. The

development of abilities to overcome resistance or adversities in the currently faced environment then need to be established.

In one study, PhD students from Ethiopia enrolled at the University of South Africa (UNISA) reported their experiences and challenges of their education. Their strategies for coping with learning at a higher level and personal problems emerged. These factors were found to be associated with poor study outcomes, and the extent of such seemed to relate to the individual's life history and previous experiences, as the author drew on the Human Ecology theory. Recommendations urged the university to provide strategies and support for diverse students to cope and deal with these challenges (Bireda, 2015). Drawing on that study, it is clear that successful education of students in the cognitive apprenticeship model needs to look into students' previous learning environments to understand the students' behavior and outlook towards diversity, which are important in the relationship with their educators.

2.4 Dealing with socio-cultural difference

As both students and the educators in medical specialties are medical professionals, they should have an ability to deal with personal differences, although this can be a huge task for some students (Shepherd, Braham, & Elston, 2010). Emotional maturity, respect, trust, honesty, understanding, empathy and tolerance are important factors in one's capacity to deal with the personal differences in human relationships. Building on these factors, both novices and expert educators require inter-personal skills such as communication, enquiring, commenting, providing feedback, and questioning and answering skills. Appreciative enquiry, positive criticism and helping without taking the identity of the student away are particularly important (Shepherd, Braham, & Elston, 2010).

Both students and consultants need to develop these skills, attitudes or values, yet it has never been part of the formal curriculum in medical education (Ismail, Abiddin, & Hassan, 2011; Aultman, 2005). Moreover, dealing with difference is an essential exposure for the students as future specialists as they will face complex social problems in the South African patient population (Frenk et al., 2010). A survey conducted on postgraduate students in Internal Medicine in America showed that curricular inclusion of activities in cross-cultural learning improved confidence. Students expressed comfort with cross-cultural, language and religious encounters, and the activities laid the foundation for ongoing learning regarding these diversity (Staton, Estrada, Panda, Ortiz, & Roddy, 2013).

Another strategy in creating learning opportunities for cross-cultural learning in medical education is through the social problems being simulated to include human rights and ethics related issues in case scenarios, and asking the diverse groups to find common solutions (Lopes-Murphy, 2014). Alternatively, pairing students and educators of diverse backgrounds

to share their experiences in life events, ways of life and the underlying reasons for these, may assist them to understand each other at a deeper level, and find tolerance and acceptance in co-existence (Nieto, 2006). A curriculum that addresses the adoption of 'multi-focal lenses' by both educators and students, as suggested by Mclean (2012), needs to be considered for medical specialty programmes in a South African context. In addition, student-centered approaches as reflected by learning style diversity also form part of the total diversity, and guidelines should be published to ensure inclusion of all learners in the teaching and learning activities (Knobloch, 2007). However, they are not elaborated on in this literature review as it is not the focus of this study

2.5 Summary of literature review

In conclusion, the literature supports that challenges regarding racial and socio-cultural diversity exist and are relevant in the learning of students in higher education and medical education in South Africa. These challenges could disrupt learning when students and teachers are not well equipped with abilities to deal with the differences felt from the diversity. Amongst socially divided societies in South Africa, previous scars may worsen the feeling of differences. Training in the medical specialties holds a significant stake for students, employers, and the community at large, thus successful learning is important. One strategy is to improve interaction and engagement by probing how students perceive the diversity in learning relationships, to find ways to promote cross-cultural navigations. The current study was therefore conducted to help with understanding how students who have recently graduated, and students who had to leave the programme after failing the exit examination, constructed and perceived the socio-cultural diversity in their learning environments and whether it had an impact on their success or failure. The study also recognises the importance of understanding the consultant educator' perspectives and conceptions on the same issue.

CHAPTER 3. THEORETICAL FRAMEWORK

3.1 Introduction to the theoretical framework

The following diagram depicts the inter-relationship between the concepts and theories forming the framework that supports this study. The detailed concept map is depicted in Figure 2, below.

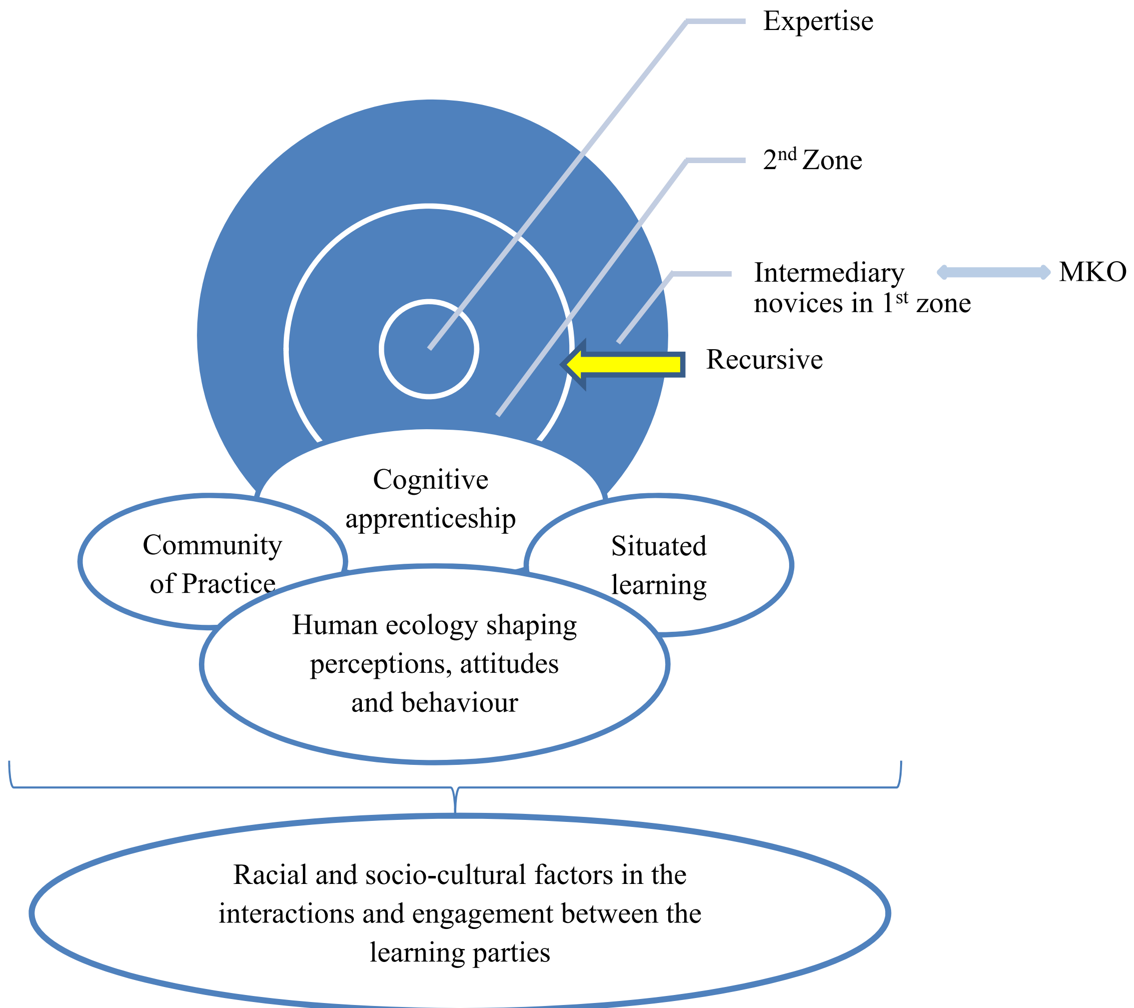


Figure 1 - Diagram depicting relationships of theories and their concepts in this study

Figure 1 reflects the relationship of theories and concepts framing the study. The main focus is on the intermediate novices, the registrars, who enter the discipline from the periphery with their current level of cognition or capability and move towards the new level of cognition and skills based on their potential assisted by the MKO. The second zone of development is determined by the MKO with a higher degree of cognition and skills towards the centre of expertise. Recursive movement in each zone denotes revisiting previously learnt skills, and assessing and improving cognition. The role of the MKO is as a mentor who demonstrates ideas, values, strategies, understands the current capability, potential and provides activities with increasing complexity and monitors the progress. The role of the novice however, cannot

be understated although the original concept of cognitive apprenticeship did not mention this. Other educators who applied the model recognised the importance of relationships between the two parties and the role of the student (see Section 5.6 'Evaluative analysis of data in conjunction with literature review, linking to theoretical framework and research questions'). The role of the novice is to demonstrate a willingness to learn, be respectful, take responsibility for his or her own learning, an ability to adjust and adapt to the values and attributes required by the discipline. The inter-dependent relationship between the intermediate novice and the consultant MKO is expressed in this picture.

The sequence of cognitive apprenticeship in each zone is identified by the consultants as shown below (Sullivan & Ruddick, 2013). It is important to note that these activities are recursive during the education of novices into expertise.

- Modelling, as the expert showing the registrars how to perform a task;
- Coaching, where the consultant observes and facilitates while the registrar performs a task;
- Scaffolding, as the consultant provides a step-wise approach tailored to the individual's need to support the registrar to perform a task and then slowly withdrawing the guidance as the student's competence increases;
- Articulation, as the consultant explains how he or she thinks about solving the problem in the tasks and also encouraging registrars to verbalize their understanding and conceptualizing;
- Reflection, where the consultant enables registrars to compare their performance with others, self-evaluate performance and judge themselves against the expected outcomes;
- Exploration, where the consultant asks registrars to create simulated problems and solve them.

CoP in this medical speciality is unique as there are two layers. The first is within the academic department where the Head of Department (HOD) is an authority figure and expertise derives from authoritative knowledge and reputation within the discipline. Discipline is the field of the speciality and the department is the place where its education is offered and there may be more than one discipline per department. Other members of the department, who are the senior and junior consultants, are hierarchically subordinate to the HOD, and the implication is that their knowledge and reputations are not at the same apex level as that of the HOD. They are required to educate the novice registrars or intermediate novices, who should participate in the situated learning opportunities in the departmental CoP. The power issues or power exertions in the learning environment can impede the entry of the novice registrars as well as lead to poor participation such as silence during discussions.

The second layer is the national CoP which consists of chief and senior consultants from each of the universities where this medical speciality is taught. Efforts to move towards the centre of expertise in the national CoP can result in professional rivalry, creating a different set of tensions and conditions for exclusion. For example, some senior members in the CoP who have published successfully or who have international recognition may acquire sufficient authoritative status within the national CoP to influence decisions relating to changes in practice. Such decisions are cascaded down to the departmental communities. These national influences could lead to further tensions within the departmental CoP. It could also result in research output and influence being prioritised over education of intermediary novices.

The following are illustrative of the CoP dynamics outlined above. Some HoDs may take a great interest in educating novice registrars whereas others may prioritise managing daily service provision, which makes up 70% of the employment contract. In theory, these two tasks should not be in competition because training and service are inseparable in the apprenticeship model. Prioritising research output for access to larger research grants has become a basis of academic authority in the national CoP for the HoDs, taking away the mentoring and supervision contact time with the novice registrars. A member in the national CoP with the longest list of publications, or greatest number of international awards or having access to the largest amount of research grants may become powerful, and exercise power over the other HODs and senior consultants. There may be a lack of interest in mentoring junior consultants if the areas of research focus are not the same. Probst and Borzillo (2008) provide an example of power dynamics in the CoPs of business organisations to show the disconnection of smaller corporations from the national business forum due to the horizontal imposition of power by the larger players.

These examples reflect the triangular relationship between control, power and authority. Control means a person or a group has an impact on another person or group in the resources that they have access to. Power is the capacity of a person in the CoP to influence the others in the way they think or act or decide. Authority is the power that is formally given to a person or a group because of the position they occupy in the organisation. In their relationship, one accentuates the other (Wenger, 2010).

A senior member who has either attained authority by an official position or through depth and breadth of scholarship in the community, can use his or her control and power positively and negatively. He or she can use his or her resources and bureaucratic or academic authority in the culture and practices of the CoP that either promote participating of junior members or negatively inhibits their entry and participation. The expertise of the individual member

within the CoP should be a collective resource, but when other issues of identity and power impact negatively, then the CoP is undermined.

A CoP can be seen as a social learning unit with hierarchical power structures that influence interactions. The power and control from senior members can have a powerful influence on junior members who are constantly negotiating their identity and cultural meanings within the dynamic boundaries of the community. When there is disequilibrium of identity and power, it can hamper the social interactions within the CoP, thus the same resources that allow the CoP to thrive, such as forming informal power structures, could become a danger to its survival (Wenger, 2010). These issues may seem more apparent in South Africa's medical speciality CoPs due to the history of racial and socio-cultural divisions amongst the members. The ramifications may still exist and impede the intermediary novices in interaction and participation.

Moreover, environmental factors impact on the context where the CoP operates. For example, institutional culture, progress of transformation and political situations could also influence the behaviour and interaction between the CoP members and their interactions in the community. In the South African context, each university has a different institutional culture. Some may hold on to the White dominant colonial culture and language system, whilst others are more transformed. A disparity between the junior members may exist in terms of their educational history and socio-economic status, such as the quality of their secondary schooling and undergraduate medical studies). Such contextual factors may impact participation in the CoP. Wenger, McDermott and Snyder (2002) acknowledged that to maintain an individual's participation, the environment in which the CoP operates needs to be free from threats. It is clear from the theories above as well as reflections on the discipline's CoP that these variables can interconnect to hamper the functioning of the cognitive apprenticeship. The complexity of power, control, and authority in the learning environment can impact on how the novice registrars conceive their identity and participation. This complexity can also intersect with the behaviour each registrar postulates.

The matter can be further understood with the use of the Human Ecology Theory. As put forward by Bronfenbrenner (1977), the macro and chronological ecology theories explain how various historical factors in the background of the individual's life (ecosystem) can shape the development of the individual and is reflected in their perceptions, behaviour and attitude. Bronfenbrenner (1977) describes subgroups of the ecological system (also referred to as the 'environment') as micro-, meso-, exo- and macro-systems. The micro system constitutes home, school, work and family and how each immediate setting interacts with the individual, and how the individual accommodates and negotiates the occurring events. The immediate

settings in this system can have an impact on the individual (reciprocity), or all of them in combination can have an impact on the individual (totality).

The meso system reflects how the settings in the micro system interrelate to impact on the individual. How events in the one immediate milieu (family situations), affect the individual's development that shapes their behaviour and perception and could affect relationships at work or in societies later in life. Similarly, the events that occurred at school or in a peer group could affect the individual's interactions within the family.

An exo-system refers to the formal and informal structures that are in the surroundings of the micro-environment. Although they do not directly affect the developing person, they can impinge upon or indirectly control the immediate settings in the micro- or meso-environments where that person is found. These structures include the major institutions of the society that are relevant in the local and the national level. Others include social or academic networks, the media, local and national government agencies, the availability of resources and how they are distributed, and communication within communities.

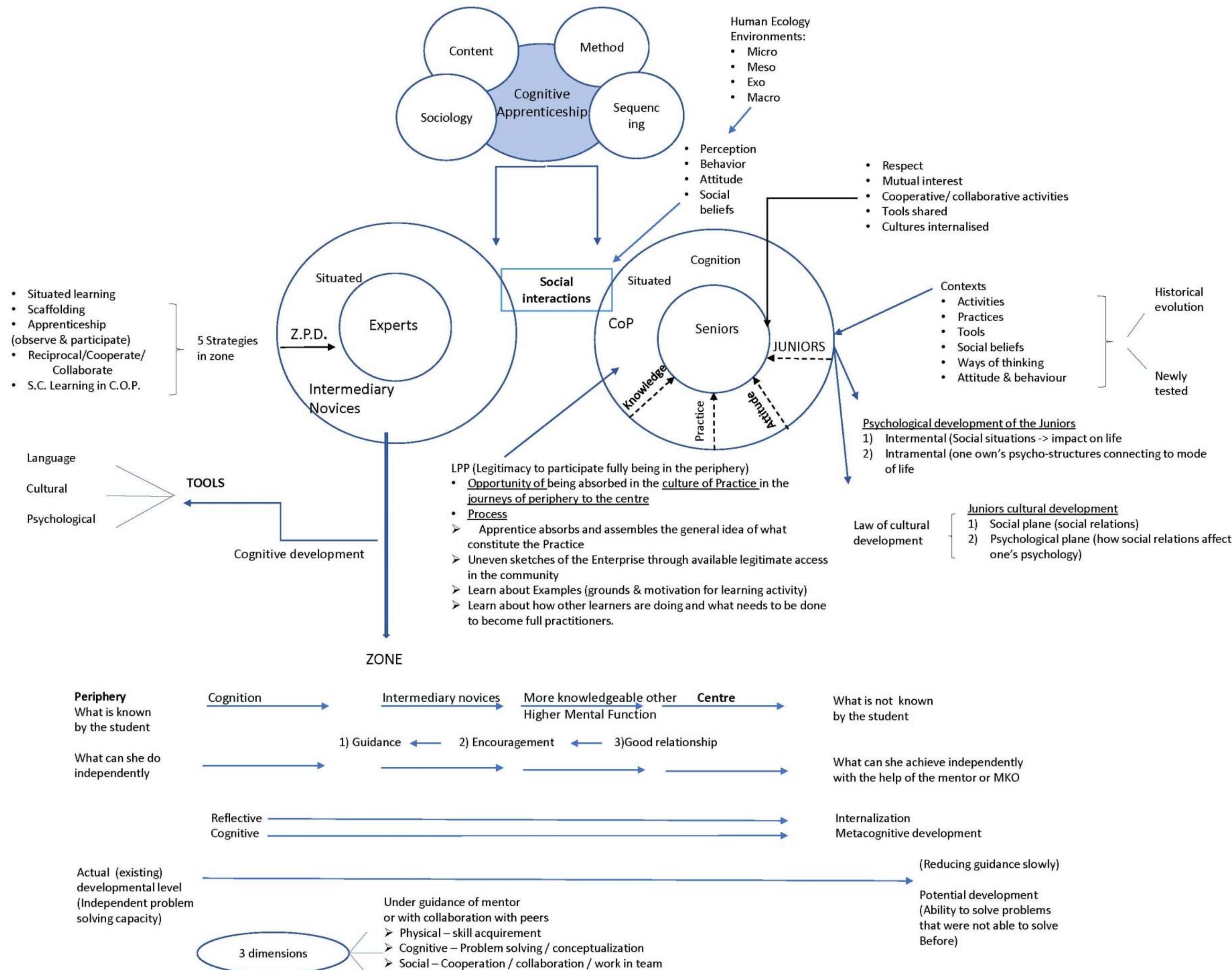
If a learning environment in an academic department could be interpreted as a micro system to the intermediary novice in this medical speciality training, the immediate settings would be the hierarchical reporting line in the department, the racial, language, socio-cultural backgrounds of the learning parties, the curriculum and learning opportunities and the gaps in the levels of the junior and senior intermediary novices. Each of the settings in these environments impacts on the individual member's perception, behaviour, socio-cognitive development, and subsequently on their conception of how the environment impacts on their learning.

The exo-system in this study comprises the formal or informal academic programme during formative training, opportunities for interactions in the small groups, departmental and institutional culture that is either conducive or otherwise for the intermediary novices, time or budget constraints for learning activities or the concomitant responsibilities such as service workload and associated problems with service provision. Such settings may promote or hinder the development of individual novices in the department.

In a nutshell, relationships play a crucial role in the mediation of cognitive development of the novice registrars and for the facilitation of their participation in the CoP, the main area of educational focus in the cognitive apprenticeship model. In turn, relationships are dependent upon how people see themselves and each other, their behaviour, attitudes and perceptions. In the South African context, racial and socio-cultural aspects of people's perceptions of each other is relevant within the sphere of relationships. Initiating the proposal of exploring the

conceptions of the novice registrars in the areas of racial and socio-cultural relationships in their learning environments, and if and how these affected their learning.

Figure 2 - Concept map



The relationship between the named theories and the problem raised in this study is shown in the concept map in Figure 2. The mediation in the ZPD and socio-cultural learning in the CoP are the two main pillars of the cognitive apprenticeship model in the education of this speciality. The concept map captures the various tools and dimensions involved in the development of intermediary novices whilst learning in the ZPD and participating in the CoP. The purpose of this concept map is to demonstrate the intricacy and complexity involved in the education of postgraduate students and how the processes of training are underpinned by the relational aspects between the student and the educator, and junior and senior members.

From the concept map it is suggested that the engagement between the student and MKO which is required for the transfer of discipline-specific knowledge and skills occurs through their social interaction and relationships. Individual's behaviour, perceptions, beliefs and conceptions towards each other (or different other) may influence how they proceed or behave in these relationships. It may also influence how they initiate or form relationships. Human Ecology theory suggests that a person's previous immersion in different environments can shape his or her perceptions in the current environment. This study seeks to explore how students conceived the racial and socio-cultural diversity, and if they experienced the diversity as posing any challenges in their mediation in the ZPD, and their access and participation in the CoP.

3.2 Aim of the study

Based on the theoretical framework explained, the aim of the study was to explore the conceptions of two student groups regarding the nature of racial and socio-cultural diversity in their learning environment, the influence on their learning and how they responded.

3.3 Objectives

1. To explore how students of these two groups experienced and conceived the racial and socio-cultural diversity in their learning environment.
2. To explore if and how they conceived these diversity as learning barriers.
3. To explore how the recently qualified students navigated the diversity.
4. To publish the findings on navigating diversity for the benefit of future student cohorts.

3.4 Research questions

1. How did students from two distinct groups in this medical speciality perceive the racial and socio-cultural diversity in their learning environment?
2. If, and how did the students conceive the diversity as having hampered their learning?
3. How did the recently qualified, successful students navigate these diversity?

CHAPTER 4. PARADIGM AND METHODOLOGY

4.1 Introduction

A positivist paradigm in research historically has a view of reality that one truth exists and that it can be explained by the direct relation between cause and effect. The epistemological assumptions in this paradigm are that reality can be objectively observed and it is independent of the knower or observer. The positivist methodology has been used in verifying hypotheses, testing probabilities to arrive at associations or a direct cause and effect. Measurement, prediction and generalisability are core methodological aims, hence quantitative methods of data collection tend to be the dominant methods of data collection in this paradigm (Tavakol & Sandars, 2014).

The positivist paradigm was critiqued especially in the fields of Humanities and Social Studies for its notion of a single truth and that reality exists independently of the human mind. This led to the recognition of multiple views of reality held by different people. More attention to the social, emotional and conceptual aspects of truth were given to participants in the dialogue of the research. This addresses the dehumanising aspect of positivism that fails to elucidate the human feelings and conditions that prevail (Bryman, 2008; Bergman et al., 2012; Cohen, Manion & Morrison, 2011).

Following the post-positivist paradigm, there are various approaches of acquiring meaning and knowledge, for example, the interpretivist, constructivist and social constructionist approaches. Commonality in these approaches is that the researcher tries to understand the world that has been lived and experienced by the participants through their representations. In the interpretivists' view, there are natural and social realities, and the researcher logically or rationally figures out what the meaning and realities are that emerges from the data. In the constructivists' view, reality is relative and is based on the multiple views of people. Knowledge is created by construction of ideas in the individual's mind drawing upon previous experiences. In the social constructionist approach, reality is negotiated through multiple lenses and knowledge can be variable as a result of co-constructions amongst the participants and with the researcher through social interactions (Schwandt, 1998; Andrews, 2012; Galbin, 2014).

Social constructionists also view reality as socially defined and subjective, reflecting how people in societies construct their experience of everyday life through understanding what is happening in their world (Hammersley, 1996; Andrews, 2012). Other authors claim that the objective and subjective realities are in fact inter-related in real world societies (Berger & Luckmann, 1966). People interact with the social world and make subjective realities. The social world in turn makes people respond in certain ways that have a potential to become habitual and are cast as norms in the particular societies. They become embedded in routines, thus institutionalised or internalised by the societies. Future generations can experience these means and ways as real, as they are continuously reaffirmed by the actions of others in the society. It is how subjective ideas towards the natural and social world subtly become objectified reality in further generations, and is referred to as the concept of subtle realism.

4.2 The study paradigm

Drawing on the introduction above, the current study required a post-positivist approach to inquiry as its aim was to explore the students' conceptions of racial and socio-cultural diversity in their learning environment. Under the post-positivist paradigm, the researcher understood the reality through a relativist ontology. Using this ontology, the researcher was aware that the reality is subject to change and can become conflicted or confirmed by the interactions of people in the context.

The aim of the study was based on exploring the conceptions of participating students and a social constructionist approach is appropriate. Conceptions can be viewed as end-products of a process of perceptions that have been reviewed, interrogated and are socially constructed (Bueno, 2013; Clarke, Taylor, Devereux, Randall, & Tyler 2013). The process of review or interrogation results in constructions, and these constructions arise from the social interaction between the researcher and research participant. Perceptions refer to ideas that have been shaped by people's attitude and behaviour that are in turn influenced by the environments to which they have been exposed (Bronfenbrenner, 1997).

This study also draws on the co-constructions between participants and their peers during postgraduate training. Co-construction with the researcher was possible as the researcher had insight into the matters under discussion. Although the co-constructions contributed to collective knowledge, it cannot be claimed as value-free due to possible subjectivities involved in the process. A practice of self-awareness was in place and validation of participants' constructs was strengthened by repeating, questioning, clarifying and reiterating their contributions. This was in alignment with a claim that the involvement of a human being in the process of this epistemology is more than just as social beings, as their ability to reflect and adjust to what they conclude as reality is also taken into consideration (Galbin, 2014).

Further attributes of this epistemology were also noted. Whilst there is an acknowledgment of interweaving inherited and social factors in most human experiences, social constructionism concentrates on exploring how social factors influence collective and individual life (Owen, 1995). Van Niekerk (2005) argued that social constructionism can be used in research studies to explore how attitudes and behaviours develop over time during transformation. It can be a useful approach to address challenges of change and bring interventions from socially constructed ideas.

4.3 Methodological implications

In alignment with a social constructionist approach the study employed a qualitative methodology and is descriptive in design to describe the students' conceptions. Data were collected using in-depth interviews with open-ended questions and analysed by coding what was relevant to the research questions and theories, using a deductive approach. Further analysis of what the researcher interpreted as emerging from the data was used, which was an inductive approach. The findings were then formulated using thematic analysis in which similar and contrasting patterns in the data were

recognised. This method facilitated organising the rich, deep and complex data (Bergman et al., 2012). The data from this study had vertical relationships through participants' stages of learning cycles, as well as horizontal relationships across participants within each chronological learning stage. In such deeply interwoven data, thematic analysis helped to condense and organise the data into themes and sub-themes (Braun & Clarke, 2006). It also allowed a comparative analysis of the emerging themes in the two groups of participants (see Section 4.3.1 'Study design') and was therefore deemed suitable for this study. The interpretation of data was either semantic, based on explicit contributions, or latent, where the contributions implied meaning that the researcher constructed. Such interpretations are acknowledged in the data analysis.

4.3.1 Study design

Initially, the study design was thought to use phenomenography, but when the data was reviewed (together with the supervisor and the independent co-analyst), it did not support construction of outcome space (Richardson, 1995; Stenfors-Hayes et al., 2013). The data was highly variable and possibly due to a small number of participants in each group, commonalities and variances were not able to make the structure reliable for conclusion of the phenomenon. The data rather suggested co-constructions of ideas and concepts by the group of peers during their study period, which were then co-constructed with the researcher during the individual interviews. This lead to the decision to use the social constructionist epistemology. However, the data collection method followed the phenomenographic approach to some extent with in-depth, open and probing questions and coding of participant's first order utterances.

The study comprised two groups of participants: one group consisted of former students in the Medical Speciality-A programme who left the formal training programme after failing the exit examination, and the second group were those who had been successful in the examination and qualified as junior specialists during the period 2012 to 2016. The interview focus areas were the schooling years, undergraduate learning and postgraduate studies. The semi-structured open-ended questions addressed 'if and how' they see the racial and socio-cultural diversity as barriers to their learning in their postgraduate study, and additionally how the successful students negotiated the barriers and navigated through their learning. To manage the researcher's bias, self-awareness, reflexivity, internal checking during interviews, member checking and co-analysis of data by an independent researcher were employed.

4.3.2 Sample population

The sample consisted of students previously enrolled in Medical Speciality-A across six universities' academic departments in South Africa. There are seven universities in South Africa, but the department were the researcher worked was excluded for ethical necessities. The total number of participants was twelve with six in each group. The decision on the period was taken to keep the data recent and relevant to the current context. From the first group five and from the second group four agreed to participate in the study.

4.3.3 Sampling strategy

With a qualitative methodology, there are random (probability) and non-random (non-probability) sampling strategies. In probability sampling, the criteria for selections are rather non-specific, but generic, and each participant has an equal chance of being selected in the study. In non-probability sampling the selection criteria focus on specific conditions, thus individuals in the entire population may not have the same chance of being selected. With respect to Medical Speciality-A, the population was the number of students enrolled from 2012 to 2016 (5 years), and those who could be recruited were either students who had left the programme and those who had qualified during this period. The study problem focussed on these particular students and the research question asked for their conceptions. Thus, this study used non-probability sampling that goes with the purposive sampling strategy where the selection is criterion-based or purposive, with the researcher seeking an information-rich data source (Tavakol & Sanders, 2014). With this strategy, all twelve students who met the criteria were invited to participate. Nine agreed to participate, five in the group who had left the programme and four in the group who had qualified.

4.3.4 Sample size

In the first group who had left the programme three students were Black South Africans, one a South African Indian, and one an immigrant Indian. In the second group who had qualified, three were Black and one was Indian.

4.3.5 Inclusion criteria

The first group comprised students who had failed the exit examination one or more times and had reached the end of the contract with their employer, thus left the formal training programme. The second group comprised students recruited on the basis of having passed their exit examination, qualified and had signed a new contract as a junior consultant with the same employer. Both groups had studied under consultant specialists who were racially different from them. 'Race' was taken as proxy at this stage since socio-cultural aspects were not yet known. Gender of the participants was hidden to maintain anonymity, and the gender connotations of the pseudonym used were not necessarily matching the real gender of the participants for the same reason.

4.3.6 Recruitment and enrolment

Email invitations were sent out to each prospective participant with a detailed explanation about the study via their personal email addresses. The response time was one week, and in the absence of a response a follow up phone call was made to check if the email was received. In the case of no participation, alternative participants who met the inclusion criteria were invited. Only volunteers made up the sample, and no-one was pressurised to participate in the study. Participants were not educated by the researcher as they were not from the researcher's university, thus minimising the risk of previous knowledge.

4.3.7 Bias, rigour and credibility

Qualitative research needs to address the issues of bias and subjectivity such as sampling bias, self-report bias, researcher bias, and response-set bias (Akerlind, 2005; Richardson, 1999; Stenfors-Hayes, Hult, & Dahlgren, 2013). Sampling bias was addressed by including all students in the two focus groups without selecting particular students. The fact that the number of Black participants was higher than the Indians and that there were no White participants, was a random occurrence. In both groups, students came from different departments of various universities that helped with reducing sampling bias. All interviews were audio-recorded so that the data were authentic, which minimised researcher bias. The data consisted of participants' personal constructions. To address response-set or self-reported bias, the interviews were conducted with built-in internal checking mechanisms, such as probing to explain the events under discussions or the given constructs in more depth and asking for clarification. To reduce researcher bias in co-construction of realities, the transcripts and coding were shared with the respective participants confirming the quotes that they had contributed. At a later stage, the interpretations of findings were also co-constructed with the individual participant. These were practices of member-checking to address researcher's bias. Analytical bias was dealt with by co-analysis with an independent qualitative researcher. Participants did not agree to a subsequent focus group despite measures prepared to avoid exposure of identity amongst peers such as using an internet chat site with pseudonyms. Thus, their individual constructions could not be verified in the group perspective and they remained as individual contributions.

4.3.8 Dealing with biases during data collection and analysis

As this study relied heavily on the in-depth interviews with the data emanating mainly from the participants' contributions, it was important to elaborate on how the researcher, who was also the interviewer, dealt with biases during the interviews, data analysis and interpretation stages. Various strategies proposed by experienced qualitative researchers were consulted and employed. Bracketing was one of the strategies. Bracketing is described as the researcher being aware of his or her own ideas about the study problem under investigation or what he or she already knows about the participants prior to the investigation, and trying to control one's thoughts, actions and speech during the study (Chan, Fung, & Chien, 2013). However, bracketing oneself completely is not realistic, thus a continuous effort to monitor the bias was more realistic. It was undertaken in this study drawing on the work of Stenfors-Hayes, Hult & Dahlgren (2013). In other words, the researcher strived to hold back her own prejudices to focus fully on 'if and how' the participants constructed meaning of events in their learning journey.

Secondly, triangulation was implemented to avoid bias. Triangulation is a procedure that mixes the data type, collection methods, time, space, and person from which/whom the data were collected Such a diverse coverage of information improved the validity of the study (Olsen, 2004). A strategy of having two contrasting groups of students from various universities in the country supported triangulation.

Probing in four distinct ways, by repeating, elaborating, confirming or clarifying, was one data validity check that was built into the interviews (Stenfors-Hayes et al., 2013). These internal checking methods occurred at various points of the interviews, especially at strategic points, to improve validity. Member checking with the individual participant was another aspect of triangulation.

4.3.9 Self-awareness and reflexivity

The researcher, who had immigrated from a country where there was military intervention, but no racial discrimination, was a student in this speciality from 1993 to 1998. She was educated by White Afrikaans-speaking consultants. It was difficult to deal with a different culture and language, as well as the dynamics of apartheid between Black students and White consultants. Although the researcher did not experience any discrimination personally, it was evident that a few Black peers experienced discrimination as it was the time of declaration of independence and the very beginning of transformation. This may have resulted in the researcher being over-sensitive about 'race-relations'. Having been a consultant dealing with different types of students in this programme, it also provided an opportunity to understand the situation from the consultant's point of view. It therefore took a conscious effort to maintain self-awareness and to reflect constantly while conducting interviews, reading the transcripts, and coding. The role played by the co-analyst was another measure used to manage subjectivity.

During the interviews, the researcher was not passive in listening and taking notes, but took part in thinking and interpreting together with the interviewee. No reflexive personal opinion was provided as the data ended up being co-constructed or negotiated. The researcher, as a consultant educator in the discipline, knew some participants as peers from her own student group and met with some during workshops and congresses. Due to the fact that the community of this discipline is relatively small compared with other clinical disciplines, some information became available through informal interactions amongst people in this discipline. This may have led to assumptions of situations and preconceived ideas about research questions to some extent. However, the researcher remained aware of her own ideas throughout the study. Thus, the open-ended questions were carefully created taking this into consideration. By frequently reminding herself about the potential preconceptions and bias while interviews were being conducted, it helped with framing the questions.

During the analysis of transcripts, the researcher consulted with the respective participant in co-constructing the emerging themes and sub-themes as a common understanding. Afterwards, an independent co-analyst was also consulted to further reduce researcher bias and improve rigour. Such conventions reflect the social constructionist approach of thematic analysis, and co-construction itself provided an improved confidence in the reduced level of bias. This is particularly true as developing themes that may not reside in the data as they could possibly be due to a researcher's prejudices, or preformed theoretical assumptions and personal values attached to the data. Thus, it needed to be treated

with an awareness of such risks to ensure that the themes identified were supported by the participants' quotes or extracts from the transcripts (Harper, 2003).

Thematic analysis allowed the flexibility in which the theoretical framework and research questions guided the formation of sub-themes deductively. It was recognised that the research questions and theoretical framework had to be aligned with and supported by the method of data analysis and interpretation (Braun & Clarke, 2006). By keeping an open mind, the researcher also noted the constructs that were not unfounded by the research questions and theories, thus facilitated relooking at the initial assumptions. These emerging trends were not related to the questions, but held significance in the context of the participant's learning and growth. Revisiting the quotes many times during analysis provided confidence in identifying themes and sub-themes rooted in the data and not imagined by the researcher. When dealing with latent realism, which are meanings that are implied but not explicit, the assumed meaning was discussed and confirmed with the respective participant via email or telephone so that the researcher's personal voice was controlled and the final meaning was co-constructed.

4.3.10 Ethical consideration

Drawing on Lincoln & Guba (1989), this study addressed the ethical dilemmas in the following manner:

- Anonymity and confidentiality: The participants' identity as well as the names of departments and universities was kept anonymous by using pseudonyms and by not mentioning their gender, age and location in any record or any submissions. Interviews were audio-recorded and coded with pseudonyms, then files were transferred to the researcher's personal computer and stored with a password control. Participants did not reveal their identity during the interview. The audio files were coded using pseudonyms, that were also used to file the transcripts, and in the thesis. Confidentiality was offered by having all participants and the researcher sign consent. The researcher also undertook to destroy the data such as voice recordings, transcripts and all other documentation after the thesis has been completed and was published.
- Benefit: It was presumed that findings from the study would benefit the students who are still in the programme as they can learn how to negotiate socio-cultural differences, especially where these may inhibit learning. For some participants, a benefit was personal and conceptual growth from what they constructed in this journey so that it may bring closure. A personal benefit may also be that knowing and discussing their experiences could help their fellow and future students, and could bring them a sense of making a contribution to a good cause.
- Conflict of interest: There was no conflict of interest in this study. Coming from another country, the researcher did not share the racial and socio-cultural background of both the students and the consultants. Having lived and worked in South Africa for more than 20 years, the researcher understood the background of such diversity in the population groups of the country. The researcher's only interest was for the students to enjoy their learning experience

and be successful in this field. If the data had shown that the aforementioned differences existed, but they had not affected the student's learning, then it would have been a great relief and other factors could have been given more attention. If however, it transpired that it had affected the learning then the experiences and constructions of the students who had graduated recently would add value for their peers and provide strategies to overcome such challenges. Either way, it would not result in any personal gain or loss for the researcher.

- Risk: Drawing on Tavakol and Sandars (2014), the risk of beneficence and maleficence existed, thus the researcher refrained from participating in the exit examinations from the time of ethics approval to the end of the study period and this was communicated to the participants. The participants were also informed that they could withdraw from the study at any time.

It was planned that if any student became emotional or anxious during the interviews, the process would be halted temporarily until the student was ready to resume. If a student required or requested counselling, the researcher would refer them to an appropriate counsellor. The impact of the interviews on participants after the study was difficult to predict, but in case any issue arose that relates to the interviews and findings, the researcher had promised to engage with the affected student to help mitigate the problem. Fortunately, no participants expressed such experiences during and after the interviews. All participants mentioned that the interviews had been emotional, and that they did not wish for follow-up interviews. They therefore responded to only follow-up questions and member-checking via phone calls, and in some instances, via emails.

The participants had all left the universities and therefore the study did not require any ethics approval from their individual universities. The study was approved by the Human Research Ethics Committee (HREC) of the Faculty of Health Sciences, University of Cape Town, South Africa, (see Appendix 6).

4.4 Procedure

4.4.1 Data collection

The researcher had travelled to interview some the participants when it was possible. Out of nine interviews, seven were face-to-face and two were through SKYPE due to the distance and availability. One of the SKYPE interviewees was very emotional and provided detailed information. The transcript for this interview was 80 pages long compared to others ranging from 50 to 70 pages. The other SKYPE interviewee was not emotional and provided about the same amount of information as the other face-to-face interviews. It is difficult to judge if the SKYPE interview process was a limitation.

Individual semi-structured interviews were conducted using open-ended questions that were in alignment with the research questions and objectives (Richardson, 1999; Whiting, 2007; Stenfors-Hayes et al., 2013). The research questions and objectives were focussed on whether there were racial and socio-cultural diversity in the learning environment of Medical Speciality-A, how the students saw these diversity, and whether they had influenced their training. The interviews first explored if there

had been experiences of the named diversity in their cycles of learning history at school, and during undergraduate and postgraduate education, and how they conceived the diversity with respect to their learning. The family environment is also important in shaping their perceptions (Bronfenbrenner, 1977), so the background of participants' parents and siblings were explored. This was followed by more probing questions to explore how the participants saw the role of these diversity in their relationships with their peers and consultants, and ultimately in their learning. The questions further unpacked how the participants dealt with the challenges if they had perceived the diversity as difficulties (see Appendix-1 for the sequence of probing questions).

Smith & Osborn (2007) advised that the interview process depended on the admissibility and ability of introspection of the participant who is asked to relive the specific experience. The researcher ensured trust and confidentiality as much as possible between the researcher and the participant. The researcher did not attempt to test a predetermined proposition; rather the aim was to explore the study problem in detail. Flexibility of time, place and manner in which interviews were conducted was ensured to accommodate the needs or preferences of the participant.

The dilemma of interviewer's bias was a challenge during the interviews, especially because the researcher had also been part of the training and assessment of Medical Speciality-A education, thus using an independent interviewer would have been a good alternative. However, as the researcher had significant insight into the matter under exploration, and was thus in a better position to facilitate and frame the next level of inquiry. Moving from descriptions to constructions led to the decision of conducting the interviews herself. This approach was supported by qualitative researchers Akerlind (2005) and Kinnunen, McCartney, Thomas & Murphy (2007). As a precaution, the researcher introduced herself as one of the consultants from the particular department and university and stated that she had been involved in the education and assessment process for a number of years. The participants were also informed that there might be possible bias from her side in the way questions were asked and co-constructions made, and that the researcher would try to be mindful of these as they emerged, but also requested the participants to remind her if they felt her bias anytime. This was recommended by Lincoln and Guba (1989) and Reiter and McConnell (2014) who supported making the bias explicit and using reflexivity to reinforce the relationship of trust at every stage of the inquiry process in order to assure ethical integrity.

After the informed consent, whether the interview would be done face-to-face or via Skype was negotiated and agreed with the participant. The date, time and place were proposed by the participant. Before the interview began, participants were informed about what should not be mentioned in order to maintain anonymity, and if by mistake any traceable identity was mentioned, it would be deleted from the transcripts, which they would receive for their approval. Interviews ranged from 2 to 2.5 hours. Using a digital voice recorder, the interviews were recorded and the audio files were saved under pseudonyms assigned by the researcher.

4.4.2 Transcription

Audio-records were transcribed by an independent certified transcriber. The researcher went through each transcript line-by-line to check against the audios to ensure exactness. This was especially challenging in Skype transcripts as some conversations were not clear for the transcriber. Listening to the audios and checking the lines in transcripts was done 3 times. This exercise was a good foundation for first-time exposure to the nine transcripts for the researcher. After corrections, the transcripts were sent to individual participants via personal emails to check for accuracy in capturing their constructions. All responded with track changes corrections in a few areas and transcripts were revised. This was the second-time engagement for the researcher with the data. After sharing the transcripts with the supervisor and co-analyst who had both signed the confidentiality agreement, additional exploratory questions emerged. To further unpack the conceptions regarding race, social and cultural aspects that participants were exposed to during the learning cycles, questions were asked via emails.

4.4.3 Data analysis

4.4.3.1 Level 1 data analysis: Descriptive analysis

The data analysis and interpretation in this study were guided by six stages of a recursive process suggested by Braun and Clarke (2013). The research wheel methodology described by Samuel (2016), also assisted in preparing the process of analysis and discussion. To align the two guidelines, Braun and Clarke's (2013) steps 1 and 2 as mentioned below are included in the first level of Samuel's (2016) descriptive analysis.

Familiarisation with the data (Step 1):

The transcripts were checked for any disparities against the audio files. Each transcript was then organised into areas of participants' cycle of learning (pre-university, undergraduate study, postgraduate study), family background, and reflections and recommendations. This provided two opportunities for the researcher to become familiar with the data.

Coding (Step 2):

To deal with the rich and complex data collected, the areas related to the research questions and theories applied were coded first, then, through iterative reading, prevalent emergent constructions in one or both groups were coded. Constructs that were not prevalent, but provided by some participants and conceived as important were also coded as emerging items. From this point on, codes were transferred to another document, listing and numbering each participant for traceability tracking for referencing purposes.

Coded data were arranged in tables for three chronological stages of participant's learning: (1) pre-university that includes primary and secondary schooling; (2) undergraduate learning; (3) postgraduate speciality learning; and then two additional tables for (4) family background as micro-environment, and (5) reflections on and recommendations for postgraduate learning. Prevalent codes are shown and indicated by colour (See Appendix 2). Prevalence was indicated when the majority of participants

provided common constructs of 3 out of 5 or more for the group who had left and by 2 or more out of 4 for the group who had qualified. The row reference from this table was then used in the data analysis discussion to substantiate claims of prevalence. Sub-themes were organised into areas where they were subsequently constructed as themes. The numbers of participants sharing each sub-theme is shown in each table (See Appendix 3).

4.4.3.2 Level 2 analysis (constructing themes and sub-themes)

In this level of analysis, Braun and Clarke's (2013) steps 3 and 4 are described below.

Searching for themes (Step 3):

Coded extracts were organised into sub-themes based on their commonalities and variations (See Appendix 3). In this study, a data set is one of the learning stages and the pattern arising in one stage across all participants was identified as a sub-theme. A number of sub-themes that converge towards a phenomenon, convey a message that would form a theme that relates to the research questions or theories applied (Braun & Clarke, 2006). Then a category descriptor that captured the essence of the meaning conveyed in the participants' constructs was considered as a name for the theme.

According to the Braun and Clarke (2006) the question of how much or how frequent the utterance must be found for it to be called a theme is not defined as a fixed rule. The higher frequency or prevalence also does not necessarily infer significance. The recommendation is that the researcher's judgement determines the decisions on what is important, and whether the proposed construct as a theme holds relevance in addressing the questions. The prevalence can be revisited during the refining of themes and sub-themes in an iterative manner (Braun & Clarke, 2006; Guest, MacQueen & Namey, 2011).

The deductive approach was taken when coding areas identified as applicable, or when it related to the theory or research questions, driving the formation of themes. This approach has been referred to as theory and analyst-driven and criticised as having risk of bias from the researcher. As the interview instrument was prepared as semi-structured questions related to the research questions, constructs are likely to be related to these and the deductive approach is therefore inevitable. Through keeping an open mind for any emerging phenomenon not related to the research question, the researcher managed the subjectivity in coding and formulation of sub-themes (Javadi & Zarea, 2016).

In these data, a few constructs were not initially thought of in the research questions. For example, the issue of accent diversity being identified as a barrier, English as academic versus day-to-day used language, the problems with curriculum, and the disorganised structure of formative training programmes, were not initially thought of. Participants across both groups volunteered to share these with the researcher.

On the contrary, during the probing of participants' formative learning during postgraduate study, certain sub-themes emerged by prevalence. For example, responding to the question of how the

relationship with the consultants and peers had been, the lack of mentorship, lack of mediation, peer learning, participation in the situated contexts and CoP, emerged across participants. These codes relate significantly to the theoretical framework and were thus coded as sub-themes.

Reviewing themes (Step 4):

To maintain rigour, the transcripts were read recursively, codes were re-checked and sub-themes and themes were revisited (Braun & Clarke, 2012; Clarke & Braun, 2013). The researcher then reflected on whether they highlight the important message, if the research questions had been covered, and if they could be related to the theoretical framework. The arrangement of themes and sub-themes were reviewed to determine if the sub-themes needed to be combined or split, and to show vertical and horizontal relationships between them (See section 5.5 'Inter-connection of themes').

4.4.3.3 Level 3 analysis (Evaluation and discussion)

Evaluation and discussion reflected Steps 5 and 6 from the work of Braun and Clarke (2013) as described below and incorporated Level 3 analysis of Samuel (2016), which included analytical discussion of each sub-theme and related them back to the theories and research questions.

Revisiting of naming the themes (Step 5):

The sub-themes and themes covering data sets were rearranged to ensure that they made sense and were logical. The researcher then revisited names for each theme to accommodate the sub-themes in the relevant data parts, and the relationships within and across data. The names were overarching but hopefully concise and informative.

Discussion of sub-themes and themes (Step 6):

In writing up the findings, the aim was to present a coherent discussion of the sub-themes under each theme, using extracts or quotes from the transcripts as evidence. Concurring or contrasting patterns were discussed and the researcher made personal comments explicit. In Chapter 5 that follows, the analytical narratives provided by the researcher supported by semantic or latent data extracts were weaved to present a coherent and persuasive interpretative account of the data. A diagram showing the relationships between the themes is provided. This section is concluded by linking back or contextualising sub-themes to the existing literature, theories applied and research questions (Samuel, 2016).

CHAPTER 5: DATA ANALYSIS AND DISCUSSION

Data analysis in this study was mainly deductive as the interview questions had been aligned to the research questions and were underpinned by a theoretical framework. Some sub-themes emerged from participants in both groups, and in such cases, they were indicated as inductive analysis. The sub-themes were built by semantic analysis through the prevalence of coding from explicit discourses contained in the transcripts (see section 4.4.3. 'Data analysis'), together with a few latent and implicit constructs. The epistemological approach throughout had been social constructionism.

Theme 1: Racial and socio-cultural differences as barriers in learning; sub-themes were: constructing 'race', 'language', 'culture', and 'feeling excluded by socio-economic status' as barriers to learning.

Theme 2: Relationships in the learning environment shaping learning; sub-themes were: 'relationships in the early learning stage', 'relationships in undergraduate medicine', and 'relationships in the postgraduate learning stage of speciality training'.

Theme 3: Challenges in the learning process; sub-themes were: 'lack of curricular clarity', and 'lack of a formative learning structure'.

Theme 4: Resilience; sub-themes were: 'capacity for adaption', and 'the ways in which resilience has been shaped by the micro- and macro-environments'.

The pseudonyms in the group who had left the programme were: Pinky is a South African Indian, Lucille, Barbara, Phillip and Thomas are all Black South Africans, and those in the group who had qualified Daisy, Mary and Theresa are all Black South Africans and Lisa who is a South African Indian. Gender identities were also anonymised, thus the names and personal pronouns he or she may not infer the real gender of the participants.

The layout of this thesis has followed dissertation guidelines from UCT: Faculty of Health Sciences (2017) supplemented with Samuel (2016). Where reference was made to an analysis of constructs relating to several participants, it was recorded in a table (See Appendix 2) and referenced specifically to a row (App2/Row) that in turn referenced the coding on the transcripts. Where inclusion of a particularly rich and relevant extract was too long and would have disturbed the flow of the discussion, it was placed in a separate document rather than exclude it (See Appendix 4) and referenced in the discussion, (for instance Extract 43, Appendix 4). It should be noted that in the discussion, the term 'peers' was used to refer to all students in the speciality across all the years of training to avoid confusion between junior and senior peers. Where relevant, the participant specified this distinction.

Themes and sub-themes are discussed below and a detailed analysis of findings with links to the literature review, theoretical framework, and research questions are described.

5.1. Theme 1: Racial and socio-cultural differences as barriers in learning

The term "differences" instead of diversity was used in this theme based on the prevalent pattern of conceiving diversity as differences in seven of the nine participants. Their conceptions were underpinned by their construct that they were treated differently from peers who were racially and socio-culturally different from them.

5.1.1 Participants' constructions of 'race', 'ethnicity', 'social identity' and 'culture'

Participants from both groups constructed 'race' as the biological attribute such as skin colour (as Black, White, and Coloured), and some added the ancestral origin (African, Caucasian, Indian, Asian and so on). They believe that ethnicity relates to sub-groups under one race with different traditions, languages or may come from different locations. Pinky referred to the 'social identity' as being from the time of apartheid. She stated that "previously there were associations that if you are Black or Indian, you are lower or middle social class and Whites in the upper class, but nowadays it is becoming mixed" (Extract 62, Appendix 4). She acknowledged that this has changed to some extent in the post-apartheid era as social status is no longer directly related to race. Daisy and Theresa however, believed that the association of race and social status from apartheid era is still visible for the majority of groups. Theresa explained: "Race is based on skin colour and social status. Because of apartheid most Blacks are poor, and still it is like this." (Extract 64 and Extract 65, Appendix 4).

All participants acknowledged culture as related to family traditions rooted in race or ethnicity, but they also realised that different cultures exist in the school or work place. Daisy and Theresa shared the concept that an individual's original culture may change after being immersed in the different social cultures at schools and work environments, and stated that other cultures could be adapted or integrated. Daisy added that "you may find your original culture of your root does not match with the culture of study or work place you are having to immerse in." People may thus try to adapt to them for a temporary period if necessary (Extract 64). Mary shared similar sentiments of culture as mentioned by Daisy and Mary believed that "the problem is when people bring their racial or ethnic culture to work" (Extract 66, Appendix 4). It implies that for her, people should not mix or impose their original culture with the cultures they find at the work place. Lucille conceived 'culture' as related to one's race and ethnicity and that people from the same race or ethnicity tend to socialise together, but she also believed that social culture exists that refers to how people behave in certain ways. She gave an example of "personality, the way people behave, you know, you've got gays and whatever all that, and the way you conduct yourself, you know, and your heart" and she mentioned two examples of being either approachable at work or reserved (Extract 61, Appendix 4). Barbara's construction was that people identify each other racially as related to their country of origin and declared that "race is about our origin, where we come from". She gave the example that people coming from India may be treated differently from the Indians from South Africa because of differences in the two countries' socio-economic levels. (Extract 63, Appendix 4). Lisa also felt that race was indicated by skin colour, and

that social identity was strongly related to race in South Africa. She further explained that “culture is related to race so Indians have certain things they must do, and so as Jews and Afrikaans, so sometimes it also relates to religion” (Extract 67, Appendix 4).

5.1.2 Constructing ‘race’ as a barrier in learning

The racial and socio-cultural background of the participants in both groups and the consultants they mentioned in their interviews were an important factor. In the group who had left the programme, three were Black South Africans, one Hindu Indian South African and one Muslim Indian who immigrated to South Africa during childhood. The consultants involved in educating the participants in the first group were Afrikaans and English-speaking White South Africans, and English-speaking Indian South Africans. There was also one African Consultant from another African country and one junior South African Black consultant, although neither were directly involved in the educational programme.

In the group who had qualified, participants were three Black South Africans and one Hindu Indian South African. Their consultants were Afrikaans-speaking White South Africans, English-speaking Indian South Africans, and one White person from Europe. From the perspective of racial and social-cultural differences, participants constructed the different aspects of language, culture and social identity as having influenced their learning, and these constituted the sub-themes for this section.

Participants in both groups constructed the experiences of racial preferences as a factor that hampered their learning, with the exception of Lisa and Mary (App2/30). This was based on their experiences of being treated differently by their White consultants than their White peers.

The perception of Black participants was that there was conjecture by their White consultants that the Black registrars were not academically prepared or smart enough to be successful in the programme. as constructed as racism by Daisy. “So, these assumptions based on race and skin colour, for me is racism.” (See a more detailed extract from transcript Extract 43, Appendix 4.) Other Black registrars also mentioned being underrated due to assumptions by the White consultants and had to make an impression early in the programme to establish themselves as being ‘smart’, so as to have a positive learning experience (App2/19). Lucille stated in this extract that she was even drawn to resent her own racial identity.

> *I think generally, the nature of the registrar programme is that if you are a Black person, it’s a times two. Meaning you need to work two times harder than other races, that’s what I’ve realised. And another thing, in terms of cooperation amongst your peers, in the registrar programme there’s always that favouritism and you also need to be very submissive. The moment you express your unhappiness or try to bring things in perspective, it becomes a problem to other people. And what I’ve realised, it’s not an easy journey. Especially if you are Black. Being Black, I was really resenting my race to be honest, because things were even like*

before you even perform you are underrated. So, you always have to work two times harder than any other person.

Extract 1

Early on in his education Phillip believed that one should maintain self-identity, beliefs and ways of living, and not be transformed by hegemonic beliefs and ways, and he stated "I believe never to succumb to being demeaned by someone, you know for who you are… for the colour, for the way you talk…that's your own identity" (Extract 44, Appendix 4). During his postgraduate studies Phillip felt that he was treated differently as Indian registrars because of his race and reported that his Black peers had the same belief (Extract 45, Appendix 4). In contrast, Mary had not constructed differential treatment as being due to 'race' and mentioned "I think it was just personality, because when you then interact with them you find that it's not that they have something against you."

In summary, participants from both groups felt that they had experienced differential treatment due to race. Mary and Lisa from the group who had qualified felt that it was due to the personality of the consultants. Whilst some participants felt that this was a barrier to learning, others were able to overcome the differential treatment and qualify (App2/17/19).

5.1.3 Constructing 'language' as a barrier in learning

Language was constructed as a barrier to learning by most participants in both groups. The exceptions were Lisa who was an Indian English speaker who studied at a university where English was the only language and Mary, who although being Black and an African language speaker, did not find English or Afrikaans language as a barrier to learning. (App2/14/15/18/30/64). In this sub-theme, the constructions about language diversity were taken from the participants' previous learning stages through to their postgraduate specialist training. In this respect, the constructions were of multiple layers: language by racial group, language by accent and language by proficiency.

Language racial groups consisted of Afrikaans-speaking Whites, Indians speaking English with their particular accent, African language speakers speaking English with their accents, and foreigners who speak their national languages. The learning activities involved daily practices in the profession such as writing reports in English, but ad hoc events such as discussions on patient results and solving clinical problems, were presented in the consultant's language preference.

Pinky was immersed in an environment that was predominantly Afrikaans for postgraduate education and stated: "I felt excluded because of the language barrier, firstly, as I wasn't fluent in Afrikaans, even though I understand the language" and mentioned how language differentiated the students and gave preference to some (Extract 46, Appendix 4). Similarly, Daisy described how she also felt excluded in her undergraduate studies due to language in both formal and informal learning.

Yes. So now, I now was exposed in an Afrikaans environment. The language in that area was predominantly Afrikaans. Although English was there, it was predominantly Afrikaans. I was thrown completely out of my culture. Well, mainly it was through the language used during formal or informal learning sessions. Language sort of over-rule or dominated us by exclusion so we were already disadvantaged. The rest is taken after the fact that now we were lost in their discussion. So, we appeared as if we did not know anything then we became outsiders or less well prepared.

Extract 2

During the early phase of transformation, some predominantly Afrikaans universities declared that course offering language would be bi-lingual (English and Afrikaans). However, most lectures and text books remained in Afrikaans. It was difficult for students from different language groups to change over a short period, as illustrated in this next extract by Theresa on how she had to adapt to learning in Afrikaans.

Absolutely it was difficult. I think for me it was a shocker. Yes, it was a huge shocker. Not necessarily because it was a different language. But the fact was the expectation was that I had to know Afrikaans for me to learn medicine. So, it was extremely challenging. But I mean we had to adapt. But the thing is, in our earlier year, I think first year, we had English classes. It was a varsity where it was supposed to be bilingual. So, we had English and Afrikaans classes. But sometimes we'd find because all teachers were Afrikaans-speaking, they would bring for example slides that are written in Afrikaans and lecture them in English.

Extract 3

Lecturers were bi-lingual thus it was possible for the students to approach the lecturers for help in explaining concepts in English, but some participants found that their lecturers were difficult to approach (App2/17/18). Theresa mentioned: "It was not easy for us to communicate with the lecturers. They just came in and gave lectures. After the lecture, some White guys would go to the lecturer and ask a few things, but in Afrikaans and some would follow the lecturers to their offices" (Extract 48, Appendix 4). Despite the challenges, all of them overcame the Afrikaans language barrier in their undergraduate training (Pinky, Lucille. Barbara, and Daisy, App2/16) by various means such as peer support with those who shared the language barrier, self-directed searching, learning from English version text books and also learning Afrikaans from interacting with peers.

Proficiency in the English language was necessary to develop the scientific reading and writing, presentation and communication skills that are required for the profession. In postgraduate training, the formal learning platforms for day-to-day practice were in English. The impact was greater during informal discussions, or when discussing and problem-solving cases. In a postgraduate context, informal discussions are more important than formal activities since these are the platforms where the

consultants and registrars identify problems in the service delivery and with patient results and find solutions together. These are the moments where students learn by interacting and engaging with each other, or in a group. Some participants experienced language barriers with Afrikaans during informal discussions where one or more consultants were speaking Afrikaans (App2/31).

Participants had to immerse in a learning environment where consultants and some peers were mainly Afrikaans-speaking (App2/28). Theresa had the experience of being treated differently by an Afrikaans-speaking consultant who was also the educational coordinator and stated "the White Afrikaans peers got more info from the consultants because they speak the language and also assumption was that they came with better or higher level of basic knowledge".

Understanding some consultants' accents in English was also a barrier for some who were not native English speakers, particularly for those in the group who had left (App2/29). Lucille had difficulties adapting at a predominantly Indian university where English was the medium of education, and she mentioned "the way Indians speak I couldn't understand" and felt this as culture shock (Extract 47, Appendix 4).

In a further layer of language by proficiency, Daisy found that she was not able to express herself in English as fast as expected from the bi-lingual and English-speaking lecturers, and in comparison with her first language English peers, she stated: "I talked slowly as I had to translate English to vernacular and back there again". (Extract 43, Appendix 4). She felt that her White peers, who could speak English fluently, created a good impression with the lecturer, whilst she felt disadvantaged due to her slowness in responding to question in English. Registrars are often requested to abstract an important part of their presentation in a few lines to assess their ability to summarise salient issues. These activities automatically become differentiating points between English for first language speakers and the others. Lucille stated quite adamantly "I really told them that I'm not there to impress anyone with my accent. This is how I'm gonna speak" and went on to mention that: "The one Black she used to speak English like very well, and that one Black used to associate with those White people and Indians, so she was better than others, us."

There were tutors from the same background as students who facilitated learning in smaller groups in undergraduate medicine, who helped by explaining difficult concepts in their home language. Lucille mentioned: "We used to have Black people to mentor us. They were a mixture, Zulu and Sotho. We were communicating with English." Student tutor programmes, peer support groups and extended curriculum programmes were contributors in helping students to overcome language barriers in the undergraduate study. In contrast, during postgraduate studies with less students, peer support was difficult or not available not available. With the small number of registrars and consultants, it was difficult to form relationships. The participants' conception of language barriers in the postgraduate programme was stronger and more evident than when they were undergraduates.

In summary, what emerged from the data is that participants from both groups managed to overcome the language issues in their undergraduate medicine programme regarding the use of Afrikaans or English as their second language (App2/16). They attributed this success to the support of peers from the same background, senior students and team work with peers. Participants also constructed their success in the undergraduate programme as their ability to seek alternative resources in English. During postgraduate training however, Black participants from both groups felt that they were slow in answering the questions in the group discussions, and they attributed this to the language. The peers who were the first language English speakers dominated the discussions whilst they were still formulating their answers. One participant in the group who had left also shared that the choice of language excluded her from the informal discussions and restricted the learning opportunities. Black participants in the group who left felt that they were treated differently based on how well they spoke and pronounced English.

5.1.4 Constructing 'culture' as a barrier in learning

Culture refers to traditional ways and practices in an ethnic group of a specific race, but in social terms, it may refer to behaviour and norms found in human societies (Macionis & Gerber, 2011). The issue of diversity and multiplicity in South Africa in the face of people's rapid developments in ideas and identities in the post-apartheid era was discussed by Dolby (2011) as posing challenges in social and educational systems. Dolby highlights the hybrid nature of racial and cultural identities and how it is interlinked with genetic and cultural roots to socially constructed modern culture in South Africa, and how this led to tension between their development and institutional policies. In this subtheme, the culture described by the participants relates to their racial identities as being Black or Indian. Another dimension to culture in this study is the culture of the academic departments led by the consultants.

Participants experienced being underrated by the perceived assumptions from White consultants in both undergraduate and postgraduate studies. The assumption was that the Black students lacked aptitude and were not prepared for the programme compared to their White and Indian counterparts. These assumptions were evident in how the consultants treated the Black students differently in ward rounds and small group sessions (App2/52/57). It resulted in students experiencing the culture and CoP as not supportive of learning for all racial groups, as Lucille stated:

> *In PG, I strongly believe I was treated badly because I was Black. It was about power from the Indians to Black. For example, they refused to see that their training programme, their department had a problem, but they just blamed us as we were Black we were not good enough, so we were not even allowed to write exam. They did not treat all registrars the same with transparency (Extract 49, Appendix 4).*
>
> Extract 4

Another aspect was that some participants highlighted the issue of power struggles amongst the consultants through exerting control over the registrars (App2/55). This led them to becoming divided and resulted in a loss of direction in their learning, as mentioned by Barbara in the next extract.

> *For me, I think there was no coherence in the department amongst the HOD and consultants, amongst the registrars. It was not necessarily (a) race thing but it was more like personalities and power struggles. So, the focus became these and not the training and learning. At the end, we all suffered.*
>
> Extract 5

At an individual level, Pinky experienced being ridiculed by the consultants and peers when they gossiped about her for her ways of presenting at the academic sessions and her study styles. She perceived this as a culture of not being supportive to her learning as described in this extract.

> *… I think just the negativity of the people around. Because there were a few people that just kept on making bad remarks about… about my conduct, about the way I was doing things, the way I was doing my work and presentations. It was all negative all the time, and in retrospect I thought being in an academic setup was for senior consultants to uplift the junior consultants and students to ensure that the final product was to produce a safe practicing specialist. But the culture of gossip was rather depriving the development.*
>
> Extract 6

Lucille (App2/73), Barbara, Phillip and Theresa (App2/66) experienced the culture from the consultants who demanded submissiveness from them. Phillip felt it was the domineering culture of the department and described it as a "culture of dictatorship". They perceived this as a sentiment of belittling or undermining them, as constructed by Lucille in this extract.

> *You know as a Registrar the way I see it, especially when you are in this programme, you shouldn't talk back to your consultants. And the problem is, talking back as if you are naughty. Sometimes you must not disagree with them. You should agree to everything that they say. Which is not right, you see. …so the culture for the registrars is, you must just keep quiet whether it's good or bad. You have to swallow it. That's the culture. So, the only reason why those ones were getting along is, because they never used to say anything. So, the problem is, the moment you say what, then it's the end of your road.*
>
> Extract 7

A departmental culture was experienced by some participants that was more focussed on service delivery, instead of critically looking into how training and learning have been implemented (App2/38). Thomas constructed that as follows: "They weren't trying to strive for academic excellence. They weren't trying to make it a culture of learning." (Extract 50, Appendix 4).

In summary, participants in both groups constructed departmental cultures of not being supportive to learning and thereby inhibiting the development of a CoP where registrars could legitimately participate and learn the cultural tools of the profession. Peers were divided through power exertions, and consultants expected obedience or submissiveness through a culture of authoritarianism. The culture of assumptions about the inferiority of Black registrars was not supportive of their learning. The departments were focussed on service delivery and this imposed a self-learning culture on the registrars with very little mentoring or supervision. The participants experienced some or all of these factors as detrimental to their learning. In the group who had qualified, different approaches to adaptation and finding alternative solutions were evident when faced with such adversities.

5. 1.5 Constructing 'feeling excluded' by socio-economic status

During postgraduate training, all participants were medical practitioners who had completed at least two years in general practice. Some had worked for a considerable number of years before deciding to specialise further and had a different social status from that in the undergraduate years. Daisy had practiced for more than 10 years and Theresa for 5 years. One of the implications of this variation in years as a professional is differing social and economic status. Those who joined the studies straight from community service had not accumulated wealth as much as those who had been in general practice for years. Family status was also different amongst participants as some were married with children, and others remained single. These differences were regardless of their racial denominations and formed a basis of their social identities. Differences in the social identities posed challenges in how they related to each other and to the consultants. Some felt they were treated differently due to how they were seen by the others socially and this hindered a positive learning environment (App2/70).

Thomas mentioned how people in his department cared about each other's social status such as what the spouses earned, what kind of house and car they owned, and how well connected they were to important political figures (App2/63). He constructed this as a materialistic culture not focussed on education and learning. Thomas also felt uncomfortable in the department as he was the only unmarried person with no children. He related that: "some of the others had very affluent [spouses] so they would be respected more, definitely a lot more respect for if you're married, and kids" (Extract 50, Appendix 4). He constructed that others abused his single status as having the least family responsibilities, and as such that he was given more on-call duties than the others, leaving less time to study. Pinky also felt she was treated as different for not being married and not children. amongst her peers who were all married, as she mentions in this extract:

> *In the PG years, I did feel excluded sometimes as majority of my colleagues were married with children and I was single for all the time that I was a Registrar. So, some of the conversations I could not relate to.*
>
> Extract 8

In wrapping up, some of the participants constructed social identities being significantly different in the postgraduate environment and that they mentioned feeling excluded and treated differently by peers and consultants. They constructed that this was due to their marital or socio-economic status, and that it was as a barrier in participating in the CoP (App2/55).

In concluding Theme 1: 'Racial and socio-cultural differences as barriers to learning', participants across the groups experienced being treated differently by consultants and senior registrars because of their race, socio-cultural and economic status (App2/70), but they had varying opinions on how the differences impacted on their learning. Some interpreted their socio-cultural experiences as being related to race, but others associated it with people's personality and culture, formalised by the people's behaviour and personalities. The striking phenomenon is that all participants in the group who had left felt that being treating differently along with challenges in relationships with consultants, affected their learning negatively (App2/58). In contrast, two out of four in the group who had qualified, Lisa and Mary, did not perceive the racial and socio-cultural differences as a deterrence to their learning. The other two in this group, Daisy and Theresa, perceived the differences as inhibiting their learning and growth, but they were able to overcome the impediments by various strategies.

5.2. Theme 2: Relationships in the learning environment shaping learning

Sub-themes are: relationships in the early learning stage; relationships in undergraduate medicine; and relationships in the postgraduate learning stage of speciality training. The experiences in each stage of the participants' development are analysed with respect to how it influenced their learning in the post-graduate environment.

5.2.1 Relationships in the early learning stage

Findings that emerged from both the groups was that most participants had no difficulty in forming strong relationships with peers from the same background and diverse teachers at school, and they found that this factor had supported their learning and growth (App2/1). Lucille related:

> *We were in a boarding school, most of the time we used to study together. Back then I liked studying in group because it was more convenient and we used to share information because we were always together. But you know, it changed with the circumstances as you grow up. You go different ways, different priorities. But I enjoy studying in a group. We were more of a community and the teachers were very passionate about their work and we were amongst the top achieving schools in that region in the eighties.*
>
> Extract 9

They conceived these interactions as having been helpful for their learning and growth. Pinky, Lisa, and Barbara (all Indian) attended single race schools with the teachers and peers from the same religious, cultural and traditional background and their relationships remained within the boundaries

until they went to university (App3/4), although Barbara had an opportunity to immerse herself fully in diversity at her secondary school and mentioned: “the class was primarily White… and there were very few Indians.

Thomas had followed his parents into exile and had been immersed into an international culture studying A-Levels. His teachers and peers were from diverse backgrounds and he constructed this experience as fulfilling, supportive and far reaching. He said:

> *I had a very cosmopolitan environment and I mixed with people of all races from a very young age in school, and also my teachers were always of different races. Secondary school, same neighbouring country as well, but also a private school based on the Cambridge system, so it was very still geared around the British educational system, and very cosmopolitan as well. All our teachers were foreigners. Principal was South African. Some of our teachers were South African, a lot of British teachers, some American teachers, so it was diverse and I interacted very well.*
> Extract 10

Daisy mentioned that she was able to form relationships with her secondary school teachers from diverse backgrounds, even though they spoke a different language. Mary discussed how she was able to form a relationship with from diverse backgrounds and peers through sports and extramural activities, despite not initially speaking the same language.

> *We were multiracial so most of the time and socially we would mostly speak English. It was first a bit difficult because I had to translate all the time, but with time became used to it especially when we use English with other friends during soccer and sports. By the time I went to university, I think I just spoke English without needing to translate.*
> Extract 11

Theresa was able to see the differences between her and the teachers from diverse backgrounds and peers in a positive light, as she recounted: “I think fortunately I got exposed to people from all continents, and then I learnt to look at the positive side of people”.

In summary of the sub-theme ‘relationships in the early learning stage’, all of the participants had a loving, caring and good relationship with their family and teachers that supported their learning through the school years. This contributed in their self-confidence and success to enter the medical school (App2/9). Further analyses on how the family micro-environment and learning meso- and macro-environments shaped participant’s capacity to deal with diversity is discussed in detail in Theme 4: ‘Resilience’ (5.4).

5.2.2 Relationships in undergraduate medicine

The majority of the participants had to move far away from home to attend medical schools and were exposed to socio-cultural diversity. Participants managed to form relationships in undergraduate medicine studies with peers and learn in supportive group discussions, although they were mostly with peers of the same background. Lucille related in the following extract:

> *For medicine I went to the university in a faraway province where mainly Black people and Black lecturers predominate. It was very nice. I managed through team work, extra classes and more dedication. We decided to team up as Black students and Black tutors. Ja, because they were more understanding.*
>
> Extract 12

Lucille mentioned being more comfortable forming relationships with Black tutors "because when you go to an Indian tutor sometimes they feel like they don't understand why you are slow". Whilst Phillip was also exposed to a diversity of peers as mentioned in this next extract, he socialised mainly with people from his own race.

> *The peers, we had Indian, we had one White student, and then Blacks. The Blacks and the Indians, we studied together with some of them. We had group discussions with some of them. So, the only time you would feel that you were with the other Blacks was when you're eating or when you're socialising. Otherwise when it came to interacting, class activities, studying, you know group studies, we were mixed.*
>
> Extract 13

Phillip also stated that "from the word go they told us, the programme is problem-based learning" (App2/24). He believed that this model of training in his undergraduate study promoted peer learning and working in teams.

Thomas left South Africa at an early age and had studied outside South Africa at international schools, and had no prior exposure to diversity in South African. Having been exposed to the international schooling system gave him the advantage of being better prepared academically than his South African Black peers. Thomas found that this created "animosities between Black people, because they feel that just because they're from private school they're allowed to finish in six years", whilst students that came from township schools were put into an extended programme for a year extending their studies to seven years. However, Thomas found that a judgement of being academically inferior was more pronounced in the clinical years, and during the preclinical years his experience with the lecturers and peers was much better. He thought that this may be because the teaching in the preclinical years was not as intimate and personal as in clinical training years.

In South Africa, a student can be accepted into a medical degree programme after having finished a BSc degree, provided that the student meets the requirements in the grades of related subjects in first year medicine such as biochemistry, chemistry, physics, physiology, and anatomy. From the Black students who qualified, Daisy went to medical school after graduating with a BSc degree. She had experienced teachers from diverse backgrounds in the BSc course for the first time:

> *For the first time actually, I was being taught by teachers different from me. Look, my first English language teacher was South African White, but we had expatriate teachers, White teachers coming from mainly the US and we had British teachers teaching in the BSc programme.*
>
> Extract 14

Daisy went on to mention that “It was always good learning from one another. Always interesting to learn from your lecturers and from your tutors as well.” and had constructed a positive experience from her interactions during her BSc study. Daisy then enrolled into a predominantly Afrikaans medical school and shared her experience as “I was uprooted from my usual comfort zone, so I had now to adjust as a new person in a new environment”.

Mary also found the cross-cultural experience with the diverse lecturers in her undergraduate study positive and contributory towards her growth. She believed that the problem-based learning curriculum promoted interactions with the clinical teachers at the hospital:

> *I mean the clinicians even though they were not our formal tutors you know they would show interest. But I think obviously you know, as a student you get to observe and learn what they do… for us it’s mainly self-directed learning, you know because we were using the problem-based method. So, if you, like for an example I would go to see patients at night when they are doing the evening rounds, and offer to take bloods, all those things you know. They were very responsive and if you’re there they will definitely teach you.*
>
> Extract 15

Theresa mentioned that “we used expertise or guidance of guys who were one class ahead of us”, as the same race senior students understood the difficulties facing Black students having to prove themselves.

The Indian participants had all attended single race schools. Pinky mentioned that she stayed in the university residence and was exposed to diverse hostel mates from different cultures and had opportunities of forming relationships with them:

> *I stayed at the residence, the student’s residence. So, there were people…that I studied with, or the people that I stayed with at residence were in the same class as I am and they were all from different backgrounds. Also, we automatically become a group because we stayed together, travelled together, did everything together.*

Extract 16

Barbara also related how this was her first exposure to diversity: “So this university was again a purely White university, and the majority of the people were actually Afrikaans-speaking.” She mentioned that she found the people very accepting.

Lisa was attending a medical university with diverse races that were well integrated, and she mentioned that “there was a lot of interaction with all the races, and we sort of learned from each other”, although her friends were from the same background. Lisa presented herself as someone who is introvert and found it difficult to socialise, especially with peers from a different race. She found studying alone to be preferable as it helped her to focus, to direct herself in how proceed for deep learning during her school and undergraduate years. She thus constructed learning as an individual venture, as she related: “So, I became a doctor. Practically taught myself, and sometimes by learning from peers.” She believed strongly that her learning and progress was her own responsibility it was demonstrated in the success of her postgraduate studies.

In summary of this sub-theme ‘relationships in undergraduate medicine’, the participants’ constructions reflected the shift from the strong family and teacher support at school to undergraduate training, where forming relationships with peers and lecturers of greater diversity occurred. Participants found group learning, having tutorials and the problem-based learning curriculum as opposed to didactic lectures had been helpful as they promoted forming relationships with peers and tutors.

5.2.3 Relationships in postgraduate learning stage of speciality training

In the researcher’s construction after having been a lecturer and consultant educator for many years, contextual factors in a postgraduate environment are significantly different than in the undergraduate environment. Relationships changed as roles changed from being students and lecturers to being registrars and consultants within a speciality. The power dynamics became a relevant factor in the relationships. Senior registrars were only a few years away from becoming consultants, and both shared the same service work and teaching environment. The students in postgraduate education saw themselves as ‘professionals’ and may have come with preconceived ideas from previously learnt knowledge and skills. Furthermore, their need to be recognised as professionals became relevant.

Whilst participants’ construction was that one needed guidance of a MKO in learning this speciality (App2/56), there were reports of a lack of mentorship and supervision (App2/41/42). The participants in the group who had left suggested that there were factors that made initiating contact or approaching the consultants difficult, such as that consultants appeared to lack interest in the registrars’ learning process (App2/45). The constructs imply feelings of discomfort that made the interactions difficult, and power play by the consultants amongst themselves as well as towards the registrars, all seem to have contributed to the difficulties in approaching a particular consultant over another (App2/58). Daisy, Mary and Theresa from the qualified group reported having to resort to self-learning and assistance

from outside due to a lack of the consultants' supervision (App2/44). Those in the group who had left seemed to have been constrained in their learning due to a lack of peer support and an inability to manage self-learning.

Participants in the group who had left mentioned that they felt inhibited to initiate approaching consultants. The reasons were not constructed explicitly, although there were constructs that implied that the lack of relationships made the interactions difficult. The culture in the department regarding contact with the consultants was that registrars should approach them if they needed assistance, and they did not see a need to sit with them at postgraduate level. (App2/74). However, participants in both groups felt they needed regular supervision and mentoring (App2/58). This tension of disjointed expectations between the novice registrars and consultants persisted. This lack of relationships between registrars and consultants meant that open and honest discussions could not take place. Daisy explained: "I think because we had no relationship, and that was identified as a shortcoming in our training" (Extract 51, Appendix 4).

A fear of victimisation and distrust was expressed by most participants, which deterred forming relationships with consultants (App2/54). Participants found themselves authorising patient results for the entire period of the programme as was required for service provision, but this was not under supervision or monitoring by the consultants. There was expected to be supervision in the daily service provision for the registrars by means of constructive engagement with the consultants, to identify gaps and solutions to problems. However, such opportunities were lacking for participants in both groups (App2/42). For example, Phillip described that: "we pretty much pushed the numbers, that's what we did, we pushed the numbers" (Extract 52, Appendix 4).

The qualified participants recommended strategies of being self-motivated, using initiative and self-directed learning to overcome the lack of supervision and monitoring (App2/62). Although these reflect good attributes in any learning situation, reliance on them became more critical for the registrars. They warned against a confrontational approach in dealing with consultants as Thomas (qualified) advised "we need to not always indulge in every single argument we can have, and we need to choose our battles, and I think that's the advice I'd give to anyone". (App2/75). Although these contextual factors were shared between the two groups, participants in the group who qualified (Lisa, Theresa) felt they were fortunate that they were offered mentorships by the HOD (Lisa) and one external consultant (Theresa) with whom they had a good relationship that facilitated their learning. Two Black participants (Daisy, Mary) in the same group were not offered a mentorship, but they were able to self-initiate the engagement with a White consultant from their department. They found that when they were able to identify specific problems in their service work and approach the consultant, she was willing to assist them, and it was possible to discuss the solutions with her (App2/43).

Study-buddy, peer and inter-institutional collaborations

In the undergraduate years participants in both groups had positive experiences in interacting with the diverse lecturers and peers (App2/20). Some participants developed cross-cultural abilities (in the case of Pinky, Thomas and Theresa) even though the major collaborations they had were with peers within the same race groups.

Participants in the group who had left were unable to collaborate or form relationships with their peers within or outside their departments and did not receive support from each other (App2/58). Meanwhile, Daisy, Mary and Theresa from the group who had qualified were able to form relationships with peers from their own departments, and other institutions that enabled them to share learning approaches and study skills, although the peers were from the same racial background (App2/69). Participants from the group who had left, mentioned that they felt divided by differential treatment by the consultants and that it caused conflict amongst peers (App2/57). They constructed that this led to an inability to establish study-buddy relationships or collaborate with peers, and thus could not find solutions as a team. Lucille's response is an example:

> *… everyone used to do her own thing. Just sit and study. There was no sharing. You wouldn't even know that this one had something like this. We were just living in separate worlds.*
> Interviewer: Were there any peer group discussions?
> *Lucille: No, never. In fact, when you do a presentation, consultants will be criticising that specific group. Like that presentation was just useless…etc and peers started talking the same to each other.*
> Extract 17

In contrast, Daisy and Mary who both had qualified, each had a study-buddy in their student years, and together they realised that they needed teamwork. They both had study partners from other universities who were also preparing for the exit exam and they found that this cooperation was helpful with their learning, especially to consolidate their learning approaches, as Daisy relates in this extract:

> *Buddy studying helped us a lot. We ended up even teaming up with somebody from another university, who was also preparing to write. So, we could actually match up approaches from different universities. I would strongly encourage inter university interactions for people of the same discipline even if you can interact with a senior Consultant, in terms of their academic programmes, and sharing information, it gives a different perspective and I found it really helpful.*
> Extract 18

Daisy and Mary managed to pass the final exam at their second attempt and acknowledged that if there was more engagement with the consultants, they would have passed in the first attempt. With some degree of engagement with one consultant in their department, they had relied on the peer support and

remote advice from a senior consultant at another institution. Based on this experience, they vouched for having study-partners and collaboration with peers and consultants from other universities as they bring value, awareness of trends, and different perspectives to the speciality subject material. From this construction, it seems that the consultant from another institute was beneficial in assisting students who were peer learners. Mary felt that she had to persist in group discussions with peers. She was able to initiate contact with her departmental consultants occasionally but it was to verify what to study.

Mary and Daisy in their own different situations found self-directed learning ways of approaching consultants and tapping into their expertise (Extract 53, Appendix 4). Theresa could not find a study partner or a consultant in her own department to help her, because of her reluctance and discomfort in forming relationships with different others. However, she eventually qualified after many failed attempts as she was offered a mentorship by a consultant from outside the department, as she explains in this extract:

> *My learning was affected because we did not get any guidance or mentoring from my department consultants who were White. May be that was because of a lack of relationship and maybe because both sides were reluctant because of different racial groups and previous racial tensions in my department. At the end, I made a relationship with the White consultant from outside which opened all my access. She initiated the contact offering me a personal mentorship, and after qualifying offered me a position in her practice.*
>
> Extract 19

In the group who had left, failure to form relationships with the peers from the same department was constructed as a result of being treated differently while commenting at the academic group discussions, as mentioned by Lucille (see Extract 17). When probing into why the participants did not reach out to the external institutions, the responses varied. Pinky mentioned that she did not know anyone personally at the other institutions, whilst Lucille, Phillip, Barbara and Thomas said they felt reaching out to others would compromise their chance of progress with the consultant coordinator in their department, as the circle of this discipline is quite small. They reported feeling intimidated by the control of the authoritative nature of the coordinator and his power as one of the powerful seniors in the national CoP and examination committee.

The lack of relationships or strained relationships were also due to a lack of contact time. Consultants focussed on their own professional growth and agendas which were not related to registrar education. This problem was illustrated by Thomas' extract, against the background of his feeling of prejudice emanating from the previous apartheid times (App2/58):

> *As I said the Indian consultants were focussing on their own career, research and other areas, and not training us. They may have trained the Indian registrars secretly behind us in their*

offices, which I cannot confirm as we never communicated or shared anything. It really knocked out my confidence.

Extract 20

Pinky (Indian/left) had a slightly different experience in the sense that although she was dealing with White consultants, she found the senior consultants were more approachable and helpful as the junior consultants who tended to be judgemental. She said: "They are more approachable in the sense that they don't judge you harshly and they always encourage you." (Extract 54, Appendix 4). Lucille mentioned one knowledgeable Black junior consultant who was not given recognition by Indian seniors in the department. She felt discouraged to form a relationship with him, although he seemed to be willing to assist her. It was a serious impediment to her learning as he was the only person from whom she could have learnt. He was not assigned to educate the registrars and the Indian senior consultant did not approve of any other consultants interfering with her coordination.

Phillip explained how his relationship with the consultants and HOD became strained, possibly by his outspokenness during meetings and assertiveness regarding the test and mock exam scheduling. He mentioned that "from their point of view, I was a rebellious person", and he felt that he was affected negatively by the strained relationship (Extract 45, Appendix 4). Barbara felt that in their department "there was a lot of tension between the peers - the seniors and the juniors". Tutorials were specifically designed for the seniors and she was prevented from attending them. As a junior registrar she felt she missed out (Extract 55, Appendix 4). There were no tutorials for junior registrars.

In the group who had qualified, participants had differing experiences regarding relationships with their consultants. Daisy felt she was excluded from the CoP by the consultants and HOD, and shared "members of that community did not stand up to say that I should be part of it". In this construct, she implied an expectation to be invited by the seniors into the CoP officially. This feeling of exclusion prevented her from having any true relationship with them, even after qualifying.

Although a self-learning culture was expected for the registrars, realising that learning in this discipline required a MKO, Daisy and Mary worked out ways to approach and engage with the consultants. Daisy used a non-confrontational approach, as she mentioned: "You don't hold grudges. If somebody feels that it's not their responsibility to teach you, that's how they feel about it. There's nothing they're going to do. You have to find a way around." She navigated within the culture of the department to tap into one of the consultants' expertise. However, she never truly formed relationships with the senior members and also did not adapt to their culture. She joined a private practice CoP after qualifying.

Mary observed that a particular consultant in her department knew how to solve difficult problems, and that she would benefit in learning from her. She tried to find problems from daily practice of service work, and then take it to the consultant for further assistance. The consultant was then approachable and assisted her by showing how to go about it step-by-step, as Mary illustrates:

… I would read up on the subject matter as background, look for answers or guidelines how to go about it. Later on, I would go to ask specific things, you know that consultant would then specifically help me and give me resources and explain things, but it's not the kind of person who would initiate from her side.

Extract 21

Mary found the self-learning culture endorsed by the consultants in her department to be part of their racial and socio-cultural identity as White people learn this way, and she did not feel that it was personally discriminating against her. Her departmental CoP consisted of White and Indian seniors and she felt some aspects of the culture of the CoP, such as expecting self-learning, waiting for students to initiate contact and enquiry or expecting obedience, was acceptable. She tried to adapt to them whilst preserving her own identity and she later on entered the CoP after qualifying.

Lisa had a different experience as she was mentored by two heads of department consecutively, an Indian and a person from a European country. They gave her regular formative assessments from early in her training, thereby showing her what was expected for regular assessments, and she recalled them assisting her to plan her learning. She constructed this as being a most fortunate circumstance as she was able to form a relationship of mutual respect with various HODs in her five years of training. In her case, mediation by the series of HODs in her early years constituted learning and development that was helpful for examination preparation. She had also recognised that her own potential, dedication, and ability to use self-directed learning where there were gaps, contributed as much to her success as the mentorship she received, as shown in this extract:

Studying on your own, and just believing in yourself and just going through stuff. Because the scope is so big. There's so much. You won't be able to go through everything with your senior. You have to realise that a lot of it is your own work.

Extract 22

She did not have any opportunity to study with peers or participate in group interactions, but she believes that it was not that critical as she had always studied on her own. She stressed that being mentored was more needed than working in a team. Lisa adapted to the culture of her CoP managed by the HODs that supported her learning. Although the HODs were supportive of her learning, other consultants in her department who impeded her learning were never in the CoP due to their personal clashes with the HOD. She recalled that "The consultants' approachability and their attitude were not good at all. I couldn't approach them to ask them anything, and there was never anything constructive from them".

Theresa did not engage with any consultants from her own department, but was mentored by a consultant working in the private sector in her last six months of her training. Theresa believes that she was offered this fortunate opportunity due to her behaviour during a summative examination that

attracted the notice of the. According to Theresa's constructions, the right behaviour in that environment was complying with rules set by the consultants, following the rosters drawn up by the White senior peers, working quietly, and self-study without complaining. Theresa believed that if she spoke out in a confrontational manner she would not have been offered this mentorship. She considered it to be the most important factor in her ultimate success in the final examination, after having tried and failed many times (Extract 56, Appendix 4). She mentioned Black peers who were in the same department and had spoken out for what they believed was not fair, and they had not succeeded in the exit examinations and eventually left the programme. She shared "I know a friend in another medical speciality who was very good at her work and studies, but this person never made it, because of being much more outspoken". Theresa highlights the importance of relationships in postgraduate education after she had not had any relationship with the White consultants or peers in her department. She constructed it as being due to feelings of discomfort with inter-racial interactions, as said in the following extract:

> *It's a difficult one because the thing about mentoring, especially at postgrad, it's about relationships. You must form relationships and you must feel comfortable with your mentor. You must feel that the mentor is approachable. I never had any relationship with those [White] guys so I cannot say it was affected. Even in postgrad, I never made real friendship with them and I think it is difficult for both sides. It was difficult for me and for them as well. It's a racial thing.*
>
> Extract 23

Theresa constructed the same idea as Daisy that speaking out in a confrontational manner would not help her in passing the exam.

In conclusion, participants reflected on how their relationships with the teachers and peers provided better learning experiences in their schooling and undergraduate years resulting in them becoming medical practitioners. The tensions came about in the postgraduate training as a result of various factors. The first was the disjointed expectations between the registrars who wanted one-on-one mediation and the consultants who promoted self-learning (App2/39). Secondly, there were behavioural expectations from the consultants, such as submissiveness and obedience, while some registrars felt they should be assertive as that was their personality. Thirdly, participants believed that these demands were underpinned by power and control issues from the consultants, which strained their relationships. Although these findings were prevalent in both groups, notably, those from the group who had qualified believed that it was possible to adjust to expectations or to at least 'go with the flow' during the programme. It would facilitate being accepted by the CoP and would improve one's chances of success.

5.3. Theme 3: Challenges in the learning process

Sub-themes in this section are presented as: lack of curricular clarity, and a formative learning structure. In this theme, how these aspects affected participants are discussed, and how the group who had qualified overcame these difficulties to complete their studies.

5.3.1 Lack of curricular clarity

According to South African Qualifications Authority (SAQA), 'curriculum' has been defined as a basic means through which educational changes are introduced to develop new graduate competences (SAQA, 2000). Based on this definition, the curriculum is conceived as consisting of elements in alignment with each other, namely, aims and objectives in the domains of knowledge, skills and values of the medical speciality discipline. The objectives in each element can be met by offering the content for expertise, strategies and a model of teaching and learning, in this case, the cognitive apprenticeship model and relationships between learners and educators. Assessment and evaluation should be continuous formative assessment with constructive feedback that would prepare registrars for the summative examination. A formative educational structure, as part of the curriculum, should take the organisation of the syllabus, content, time with respect to service hours which both registrars and consultants have to commit to, and space into account. Furthermore, materials, patients, books, access to the Internet, laboratory setups and how the curriculum reflects the needs and interests of students, the community, the nation, employers and the economy, should be reflected in the curriculum (Hartman et al., 2012).

The findings indicate that none of the participants received curricular information for medical speciality-A from their respective departments upon joining the programme (App2/32). Curricular clarity in this context means both the scope and the level of depth that is required for novice registrars to learn and develop in the discipline, as well as the expected outcomes. Learning in medical speciality-A requires both a theoretical background for the knowledge domain, and a practical aspect for skills development. Additionally, developing an appropriate aptitude, attitude and values for medical speciality-A are required. These are expected areas that have to be learnt by observing and engaging with the consultant educator or mentor. Later in the programme, from 3rd to the 4th year, some institutions directed their students to the website of the exit examination body (CMSA), where, for the first time, the scope of the syllabus was made available by the speciality's expert committee. It is also a blueprint for the exit examination Although these two elements were very helpful to the registrars, the other elements of a curriculum was lacking.

Daisy and Mary reported that they did not receive a guideline of the scope, text book names and skills areas to learn when they joined their departments, and Daisy recalled that "specifics of expectations and how to go about them and what you needed to cover, only came up later in my last year with the College" (Extract 51, Appendix 4). They used these guides, but Daisy felt she needed to engage with the

Consultant personally to understand the guideline, and to ask further questions, and discuss the myth of self-learning (how to self-learn the vast scope with an unexpected depth). Mary was in the same situation as she discussed in the following extract:

> *Obviously, it would have helped even more if I knew exactly the curriculum from day one. Because no-one told me about the curriculum on the College website. It was in my third year that I learnt about it.*
> Extract 24

As participants were expected to write the exit exam at the end of their fourth year, most of them felt this knowledge of syllabus came too late. Mary reported that "I started downloading all the past papers. I went to look into the Royal College and also the Australian College." Mary felt that had she received the clear and comprehensive curricular guide earlier, she would have passed the final summative examination at the first attempt. Mary and Daisy found their way to navigate the scope and depth in the syllabus and approaches in preparing for the exam from the past papers and they were eventually successful in the exit examination at the second attempt. Although questions in the exit exam do not usually repeat, studying past papers gave them some ideas of what the expectations were. They constructed the experience as unnecessary, traumatic, and compromising their actual potential.

Pinky and Theresa were also in the same situation regarding lack of clarity on scope and depth they needed to learn in the discipline, as mentioned by Pinky:

> *When I started out we didn't have a clear curriculum in terms of the College. The College didn't have anything for us. And it only came about much later, just before I left the programme. So, I think that's why I think I struggled a lot. Because there was always a grey area where we didn't know how far we should go with the study. Even in that curriculum people couldn't define how far you should go. There was no clarity with the scope and depth of the curriculum.*
> Extract 25

The participants only realised that their daily service practice did not reflect the expected outcomes in summative exams much later in the programme (App2/34). In addition, after failing the exit examinations, participants in the group who had left realised that day-to-day practice was supposed to be supervised so that learning could be taken deeper into conceptualisation as that was what they had to demonstrate in the exam. Due to a lack of facilitation, the participants did not reach such a level of conceptual development. Theresa expressed how the lack of clarity in the elements of curriculum relating to syllabus and educational method affected her learning:

> *The curriculum was like just written bullet points. So, it was not as clear, and also because this was not a field that had a clear historical curriculum. So, it was still trial and error, certain things. It needed a lot of mentoring and guidance in a context that one had to get explanation*

as to the fact that I was in different departments. Which, most of the people that study just stay in one department. I was rotating and that made it a bit challenging because you go around and you don't know in each subject how far you should go. In terms of curriculum and how much you must do, so we really needed mentoring there.

Extract 26

Pinky and Theresa continued looking for clarity from three different departments, and they found one that was better with guidance than the other two. They also noted that the curriculum for their discipline had only recently been clarified by the College, just before Pinky had left the programme. Fortunately, Theresa was able to continue with the programme as she joined a year and half later, thus had a chance to readjust to the newly published guidelines.

Other participants in the group who had left the programme also had not seen a syllabus or curriculum until they were near the end of the programme, as Lucille stated: "when we were given the document that details the syllabus we were already in 4th year, it was difficult to catch up". Their departments tried to set up programmes for catching up with the newly defined 'requirements document' issued by the exit examination body, and summative assessment blueprints when they were near the end of the training. The document contained a syllabus in knowledge and skill domains with learning outcomes in some areas. It did not contain elements of formative learning, an educational model or other elements of the curriculum.

Lucille left the programme without attempting the summative exam and Phillip after failing once. They felt the knowledge of the syllabus arrived too late, and there was too much to catch up on for their missed opportunity of their past four years. They constructed their feelings of loss of hope, direction and self-confidence. Barbara left the programme and decided to transfer to another non-academic laboratory to work as a medical officer and stated "My time was not up. I actually asked for a transfer". She became detached from the academic programme set up to remediate high failure rates in the recent past that now focussed on the established curriculum and blueprinted assessment.

In the case of qualified participants, Daisy and Mary approached the consultants for guidance on the clarity and expectations of the document. Lisa was guided by her HODs in her early years of training and reached her conceptual development by additional self-directed learning in the later years so that she could comply with the requirements. Theresa was lost in the confusion and failed the exit exam repeatedly until she was offered a mentorship by an external consultant who showed her the expectations of the exam and facilitated her development.

In summary all participants faced the challenges regarding the absence of a formal curriculum with all its aligned elements and the clarity on the scope and the level of depth of the syllabus. In their final year in the programme, a consensus document was made available with a list of areas to learn theoretically and practically (knowledge and skill). However, the elements of values and attitudes, formative

learning, formative assessment and educational methods to be applied were absent. The participants who qualified were persistent in finding ways of overcoming these challenges.

5.3.2 Lack of formative learning structure

In medical speciality-A, a formative phase of learning could be achieved on a variety of platforms: formal academic seminars, journal and case discussions, and routine day-to-day service work. However, these activities needed to be supervised, monitored and evaluated. Guidance and feedback are essential in formative assessment, which is an integral element of the curriculum, and constitutes the most important components that impact learning. It also prepares the students with competencies and performance for the summative assessment (Biggs, 1999). Formative learning constitutes a short period of training followed by assessment and a repeated cycle of such. Guidance and providing feedback are also the foundation of cognitive apprenticeship as well as during the mediation within the ZPD (Sullivan and Ruddick, 2013; Dennen & Burner, 2007).

In addition, the informal activities where learning could also be facilitated are the unscheduled discussions when problems are identified, and solutions are discussed. They reflect learning in the situatedness within the CoP. Novice registrars should be able to participate with freedom from fear of negative judgement. Novice registrars should have opportunities to learn hands-on from the consultants in how to identify and solve problems as cognitive and metacognitive skills are developed in these situations (Vygotsky, 1978; Bandura, 1989). In the formal academic discussions, consultants are supposed to ask probing questions to build up the theoretical knowledge, and by using simulated problems novices develop analytical and application skills. Informal situated learning takes this further into conceptual development, critical thinking, and promotes a mind-set for analytical solutions. (McLeod, 2011).

The participants in both the group who had left and group who had qualified confirmed having had experience with formal academic activities during their education such as academic presentations, journal discussions and tutorials. However, they had not been exposed to probing questions, simulated problems and constructive feedback was not provided in most cases (App2/46). When there was feedback, some participants from the group who had left felt that it had been harsh and not constructive.

Lisa, in the group who had qualified, received regular assessments, guidance and feedback from her HOD. Her departmental CoP was not functional due to clashes between the consultants and the HOD, but her self-directed learning and learning from the HOD seemed to have led to her success. Daisy and Mary from the same group were determined to seek alternative sources of help from senior peers from within their departments or from other institutions, and reached out to at least one of the consultants changing the self-learning mode to partially guided learning (App2/49). Theresa was the exception in this group and she did not have positive formative learning experiences. She described "…that

consultants would humiliate the person in front of others during group discussions when someone is presenting", and the rather negative and humiliating feedback was damaging to her self-confidence.

In terms of learning in group sessions, according to the participants there were academic seminars arranged as formal presentations where the assigned registrar presented on the topic either self-chosen or being suggested by the consultant. At the end of the presentation, consultants and peers were supposed to ask probing questions to stimulate more discussions, to lead to a deeper level of learning. However, questions should be asked in a constructive and not a dismissive way to encourage students in engagement. The participants from the group who had left said that opportunities for probing questioning by consultants were limited, and that feedback to stimulate further discussion or facilitate deeper knowledge was inadequate, especially around the contentious issues in the field. They felt this did not prepare them adequately for the examination (App2/51). Thomas explained how the presentation sessions were conducted, and according to his construction, they lacked engagement.

> Thomas: *In terms of Consultant feedback in your case, we didn't get a lot of that. I don't know why they felt they didn't criticise us as much, because at the end of the day I don't mind being criticised, if I'm learning. I don't take it as personal, but I think either they weren't interested or they felt we'd take it personally if they criticised us in front of people, I don't know*.
> Interviewer: "So they quietly listened?"
> Thomas: *Yes, for the most part and ask the odd question here and there. But that's really it. You never got a robust discussion where you had to explain why you say this and that. Then also, because you were given 3 minutes, and then after you present the case the problem is the next person who has to present their case, so time was limited.*
> Extract 27

Other participants were also not given opportunities for formative learning. Barbara had previously reported that the tutorials they had with certain consultants were exclusively made for the seniors, thus when they were juniors, they were not allowed to attend (Extract 54, Appendix 4). Others in the group of participants who had left said that consultants did not engage in these sessions at all, as indicated by Thomas on case presentation: "they were very rushed and there was no academic input from the consultants". The participants thus constructed that these academic seminars and tutorials were not helpful for them in gauging themselves for readiness for the exam. In the absence of consultants, students could rely on the senior registrars to some extent, but Pinky felt the lack of support from the senior registrars and mentioned that: "It was negative all the time" (Extract 54, Appendix 4).

Most participants in both groups claimed that they had no supervision from their consultants in day-to-day service (App2/58). They learnt mostly by themselves asking help from the senior peers, and when they were busy or not available they referred to text books or the Internet to find solutions without guidance.

In addition, during the formative years, service was the main focus and supervision of learning seemed to take a second place. Daisy reported that "the academic time was not protected" and how she struggled between service and self-study time during her training (Extract 57, Appendix 4). The conflict was due to the daily service tasks not contributing to learning, thus registrars felt they were left with very little time for self-study.

Although a formative learning structure was lacking, participants reported writing summative, level promoting assessments such as the primary level examination that moved them to become senior registrars. In retrospect, participants found the level of assessment in these examinations was not in any way near to what was expected at the final summative College exam (App2/51). The level promoting examinations were written at universities across the country and can thus be called internal examinations. They vary amongst the universities in subject areas as well as level of assessment. Some participants in the group who had left reported that their primary level exam was at the level of undergraduate medicine for the subject of this discipline and that it did not prepare them for the final exit exam, as discussed by Barbara in this extract.

> Barbara: *Basically, they kept on referring us to the fourth-year medical student notes. This is what irritates me. Every time we wanted to you know get to the next level, they kept on going back to the fourth-year medical school.*
> Interviewer: "That is undergraduate. You are not undergraduate, you are postgraduate, how can you keep on reading undergraduate notes?"
> Barbara: *This is what my biggest issue was. This is what my frustration was. And you know the thing is that, you know even our primary exam I feel was not the level of a primary exam level. It was at fourth year medical level, and you know this was my* big *issue. We never got feedback to say that this is how you did, this is what you got wrong, this is what you did right. We didn't ever get feedback about that. Oh no you did fine, you passed, you're through.*
> Extract 28

This experience was also shared by Theresa as she mentioned that:

> *we never really got to know how we are supposed to answer the questions in these summative exams because they were summative and we did not get any feedback, but we passed and carried on to the senior years. So, I can only think that the fact that I was failing many times in the final exam means I was not prepared by this primary level exam.*
>
> Extract 29

All participants constructed that these level promoting exams were not contributory to the overall preparedness for the final examination (App2/47).

Later in the programme, some departments started to implement internal mock exams that were meant to assess the candidate's exam readiness. They were also meant to provide feedback so that candidates could address the gaps in preparing for the exit examination. Participants did not know the level of the mock exam until they faced it, thus they felt not ready for it, as Phillip stated:

> Interviewer: "You wrote your mock in your fifth year?"
> *Phillip: It was the first time that I've met that question. And after that question, that's when I started to go and look. I've read that topic, but when I read it after that question then I understood what they want. You understand, so the more you write. I felt that the more you write the mocks, the more insight you will have.*
> Extract 29

Regarding these mock examinations, participants claimed that the feedback was not given individually or specific enough. It was also subjective, decided by the person marking it, and unclear as to what the corrective action must be (App2/51). For the past two years, students have been able to write mock exams every 6 months until they pass and are deemed as ready for the exit exam. For some participants (Lucille, Phillip and Barbara) in the group who had left, the time ran out and their contracts ended so they had to leave the programme. Thomas continued writing the mock exams until he passed, but he did not make it in the exit examination and had to leave the programme and employment.

Participants from the group who had qualified overcame the lack of guidance and feedback from the consultants. Mary and Daisy had formed peer groups and obtained mentoring from a senior consultant from another institute. Lisa was mentored by two HODs and had regular assessments from earlier on. She believed that continuous assessment and receiving specific and constructive feedback was what gave her motivation and built her capacity. She reported:

> *In my second year, because the new HOD started, it was the foreign doctor, and she started assessing me with the essays every two weeks.*
> Interviewer: "So it's a formative assessment"?
> *Lisa: It was, it didn't really count towards anything, but it was marked.*
> Extract 30

Theresa received feedback from her mentor consultant by working in the private sector during the last six months of her education (Extract 56, Appendix 4).

For medical speciality training, drawing on the cognitive apprenticeship model described in the theoretical framework, social and cultural engagement between the novice registrar and consultant educator are placed in a pivotal role for facilitating learning and development. It promotes

internalisation of disciplinary culture and skills to the level closer towards expertise, thus preparing registrars for the expected outcomes. Mediation in the ZPD by the consultant mentor requires mutual respect and a relationship for the mentor to know and understand the weaknesses and strengths of the novice registrar, to grow in his or her potential. In addition, participation in the problem-solving processes and contributing in the CoP is part of learning in the cognitive apprenticeship model. Respect and sound relationships facilitate the participation of junior members. Through participation and mediation, the culture of the discipline and attitude of the profession are transferred to the novice registrars. The findings denote the intimate connection between relationships in the learning environment shaping learning (Theme 2) and the implications of the lack of a formative learning structure (Sub-theme 5.3.2).

In concluding Theme-3: 'Challenges in the learning process', participants' identified a multitude of factors that were critical for their learning. Yet, it was not provided in the formative education. Aspects such as an explicit curriculum, learning guides, alignment of day-to-day practice to the assessment criteria, and the structure of formative education, were considered to be barriers to learning. Additionally, there was a lack of supervision, mentoring and monitoring of registrars' performance and constructive feedback was absent. Most importantly, the lack of sound relationships between the novice registrars and the consultants resulted in students being unable to find solutions and clarify their learning to continue year after year. The constructs from the findings also suggest that the lack of opportunities for informal interaction in situated learning environments prevented their conceptual and cognitive development. Black participants were not explicit in explaining why they felt they were not welcome to join the informal conversations of White or Indian consultants and peers. They felt uncomfortable to join, and some mentioned that there was no invitation, but they also did not wish to ask. This could imply that all parties involved were not transparent or comfortable enough to communicate about their intentions, or they were ignorant, and assumed that junior registrars did not want to join. This again highlights the impact of a lack of sound relationships that forms a barrier for formative learning. In the scarcity of opportunities in situated learning in the CoP with senior consultants, participants had to rely heavily on self-directed learning and peer-learning. However, self-directed learning has emerged as requiring a facilitative environment in the recent meta-analysis review by Couper and Town (2016).

5.4. Theme 4: Resilience

Sub-themes in this section are the capacity for adaptation, and the ways in which resilience has been shaped by the micro- and macro-environments of each participant. Despite perceived racial and socio-cultural challenges, participants in the group who had qualified found alternative ways to approach learning and were ultimately successful. The ways in which they overcame the challenges were related to 'resilience' and emerged as a sub-theme. In contrast, possible factors that contributed to why the participants in the group who had left the programme could not overcome the challenges, are discussed.

5.4.1 Capacity for adaptation

Resilience has been described as an ability to leap back from adversity by overcoming difficult circumstances in one's life (Marsh et al., 1996). The individual may continue with the challenges in the same way as before or may use adaptations to cope with adversity (Newman & Blackburn, 2002) with the belief that the environment does not change, but one can adapt to it. The factors in the environment that pose challenges are still there, but one is able to find solutions to work around these factors and be able to reach the ultimate goal. Alternatively, one is able to adapt and conform to what the environment requires or expects. This capacity to adapt either temporarily or permanently is seen in individuals who initially failed and then gathered strength to recover in the same environment. Resilience is also defined as flexibility, buoyancy, strength to persevere, and resistance to be defeated (Marsh et al., 1996). The same author claimed that individuals who demonstrate resilience tend to have developed a set of common qualities or characteristics that equip them to cope well with life's challenges. According Martin and Marsh (2006), self-efficacy, confidence, control, planning, low anxiety, composure, persistence, coordination, planning and commitment with persistence were characteristics of academic resilience, with open-mindedness and maturity also found to be important attributes.

More recently, Ungar and Liebenberg, (2013) constructed resilience as the social and ecological contribution by different environments in which a person has lived through to survive or to increase chances of survival. The authors claimed that when there is significant exposure to adversity, mental and physical processes that naturally arise as a response to protect one-self from the stress of the adversity, interact with the stress itself. As a result, the person develops a capacity that equips him or her to traverse through the adversity. This may be by finding a way to the psychological, social, cultural, and physical resources that help to sustain well-being. The authors suggest that individuals who are exposed to traumatic experiences in life, repeatedly find ways to navigate to these resources. This may be from within themselves, or from their family or community to develop resilience, and will enable them to sustain their existence and find meaningful ways to contribute to the community. The basis of Ungar and Liebenberg's (2013) socio-ecological theory for resilience moves away from an individual focus to the family and community orientation, where the subject feels the sense of belonging and develops a sense of identity by giving a meaningful contribution. Development of resilience in this context depends on whether the individual is treated fairly in their communities, feels good about their family traditions, is proud of their ethnicity and national identity and is provided with opportunities in the community to show others that they are responsible. Supporting the linkages between self-identity, confidence, agency and resilience. The authors believe that characteristics related to resilience can be developed rather than one being born with it, with peer support being one of the factors in developing resilience.

In the group who had qualified (Daisy, Lisa, Mary, and Theresa), different approaches to adaptation and finding alternative solutions were evident when faced with adversities such as a lack of a

curriculum, an absence of mentorship and training, and power and relationship issues with peers and consultants. Daisy and Mary demonstrated maturity, adaptability and resilience in their approaches and in this extract, Daisy reflects on why she feels she coped:

> *Maybe it helped to train when you're slightly older, because you already knew that's what you wanted, and therefore you had to persist. Also, maybe finally, the last one is being resilient. It's the struggles one had maybe during undergraduate taught you to manage different approaches, different cultures and different personalities in terms of in the training sphere.*
>
> Extract 31

Daisy believed maturity relates to open-mindedness and being able to focus on the goal, overlooking other distractions. Mary realised she was on the wrong path after failing once and she used self-directed learning as an alternative approach, as she illustrated in this extract:

> *I then realised that probably they don't really ask what is in the textbook. One has to focus on trending issues and learning to answer questions. So, I would train myself, like put myself as if I'm in an exam, time myself, answer questions and then give it to a consultant to have a look at it.*
>
> Extract 32

Both Daisy and Mary failed the exit examination in the first attempt and were able to identify the gaps in their knowledge. They initiated enquiry with one of the consultants against the odds of socio-cultural differences, and on their second attempt, they were successful. They perceived their actions as a self-directed approach to find their own solutions and they conceived this as resilience. They recommended this approach to other students.

Lisa also demonstrated resilience in her ability to recover from adversities of difficult family life issues and extended maternity leave that interrupted her studies. She revealed adaptability to the situation by returning after encouragement from her HOD. Lisa mentioned that she did not have study partners or much interaction with her peers or with the other consultants. Her only interactions were with the HODs from whom she received mediation. She confirmed not having had any participation in the CoP as the consultants in the department did not participate in group discussions. She concluded that one-on-one mentorship was the most important factor in her education that made all the difference, resulting in a strong foundation for the speciality. She also believed that her determination, focus, ability for self-directed learning and self-discipline were significant contributions. She reflected:

> *Studying on your own, and just believing in yourself and just going through stuff. Because… the scope is so big, there's so much, not everybody… you won't be able to go through everything with your… with your senior. You have to realise that a lot of it is your own work.*
>
> Extract 33

Lisa’s advice to her postgraduate peers was “don’t waste your time confronting”, and through trusting herself she overcame adversities to pass the final exam (Extract 59, Appendix 4). Regarded by Newman and Blackburn (2002) to be an aspect of resiliency.

Theresa shared how she felt fortunate being exposed to other racial groups when she joined the multi-racial secondary school, as she was able to see how they learn with different approaches. She noticed that White peers interacted with their teachers very well and learnt more widely than what the classroom teaching covers. She shared that she was fortunate to be immersed in such cross-cultural schooling, although she had not interacted cross-culturally as much as she had wished to. She benefited from the little interaction that she had and mentioned that: “I had to adapt and realise where I’m lacking as a person”. She reflected on the difficulties of interaction and forming a relationship with White peers and teachers after having lived in a divided society.

Theresa’s approach to dealing with racial and socio-cultural difference in the postgraduate programme was to have a ‘thick skin’ and focus on what she had come for, which was to become a specialist. She stated that: “I learnt to be tough and resilient” (Extract 58, Appendix 4). Theresa continued persevering in the discipline without leaving and demonstrated resilience in bouncing back after failing many times and an adaptability to do what she felt was required to pass the exam. She was also an example of how to attract mentorship through exhibiting potential by diligence, punctuality and commitment. She called for opportunities for one-on-one engagement to enable one to be successful. She knew that the departmental culture expected her to be submissive and non-confrontational, and she saw the link between this culture and the acceptance into the circle of expertise. With her successful accomplishment of finding someone as a mentor, she persevered and showed adaptation to these expectations. Although she was offered mentorship by an external consultant, she never found trust and a sound relationship with those in her department.

The findings disclosed how Daisy and Theresa navigated the environment that they felt socio-culturally challenging, adding deeper meaning and a different dimension to the description of resilience. Resilience that had emerged in the group who had qualified was reflected as adaptability to circumstances. Resilience was adapting by complying with the demands of the consultants regarding work schedule, timing of writing mock exams or a chosen self-directed learning approach. Resilience in their context was shown by how they responded constructively to situations that were challenging, and an ability to recover and bounce back when faced with failures. It was demonstrated further by their ability to seek alternative approaches when faced by adversity and their ability to initiate enquiry with the consultants despite the risk of being rejected or ignored. These participants who had qualified had managed to cross the bridge of racial and cultural differences demonstrating cultural competence, and were persistent in approaching the consultants to enquire what they needed to know until they were

noticed.Participants in the group who had left the programme perceived crossing this cultural bridge as compromising their identity, and had failed to approach the consultants to initiate enquiry.

In conclusion, participants from the group of participants who had qualified demonstrated resilience from multiple angles such as maturity, open-mindedness, the ability to focus and to discern what to engage with and what to overlook, the ability to self-direct deep learning, to to initiate enquiry and remain engaged all characterised their resilience. Other attributes included the ability to maintain a positive outlook on different cultures and ways of interactions, an ability to form relationships through mutual respect and tolerance despite differences, and an ability to take responsibility for one's learning. The participants that had left the training programme did not seem to have developed these aspects of resilience, although they all had demonstrated perseverance in enduring the entire training period, and two out of five continued with tenacity by sitting for the exit exam even after leaving the programme. Participants in the group who had left reflected that they regretted not striving for collaboration amongst peers, which they retrospectively had realised the importance of. Some believed that the outcome may have been different had they tried to conform to the requirements of the departments' cultures.

5.4.3 Ways in which resilience was shaped by the micro- and macro-environments

By reading all the transcripts recursively, it was clear that there were differences in perceptions amongst the participants in both groups, and these perceptions were the basis of variances in their conceptions and how the they responded.

Some constructed the challenges as being rooted in their personal differences with the consultants, such as race or personality and some as being part of cultural differences related to race and ethnicity. Mary felt that how consultants treated registrars was the normal culture for Afrikaans-speaking Whites. Lucille, Phillip and Thomas perceived that the departmental culture was authoritarian and related to power. Culture was thus interpreted differently by participants, and this determined how they acted upon these cultural challenges. Those in the group who had qualified chose to ignore the negative remarks, personality clashes or perceptions of being treated differently. They chose to focus on finding alternative approaches to make progress in their learning Some in the group who had left decided to take the negative remarks, personality clashes, and power issues seriously and that may have damaged their relationships. They expressed feelings of being put down and humiliated by the harsh remarks from the consultants, and this contributed to the breakdown of their relationships with them. The participants in the qualified group also felt the same, but they were able to discern such comments as distractions and took the negative remarks as a source of motivation to make changes in their learning approach. The participants in the group who had left could not transcend these challenges and experienced reduction of self-esteem and confidence.

Exploring these variances further, a link with the participants' history of social integration was examined. Six of the participants were Black South Africans whose parents and families grew up during

Apartheid (App2/10). They identified themselves as previously disadvantaged and they constructed their social backgrounds as socio-economically low and underprivileged, whilst the three Indian students saw themselves as coming from a middle-class environment.

Drawing on the theory of Bronfenbrenner (1977), perceptions, attitudes and behaviours could be shaped by previous learning environments. The preconceived ideas and beliefs developed from the family upbringing as a micro-environment; schooling, community or society upbringing as a meso-environment; and country history and socio-political dynamics as a macro-environment; can influence behaviour. As participants went through different stages of life, the preconceived ideas became more pronounced and affirmed in their attitude during their postgraduate education.

During schooling years, most Black participants went to modest missionary schools or rural poorly resourced primary schools, but they identified well with the teachers and their peers despite teachers being diverse and European. To overcome the socio-economic barriers the parents had faced during Apartheid, they sent their children to high schools with a good track record in the suburban areas that taught in English and with discipline taken seriously (App2/8). They constructed this learning stage as an environment in which they were able to form supportive relationships with teachers and peers (App2/4).

Daisy's socio-economic situation necessitated what she named: "migration for progression" from her parents' lives of growing up and working on farms. Even though being poorly educated, they supported her to get a better education. She remembered how her parents and elders in her family protected her from being in contact with the colonial White Afrikaans culture, and this may have influenced the way she felt about forming true relationships or adapting to the culture of the CoP that was dominated by White and Indian consultants. Despite this protective family environment, Daisy developed resilience in dealing with other races through her undergraduate years and work experience as a general practitioner. Daisy constructed such experiences and exposures as helping her develop maturity and a strong sense of her roots, agency, identity and value systems.

> Daisy: *I practised as a doctor for more than fifteen years. I used to work as an emergency doctor. There's always racial connotes, you know, in our interactions, but you play it down. We are professional enough to even turn a blind eye when somebody second guesses your decision.*
>
> Extract 34

Daisy worked for a number of years in general practice before joining the speciality training that allowed her to adapt to a different meso-environment before commencing postgraduate training. Similarly, Theresa grew up in an African rural setting and her parents faced socio-economic difficulties. However, her parents felt she should be exposed to diverse peers and teachers in order to learn from them. Theresa discussed her early history as follows:

I went to a predominantly rural primary school. Where most of us, or all of us were of the same background. It was sort of a maybe, lower, middle socioeconomic status. And you all spoke mainly one African language. Yes, and that extended to part of high school, but at the end of high school I went to a sort of mixed environment in terms of race and socio-economic statuses. I think for my parents, it was a good thing that I studied with different people, because they knew I was developing as a person. You know the only way you can develop is when you mix with other people and grow. I believe my previous exposure to diversity and learning how to deal with it in the High School and UG programme, helped me to deal with challenges in the PG programme by taking what is good for me. Glad that I did not take confrontational approach with the consultants. I just went along with whatever they suggested. When I failed, I just accepted and kept on trying and did not fight. I believe this helped me to get approval from the consultants.

Extract 35

With such a mind-set in her upbringing, Theresa ventured into dealing with the different others to learn from their approaches in studying. Whilst staying socially within her core race group, she extended her relationships with diverse peers. Although, she had failed the exit exam five times, she accepted the failure as a learning curve and continued demonstrating her commitment to learning and service, until she was eventually successful in the final exam.

Mary constructed how her family felt about social integration with different others and mentioned that "they are accommodating to different cultures, because of the values we were brought up, treating everyone the same" and how this allowed her to be comfortable dealing with diversity. When Mary went to an urban school she had an opportunity to become socially integrated with others who support each other, as she mentioned:

We were actually encouraged to discuss. So, we would have debates, like discussion. And as we go along with other students we started forming small groups and studied together. So, it was basically sharing information, study methods, approach to problems.

Extract 36

Lisa (Indian/qualified) in this next extract believes that her attitude of respect towards others came from her family upbringing and was related to their social class:

I think it's a lot to do with upbringing, in terms of being compassionate to another person, to be kind to another person and also, it's very much to do with personality. I mean in terms of our backgrounds, you know working class, our parents were not poor but they were still working class, middle class. They always taught me how to respect people regardless of their background.

Extract 37

For other participants, family support was strongly present in this learning stage and they constructed it as an important contributor for their learning and development (App2/9). Lucille said:

My family were not very educated, but my father had Standard 10 so he could teach. He was an informal teacher. My mom is a housewife, she didn't even matriculate. We are five at home, all of them they are professionals. In terms of the environment we are very much a down to earth family who believes in education, and my father believes that you only need to be limited by the sky. So that's why I knew that at some point in time I would have to specialise and be the top.

Extract 38

This micro-environment changed and parents worried when their children left home to attend medical universities where they would be exposed to and immersed in an environment racial and socio-cultural diversity. The parents of some participants felt that the children should not lose their own culture and identity, as Phillip recounted his parents' advice: "try and do as much as you can, but don't lose your own beliefs and identity" (Extract 44. Appendix 4). Thomas's parents had been forced into exile in a neighbouring country, but he did not want this to influence his relationships. Upon returning to South Africa, Thomas enrolled in an English medium university for his medical degree and there he experienced being treated differently than his White counterparts, as he mentioned:

I think that was the first time that I realised that you can be treated differently according to colour, and you needed to work a little bit harder because of your colour. It was a bit of a shock, but I think because of my background I was able to cope and just move along.

Extract 39

During postgraduate specialisation, Thomas experienced difficulties of not being able to talk freely and explained that "I was taught to always think and talk for myself so I cannot grow in the place where I cannot voice what I believe".

In the lives of Lucille, Phillip and Thomas, the feeling of oppression from apartheid had been instilled more strongly by their families, and they found integrating more challenging in postgraduate training. Quite differently from Daisy's situation, they did not have working experiences in racially diverse contexts before they joined the speciality. Lucille who left the programme in her final year without attempting the exit exam, illustrated in this extract how the culture affected her learning:

I think people were the main problem and they caused problems with social integration and they made cultures that would benefit them. As a result, our learning was affected badly. I think if I was ready to suck up to the consultants I would have made it, but my family values and ethics did not allow me.

Extract 40

This may imply that Lucille felt being subservient or submissive by not speaking out about what she thinks was part of the White culture as her experience confirmed this.

In contrast, the meso-environment of the Indian participants, Pinky, Barbara and Lisa were very traditional, middle-class and strongly religious. The communities in which these participants had grown up were close and protected, especially from other racial and cultural groups, as they grew up in apartheid times. They were able to form relationships with peers from the same race through their social and religious activities. They identified their environment as supportive, as stated by Pinky:

> *It was in an old Indian school so I had all Indian teachers as well, so I didn't have exposure to any other races. It was very… I would say… I think a protected environment because we weren't exposed to other races. Teaching was well structured, ja. We always had a roster to follow and the teachers were very helpful and they encouraged you and would always help you. It was a nice.*
>
> Extract 41

Later in their undergraduate years, all three had opportunities to become immersed in multi-racial universities, although Lisa was at an English medium, predominantly Indian institution. In the postgraduate training, Lisa also stayed on at the same institute, and the department where she specialised had mainly Indian consultants. Although she had difficulties in dealing with the consultants, she felt it was their personalities rather than racial and socio-cultural diversity, as they were from the same background. She was mentored by an Indian HOD whom she believed had made all the difference for her learning. These findings reflect that when micro-family and meso-school environments during childhood are more protective of single race and culture, individuals tend to struggle more to integrate and cope with diversity in later years. Lisa felt she is an introvert and prefers to rather socialise within her own racial and cultural group, but she stayed in her own cultural environment throughout her studies.

Daisy had a childhood in which her parents were exposed to extreme oppression of apartheid. She was protected from the dominant group until she went to university where she had to cope with a sudden change in the environment. However, it equipped her with emotional maturity and resilience and it was strengthened when she worked as a general practitioner for many years dealing with cross-cultural patients.

In the cases of Mary and Theresa their parents were not averse to the idea of their children attending a multi-racial school and learning from and with White people. They in fact saw it as an advantage for their children's growth and encouraged them to integrate. Both felt that their schooling and undergraduate cross-cultural experiences equipped them for the resilience and adaptation needed for the harshness during the postgraduate training. Mary was able to integrate more in the undergraduate studies that helped her to deal with cultural differences in the postgraduate study. Theresa tried to

integrate, but with less success and faced much more challenges in the formative learning of postgraduate study. She was able to navigate through, but not truly adapt to the culture of her department which was dominated by White Afrikaans consultants.

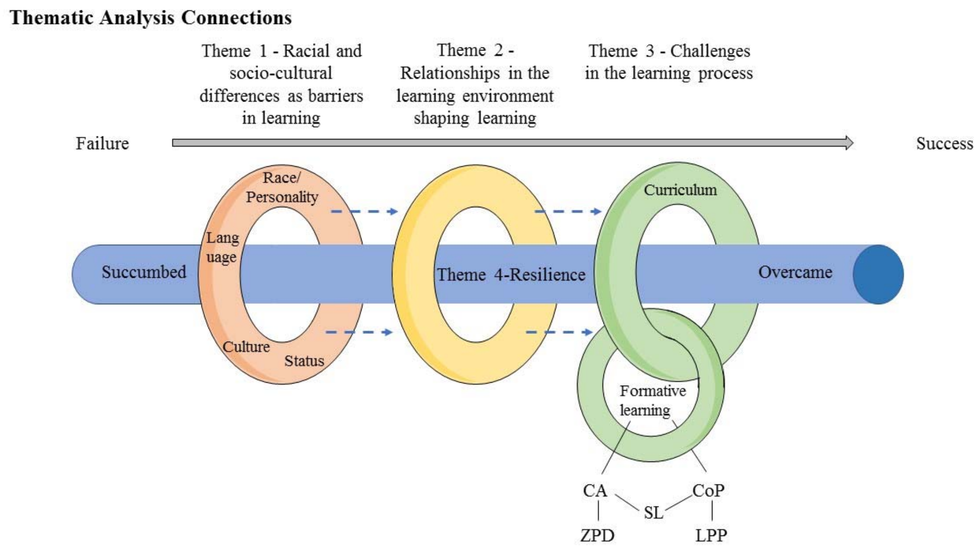
Summarising this sub-theme, it is apparent that despite differences in their micro-environment during childhood, with respect to the family's orientation towards cross-cultural integration, all the participants dealt well with racial and socio-cultural differences in their undergraduate studies and qualified as medical doctors. They reflected that this success was due to support from peers of the same background and academic support from some lecturers from multiple backgrounds.

In the researcher's reflection on the findings, during undergraduate study, personal mediation and participation in the CoP were not so important as in postgraduate studies, which allowed them to cope with academic challenges just by peer support and occasional contact with the lecturer. During undergraduate studies, students were not financially independent as they lived on either study grants or family support. It reduced comparison between their socio-economic differences, especially those who stayed at the student residences. Moreover, lecturers also saw them as students and not as future colleagues in their specialities. However, in the postgraduate environment, the students were registrars and some may have accumulated wealth and social or political connections in the society that set the differences within peer groups. The postgraduate environment has certain expectations socially, academically and culturally (institutional and departmental culture or professional culture). The difficulties in cross-cultural dealings became more pronounced in the postgraduate studies compared to the undergraduate years where the classes were large with a greater mix of races, cultures and languages, enabling students to choose the peers that they identified with. In the context of South Africa's macro-environment, they self-selected along racial lines of the previous apartheid system. The downside was the lack of exposure to other cultures, thus not being adequately prepared for the much smaller group, with less choices in the postgraduate environment. In addition, the undergraduate learning environment tended to be less intimate and required less intensive engagement compared to speciality postgraduate education. Although the undergraduate environment added some degree of coping ability in all participants, the way they responded to the expectations in a postgraduate environment differed. Most students reported that they were not aware of the expectations until late in the training, yet those in the group who had qualified were determined to find out what they were. They were able to use self-directed learning in the postgraduate environment, even with an absent or confusing curriculum, different learning approaches, personalities and power dynamics.

In conclusion of Theme 4: Resilience, despite racial and socio-cultural challenges in the postgraduate education mentioned by the participants, those in the group who had qualified were able to adapt through maturity and open-mindedness in their approach to forming relationships with peers and consultants. They overcame the challenges in their formative training through self-initiated enquiry with

the consultants, peer support and collaborations within and outside their institute. Their family upbringing micro-environment seemed to have played a role in how the participants of two groups perceived and conceptualised the racial, socio-cultural and personality differences in their postgraduate learning environment. This appears to have made a difference in their ability to deal with peers and consultants from different backgrounds.

5.5. Interconnection of themes



Legend Figure 3: CA-Cognitive Apprenticeship, CoP-Community of Practice, LPP-Legitimate Peripheral Participation, SL-Situated Learning, ZPD-Zone of Proximal Development.

Figure 3. Concept map showing the relationship between themes and sub-themes

Critical inspection of the data revealed horizontal relationships amongst the sub-themes, across themes. In Theme 1, the barriers of racial, language and socio-cultural identities were strongly related to one another, making the boundaries blurred although they were presented as separate sub-themes. In Theme 2, the influence of relationships on the participants' schooling and undergraduate years, and how this contrasted in their postgraduate teaching environment with disjointed expectations between the registrars and the consultants. . In Theme 3, the curriculum information and formative learning structures were inevitably intertwined elements of the curriculum. Lastly, in Theme 4, the capacity to adapt or negotiate with challenging differences had a strong influence on how the participants conceived the racial and socio-cultural differences. These differences were in turn underpinned by how the previous environments had shaped their perceptions, indicating the close relationship of resilience and cultural competence to the socio-ecological theory of human development.

There were also vertical linkages amongst the four themes presented as shown in the concept map in Figure 3. The first three themes represented challenges to learning according to the participants in both groups. Difficulties with curriculum and formative learning were suppressed by both registrars and consultants, due to the barriers felt from the racial, language and socio-cultural differences. A lack of relationships made the situation worse as there was distrust and divisions amongst learning parties that prevented learning in a socially and academically engaged manner. The last theme of resilience and adaptability underpinned how the participants in the group who had qualified approached the difficulties

in the other three themes. At the other end of the spectrum, there were participants from the group who had left, who seemed to have succumbed to the confounding challenges of three first themes.

The data implicitly suggest that the different ways in which most participants responded to the challenges of relationships, curriculum and formative learning, were based on their conceptions that these challenges were significantly related to people who were from different racial and socio-cultural groups, and the ways those people treated them in their learning environment. They explained their experiences as based on the perceptions that they were treated differently from their peers, who were of different backgrounds. These constructions seemed to be derived from their perceptions of peoples' attitudes and behaviour towards others from socially and culturally different societies, evident in their postgraduate environment. However, there were variations in such perceptions and that appeared to be related to how each participant's beliefs and ideas were shaped by previous micro-, meso- and macro-environments.

5.6. Evaluative analysis of data in conjunction with literature review, linking to theoretical framework and research questions

5.6.1 Linking findings to the theoretical framework and literature review

Theme 1 and 4 relate to the research questions, thus are discussed in sections 5.6.2 and 5.6.3 below.

Relation of Theme 3 to the theories:

Theme-3 'Challenges in the learning process' revealed links between the concept of cognitive apprenticeship and theories of socio-cognitive and socio-cultural learning cited in the literature review (Vygotsky, 1978; Lave & Wenger, 1991). The constructs in this theme revealed the lack of an explicit curriculum structure for participants and consultants in some departments, lack of mentorship, supervision and monitoring of the registrars' performance, and a poorly structured learning programme. Formative assessment was also not available to most participants. As a pillar of formative learning, continuous assessment and feedback is part of monitoring progress for the postgraduate student. In medical specialities the training is especially required to develop novice registrar into experts through cognitive apprenticeship in which monitoring and evaluation is one of the actions of the mentor (Collins, Brown, & Holum, 1991). For any assessment to be effective for further learning, feedback plays a central role. The feedback should be personal, specific, objective, encouraging and constructive with clear guidance to show where the gap is, and how to approach closing the gap (Biggs, 1999). Novice registrars should receive such feedback in a positive manner and cooperate with commitment to meet the gap. Vygotsky's (1978) theory of mediation in the ZPD places continuous evaluation, or assessment with specific feedback on the novice's ability to solve problems, as an essential step in the development towards expertise.

This theme highlighted the importance of cultural competence on the sides of both novices and experts; understanding and respecting each other despite differences, and in particular, to promote the participation of students in group activities, as well as providing appropriate feedback in a manner

acceptable for their culture. Participants perceived barriers to join the informal interactions and learning in situatedness constraining their cognitive development. Those who qualified, through self-directed learning and peer-learning, overcame this barrier.

The concept of CoP as described by Genzen and Krasowski (2007) suggests that the junior members' need to enter the CoP, be recognised and encouraged by the senior members and form relationships that promote social learning, internalising the values and practices of the community. In this study, the CoP referred to the academic culture and practices of departments in which the training was hosted. In the highly polarised communities in the higher education context of SA, the complexity of entry and participation by registrars seemed to have been blocked. In addition, there were reports that the departmental CoPs were not functional due to the power clashes amongst consultants and hierarchical relationships, thus novice registrars were not exposed to the culture and practices of the profession and did not internalise these aspects.

In terms of Bronfenbrenner's (1977) Human Ecology theory, various environmental factors in the postgraduate training impacted on the participants' learning. Racial and socio-cultural diversity which the participants saw as differences would be a macro- level concept. Lack of guidelines from the College, poor supervision and mediation, and a non-conducive departmental culture would be meso-level. The challenges with employer's policies and the national level CoP and its power affiliations may reflect the exo-level concept. The individual factors such as the participant's family environment represented the micro- level.

Relation of Theme 2 to the theories:

Theme-2 focussed on the importance of relationships. Relationships between students and their teachers are a vital part of learning as they form the basis of understanding each other's strength, weaknesses and potential for growth. It denotes a two-way communication and in the context of a registrar and consultant, it reflects a one-on-one engagement, during formal and informal learning opportunities. The consultant should preferably understand the registrar and realise his or her current capabilities and how to facilitate step-by-step growth towards the development of expertise. It entails mediation by scaffolding. Similarly, the registrar should take account of the personality of the consultant and adjust to it. Preferably, they should be able to find ways to approach him or her for advice despite personality differences. For example, consultants with an introverted or reserved personality may appear unapproachable. Registrars should receive instructions and remarks, comments or feedback from the consultant in a positive constructive manner. Such an approach would promote learning in the ZPD and legitimise participation in the CoP for registrars.

In the real world, however, the confounding factors such as race, gender, socio-economic status and religion, either separately or collectively, influence learning communities and their relationships. In the South African context, the scars of apartheid overshadowed the feelings towards different others, as revealed by the Black registrars who felt the remarks from the White and Indian consultants were harsh

and negative. The Black registrars perceived that there were assumptions of inferiority about them and that it damaged their confidence and their relationships with the consultants. Lack of mentorship was described as prevalent by the participant registrars in this study, substantiating the absence of one-on-one mediation by the consultants.

The findings on relationships provided an opportunity to reflect on the strengths, and gaps of Vygotsky's (1978) cognitive apprenticeship model. The researcher noticed that whilst the processes in mentoring and coaching in the model are reflective of cognitive development towards expertise knowledge and skills, the sociological domain of the model did not mention the importance of relationships. It only addresses peer learning and learner's motivation related to social interactions with peers. However, in the present study, relationships seem to have emerged as an important factor in the social domain. Other studies that have applied this model also did not address the need to consider relationships and how the background diversity of students and lecturers influenced their relationships and learning (Taylor & Care, 1999). Shaddel et al. (2016) also tested this model in postgraduate psychiatry education after finding value with undergraduate students and reported that a greater awareness of its cognitive components was needed. The authors did not, however, mention any challenges with the racial or socio-cultural aspects. In the current study, the data revealed that the lack of supervision and coaching led to failure in cognitive development as expressed by the participants who left their programme. The lack of supervision and failure in establishing sound relationships were attributed to racial and socio-cultural differences.

On contrary, Cruess et al., (2008) who used the cognitive apprenticeship model, described effective role modelling by the consultants or medical specialist physicians in educating their interns in the UK. They described the attributes of the effective role model as being compassionate, honest, and having integrity. Equally important was an ability to maintain interpersonal relationships, showing enthusiasm for practice and teaching, and an unwavering effort to thrive for excellence. Those findings correlate with the researcher's findings. The authors also warned that the institutions tend to accept that the clinical staff members' high work load led to insufficient time for teaching. A lack of institutional support for teaching emerged as a contributor to a lack of forming relationships between students and clinical teachers (Cruess et al., 2008). In the present study, constraints in the contact time with the consultants was also reported and was conceived as partly due to consultants having other commitments in service provision and research projects. It raises a question of why the registrars and consultants could not work together, as it would promote situated learning. The implicit meaning of reluctance in performing tasks together may have been due to the lack of relationships.

Strengths and gaps in the concepts of socio-cognitive mentoring:

The researcher noticed that Collin's (1987) cognitive apprenticeship model did not recognise the original idea of mediation in the ZPD in its domains of training processes and sequences. Dennen (2003) re-evaluated the cognitive apprenticeship model in education and claimed that the scaffolding part of

the process in particular, had significant applications within the ZPD for the student under mediation, hence, the integration of Vygotskian theory into the cognitive apprenticeship model. Scaffolding is a metaphor in mentoring: a structure that is put in place to help learners reach their goals and is removed gradually as it is no longer needed. In practice it is a learner-centred strategy because the mentor has to have the adaptability and creativity to plan and adjust to the learner's needs in gradually reaching the metacognitive level of knowledge, skills and values. The adjustments in scaffolding should happen according to the novice's current ability and level of cognition, a core concept of Vygotsky's ZPD (1978). Dennen (2003) added that scaffolding affects learners both cognitively and emotionally, impacting not only on the learner's skills and knowledge, but also the learner's motivation and confidence when approaching a task. The emotional aspect is related to how the MKO supports the novice in dealing with fear of failing in various ways including motivation and encouragement.

Socio-cultural aspects were also very prominent in the Vygotsky's (1978) concept of mediation. According to Vygotsky, human cognition is a social process where learning and intelligence are initiated and developed in society or culture. Social interaction is the basis and plays an essential role in the development of cognition. Vygotsky claimed that learning occurs on two levels: through interaction with others followed by being internalised into one's mental system. Although focussed on the socio-cognitive process of conceptual development, there was less emphasis on the personal differences between the mentor and mentee. It may also be that the original concept was founded in the context of school children, although many others have tried and tested the Vygotsky's socio-cultural development theory in adult learning contexts (Wass, 2012; Bekiryazıcı, 2015). In the current study, participants were adult learners and their socio-cultural outlook had been shaped by their journey during their school and undergraduate studies, influenced by an apartheid past, and then they experienced working as general practitioners in the post-apartheid era. In light of this, the present study focussed particularly on the core concept of the ZPD applied in the formative learning process of registrars, that required mediation by the consultants and senior peers.

Constructs in Theme-2 suggest that power relations within the departmental communities made junior members reluctant to participate in the problem-solving processes, which could have contributed towards their agency in the CoP. The socio-cultural learning theory of Lave and Wenger (1991) places the participation of novices as central to their development. To understand the novices' challenges, the type of opportunities the learners get or create to participate in the contextual learning of the discipline, and what they take out from their participation, should be questioned. Wenger (2010) described the impact on participation and agency of power within the CoP. If junior members feel that the CoP is closed or inaccessible or that they are not welcome, it may be seen as dismissal, neglect or exclusion to the CoP. Sheehan, Wilkinson and Billett's (2005) model provides introductory steps for the newcomer into the CoP through an initiation programme so that they can be properly introduced to senior members and relationships can be formed.

The departmental CoP in this study should comprise junior members who are the senior registrars in their last two years of the four-year programme, and senior members are the consultant educators. As colleagues they would work together on a daily basis and their social interactions should constitute learning in situatedness and problem solving. Through participation, the junior members should learn the cultures of the discipline, values of the profession, and the road map for growing into experts of the discipline. However, the discourses of participants revealed that these socio-cultural learning processes could not take place due to an inability to participate in the CoP and distrust that prevailed in the community. In relating to similar studies in South Africa, Bezuidenhout et al. (2011) reported alienation and a lack of engagement perceived by the novice registrars in a postgraduate programme. Those authors purported that the source of feeling alienated could be due to the lack of relationships that students expected to experience but did not have opportunities to develop.

Relationship emerged as an important factor in the learning of participants in this study. Bandura (2001) highlighted the importance of self-efficacy in medical students learning at workplaces. He argued that support, guidance and appreciation of the student's role and status within the workplace learning community is important for them to develop a personal agency and confidence that ultimately leads to self-efficacy. Bandura's social cognitive theory (1989) was based on the concept of developing or changing behaviour in people through learning in the social system. Perceptions by students on how peers and educators see themselves, affect their self-confidence and efficacy. Negative appraisals weaken the self-confidence and efficacy, whilst a supervisor's confidence in the student strengthens it. Bandura (2001) stressed the importance of continuous interaction between people in the learning environment, their behaviours and personal factors as well as their cognition. He referred to this interactive environment as expanded environment and a reciprocal causation model, highlighting their effects on one another. The current study revealed a rather restrictive medical speciality environment where interactions were hampered by the power and control for most of the participants' learning.

Emotions and physical states are part of life and thus will affect learners' interpretations of how they are perceived and how they perceive others in their learning environment (Illeris, 2002). Perceptions can in turn influence relationships in the workplace and learning is affected as people learn through relationships. Medical speciality training is mainly constituted by workplace learning where team-based, peer learning, informal learning, and contextual learning form a core in the learner's socio-cognitive development. Working hours, staff shortages, workplace infrastructure and policies form a physical context. Physical and social contexts, the type of task performed, and characteristics of the learner and the educator are the basic triad of success or failure of learning and teaching in this particular context. The triad can either promote or weaken the self-efficacy and personal agency of the learners by power, control and relationship as highlighted by Teunissen and Wilkison (2011).

Fogel's (1993) theory of human development explains the idea that mental capacity and a sense of self-confidence develop due to the continuous process of communication and relationship formation. This

theory in the realm of social, linguistic, neural and cognitive sciences recognises that to understand human development in a social context, everyday communication within the relationships of self and society needs to be addressed as they are the foundations for professional development (Fogel, 1993).

Whilst relationships are the vehicles of learning to develop cognitively, Goodman (2015) urged mentors and educators to strike a balance between their formal roles as guides or mentors and informal roles in befriending the students. It may underrate the discipline, assessment and giving feedback or instructions. When this balance is achieved, an effective relationship can flourish with the recognition of each other's background and history and what each can bring to the relationship to share and grow together. According to Goodman (2015), by using this approach, one can appreciate complex social and cultural identities and contribute to a development of a humanity aspect in any subject that is taught. The author emphasises that teaching through relationships allows opportunities for both student and teacher to engage by sharing conversations, experiences and understanding each other's cultural identities that may allow both parties to navigate training and learning in the complex social environment (Goodman, 2015).

Bradbury (2010) also stressed that the mentor should understand and respect the level of development in the novice, evaluate their beliefs about learning. The mentor should recognise the significance of their prior learning and contribution as a source for knowledge and utilise the expertise of both self and student in developing new ideas. This reflects reciprocity and interdependence in their relationship and places the mentor in the role of knowing and understanding the student in developing cognitively. Getting to know a person through social or informal interactions, especially in the context of the specialist discipline related problems, brings cooperative learning that equips both mentor and student for work-place collaboration. In this type of mentoring, the emphasis is placed on the novice and mentor working together, using the workplace as a platform for interaction and fostering a relationship. The core principles used in this mentoring are cultivating initiatives in inquiry, focusing attention on the novice's thinking and understanding, and discussing how problems are solved in the daily practice. This concept of a co-constructing or co-thinking relationship in learning, sets an essential difference from the Vygotskian theory of mediation by the MKO. For medical speciality education, the former type of mentoring maybe more suitable as the novices are medical practitioners with a significant need to be recognised for their contribution in the mentoring process, and to maintain relationships.

Reflecting on these theories illuminates how the lack of relationships in the postgraduate study of the participants influenced their learning negatively, whilst it also assists in explaining how two of the participants who qualified secured their learning and cognitive development through their relationships with their mentors.

5.6.2 Linking findings of Theme 1 to research questions 1 and 2 and the literature review

Data analysis and discussion in Theme 1 and sub-themes addressed the first research question of 'How did the participants conceive the racial and socio-cultural differences in their learning environment

through their experiences?' and the second research question 'If and how did they conceive these differences as having hampered their learning?'.

According to Dubow (1995), conceptions of 'race' have evolved over time from being based on ethnicity and biological origin to being related to social issues, moving towards the concept of being socially constructed. South African history has been characterised by social segregation since British colonialism, which was then further differentiated and entrenched during the apartheid period. Initially, ideas of 'race' had related to ethnic groups (Dubow, 1995). Under the apartheid government, skin colour was introduced to further differentiate between groups of people and the categories Black, White, Indian and Coloured were introduced. Subjugation accompanied the racialised social segregation with the unequal allocation of resources in housing, education, health, employment for 'races' other than 'White' (James & Lever, 2001). In South Africa, the wounds from the colonised history have been rooted deeply in the oppressed groups, and they are still freshly felt in many families.

Post-Apartheid, there was a shifting definition of 'race' as being socially constructed in a dynamic and emergent process (Gunaratnam, 2003). This is in agreement with Dolby (2001) who found that Black learners at one of the previously White secondary schools in South Africa, constructed race on their taste within the popular culture at the time. Whilst some students remained within the construction of race associated with conflict and division, others individually transgressed these borders and the former boundaries were blurred. Dolby's (2001), study did not however, look into how this had affected their learning. For this study, the researcher was concerned with the participants' individualistic constructions of 'race' during their own social existence, particularly how the racial differences may have influenced their learning.

Participants conceived racial differences, language use, social identities and cultural differences as learning barriers through their feeling that they were being treated differently. This manifested in a number of ways; through perceptions shaped from previous environments, influenced by the social division and inequalities of apartheid past, through language use that inhibited them from participating in informal learning opportunities, the culture of the departmental communities that underrated Black registrars, strained relationships that divided the peers, and a feeling of being excluded from the CoP, which collectively impaired their learning. In the researcher's co-construction with the participants, the inability to speak out and discuss these challenges openly was due to a lack of sound relationships between the parties.

A comparable study from South Africa by Bezuidenhout et al. (2011) reported alienation and lack of engagement perceived by the students in specialist training programmes. This was a cross-sectional study unpacking the participants' home, work, study and institutional experiences in an alienated group and an engaged group, based on their perceptions. Personal attributes and attitudes towards work-based learning, service work, home situations and social relations with mentors, all emerged as themes that

were different between the engaged and alienated groups. The authors also recognised that these hampered the development of cognition and metacognition in the students' learning by apprenticeship from their consultants. However, the study did not mention the racial and socio-cultural profiles of the participating students.

In other countries where minority groups are being marginalised and discriminated against at the work place or at a learning environment in higher education, there have been similar findings. A study by Carr and colleagues (2007) in the United States of America found that the faculty staff from an ethnic minority group felt discriminated against at their work place and through career progression. The data suggested that this could be overcome by having meetings and dialogues with colleagues to raise awareness of the problem, and through the faculty leadership promoting anti-discrimination campaigns at work place. Marginalisation of minorities in the learning environment was reported by Kaur & Gurnam (2009) in Malaysia, when economic refugees from surrounding countries shared their experiences of discrimination. South Africa's higher education landscape comprises diverse racial and socio-cultural groups. In the annual reports of the South African Human Rights Commission (2014, 2016), the disparity amongst different races, socio-economic and gender groups was still evident and the main contributor was the lack of transformation in the institutional culture. Also, the experiences of students have not changed indicating that the transformation policies have not been realised in most institutions. Those reports were focussed on undergraduate programmes, and there has not been any audit from the same committee into postgraduate programmes.

The reports stressed the language barriers in the higher education sector were still problematic for non-English and non-Afrikaans-speaking students that represent mainly Black students from poor under-resourced schools. The rate of drop-out from tertiary education due to a language barrier was staggering in this group, according to the survey of the Commissioner. The commissioner's recommendations were to arrange for multi-lingual lectures and tutorials to cater for diversity, but in practice the higher education institutions have budgetary and translating constraints. Students who wished to talk in their mother tongue in small group learning sessions should be allowed to do so, but other activities of improving language proficiency should also be provided such as skills in writing assignments, essays and writing in English for professional development. These can be related to the recent student protests in South Africa against restriction of access to learning by language barriers and calling for decolonisation of curricula at higher education institutions.

In the current study, participants were mostly immersed in English or Afrikaans language environments during their undergraduate and postgraduate learning. Although the day-to-day official language at the formal sessions and service work for this speciality is English, some participants felt that they missed out when the consultants and peers conversed in Afrikaans in their presence at informal discussions. Some participants who left the programme found that their language proficiency was not adequate for

the expectations of their consultants. Others felt that the accent of some of the consultants of a certain racial group was difficult to understand. Despite these experiences and perceptions, those in the qualified group managed to navigate these language challenges. There was no policy about language use for the postgraduate learning programme, and this implied that students were left to their own ability to manage the language differences.

5.6.3 Linking findings of Theme 4 to research question 3 and the literature review

Theme-4 'Resilience' relates to the third research question: 'How did the recently qualified students navigate these differences?'. A phenomenon of resilience emerged from the data that had not been part of research questions. In this study, resilience implies a combination of abilities to adapt to what the environment requires, to focus and persevere towards one's goal and to rebound after failures. Robertson and Cooper (2013) defined resilience in the same vein, as an ability to adapt in adversities.

In this study, the participants in both groups used a metaphor of having a 'thick skin' in their reflections, and their recommendations highlighted the ability to withstand the negative remarks and barriers they constructed as reported in Theme-1 'Racial and socio-cultural differences as barriers in learning'. Another metaphor used was 'lying low,' in this context meaning keeping a low profile when it comes to confronting the consultants or HODs with regards to service rosters, training format, assessment schedules, and feedback. They felt that their relationship would become strained by speaking out and that the chance of passing the exit examination would be jeopardised.

The concept of resilience has emerged as a vital and significant aspect of successful learning. Various attributes in a person constitute resilience. They include but are not limited to: an ability to bounce back after failures or facing adversities, an ability to overcome or regain strength in a short time. It is also an ability to demonstrate on-going proactive and protective measures, and behaviours during the phase of learning and growth by being focussed, perseverant and having the initiative to seek alternative approaches to overcome challenges (Robertson & Cooper, 2013). These characteristics were apparent in the findings in this study.

Robertson and Cooper (2013) unpacked resilience as being built by psychological and behavioural components of the individual. Behavioural attributes include adaptability, confidence, social support and purposefulness. For resilience to develop, exposure to challenging experiences in the past and present is required. This relates back to Holling's (1973) and Bronfenbrenner's (1977) theories of ecology and human ecology systems and their impact on one's behaviour and attitudes. The psychological health of the individual contributes to the response to adversity in a positive or negative way. Depression, anxiety or organic and functional disorders of the hypothalamic-pituitary axis can influence the way people respond to events. Ozbay et al. (2007) shared similar ideas about developing resilience, but added that the availability of social support and relationships with role models were important factors. These constructs resonate with the study findings.

Some participants who had qualified had the ability to initiate engagement with the consultants from a previously dominant background and the ability to self-direct alternative approaches in learning. An ability to negotiate with the differences in personalities and ability to navigate their way through the racial and socio-cultural differences also provide another dimension to the individualised concept of resilience.

Robertson and Cooper (2013) and other researchers found that resilience can be trained and developed in amenable people who are going through difficulties in their life. Training can be done through workshops, support groups or personal mentoring (Proudfoot, Corr, Guest and Dunn, 2009). Others found that biochemical parameters in the blood of participants under training changed over time during the development of resilience and productivity (Sood, Prasad, Schroeder, and Varkey, 2011). McAllister & McKinnon (2008) studied resilience training in nursing education and recommended incorporating it into the formal curriculum of health science programmes to prepare the candidates for better learning and work-based practice outcomes.

Participants who had qualified also showed ability to deal with cultural differences. McLean (2012) recommended educating medical students in clinical practice through a multifocal lens by taking account of different cultural beliefs and practices in patients whom they treat. She stated that it can be achieved by the lecturers and mentors through role modelling their cultural competence to the students. Cultural competence starts by self-reflection or introspection. Dogra & Wass (2006) reported their assessment of medical students' awareness and understanding of cultural diversity in the United Kingdom and recommended the best way of assessing this was through surveys combined with reflective journals and role play workshops.

Self-directed learning was recommended by the group who had qualified as one of the contributory factors to their success, with the caution that while they used self-directed enquiry and navigation in the vast scope of the discipline, they needed considerable guidance from the consultants. Those in the group who had left felt that they required guidance on a daily basis. There are many definitions and interpretations of self-directed learning. In this study, the self-directed learning that qualified participants referred to was more of self-directed enquiry, meaning taking initiative in identifying problems and finding solutions, then approaching consultants for discussion. Their conception resonates with what Knowles (1975) described as self-directed learning being a process in which individuals take the initiative, with or without the help of others in finding out their learning needs, setting learning goals, identifying human and material resources they would need, formulating and using appropriate learning strategies, and evaluating themselves for the learning outcomes. Couper and Town (2016) reviewed self-directed learning in health professionals and reported factors that were likely to promote self-directed learning. He emphasised the relationship between learners and teachers or mentors, as well as self-motivation and confidence, group work and peer feedback, methods to track

progress including learning contracts, prior learning, experience in self-directed learning, individual learning styles, and propensity towards lifelong learning and self-efficacy. His report highlights that scaffolding and mentoring by the well-trained facilitator is essential in self-directed learning and opportunities for short reflections also enhance students' clinical reasoning. He concludes that with such a supportive environment, self-directed learning can promote lifelong learning in students, although empirical data were lacking, and it could also save time for the clinical faculty members from being heavily relied upon by students (Bok, 2013).

CHAPTER 6. CONCLUDING THOUGHTS

6.1 Realising the research aims, objectives and research questions

The findings of this study support the idea that there were different dimensions of race, language use, accent variances, social status and cultural identities constituting overall socio-cultural differences in the learning environment of the medical speciality-A programme. Participants in both groups perceived these as barriers to learning and progress. The exception was two participants in the group who had qualified who felt that rather, the challenges they faced were due to personalities of the consultants and peers. For the others, a racial barrier to learning was experienced through being treated differently from other peers by the consultants from historically dominant groups. Furthermore, barriers were experienced when an unknown language was used during informal discussions and when the culture of the departmental CoP was characterised by consultants who were perceived as exerting power, control and being oppressive.

Various alternative ways the participants who had qualified found to learn despite the personal differences and other learning challenges, emerged from the study. Based on their experiences, they recommended being resilient, mature, focussed, and to persevere and use self-directed learning. Participants in both groups also highlighted the need for the Black students to unite and support each other, whilst choosing not to fight certain battles to avoid confrontation with consultants who are involved in the exit examination. They proposed working in collaboration with peers from other universities in the same field, through sharing knowledge, learning approaches and by comparing themselves to peers on their level. The ability to navigate by conforming or adjusting to the culture of the departmental CoP, was identified as an important strategy. Personality differences or clashes could be overcome with resilience strategies such as adaptation or tolerance and understanding, so that relationships, which were important for learning in this context, could be initiated and maintained.

The findings of this study may directly benefit the current students in the programme while immersed in a diverse learning environment. Developing resilience and the associated attributes is, however, dependent on the personal capacity developed through specific past experiences and environments, thus may not be possible to transfer to others. Future research should look into how students can learn to develop resilience, especially when dealing with consultants and peers from a previously dominant background. It may be through mentoring by those who have already shown resilience and succeeded in learning, or through peer support groups. The conclusions however cannot be generalised from these two groups to other medical speciality educational groups as there may be different characteristics in students and consultants in other cohorts. Thus, there is an opportunity for further studies to explore how students in other cohorts perceive, construct and conceive the different dimensions of racial and socio-cultural diversity in their environments, how they impact on their learning, and approaches they have used so far to deal with them.

6.2 Limitations of the study

The main limitation was that the consultants were purposely not included in the recruitment and interviews to protect the participants from victimisation, as some of the participants that had left will still try to sit for the exit examination from outside the programme. By the time the findings of this study are published, the time limit for repeating the examination, two years after leaving the formal training programme, will have been reached. Excluding consultants from this study to protect these students had deprived the researcher of an opportunity to learn their perspectives. It is hoped that for future research, the consultants could be interviewed.

There may be limitations in the study methodology as it was a descriptive study of a particular set of individuals' conceptions in a particular timeframe of the given medical speciality programme. After the current study had been completed, academic selection criteria in the department of the researcher were improved. As the attributes of new student have changed it would make the findings of this study with the future similar studies less comparable. Moreover, theories applied in this study were more focussed in the educational and mentoring models of novices into experts, and theories relevant for inter-personal relationships and resilience were not included in the theoretical framework as these had emerged inductively from the rich data. Thus, this aspect was also a limitation that can be looked into by the future research. The generalisability of findings of this study may not be possible given the nature of limitations and qualitative nature of this study.

6.3 Implications

The researcher hopes that the findings may pave the way for introspection in both students and consultants currently in such programmes and other medical speciality programmes, encouraging them to negotiate meaningful relationships and understand the benefits to the learning process. At the same time, it is hoped that the findings may assist future students and their consultants to understand the importance of developing relationships and meaningful engagement for a successful learning environment. The findings also imply the need to include cross-cultural competence as part of the outcomes of medical programmes in both undergraduate and postgraduate studies. Bezuidenhout et al. (2011) also identified the emergence of relationships as being an important factor in an inclusive learning environment for novice registrars with an attempt to reduce feelings of alienation. These two studies support each other in foregrounding the need of cultural competence in medical speciality training in South Africa.

In South Africa, being immersing in another's culture may not necessarily bring about tolerance and competence due to the scars of previous divisions and inequalities. It would be more realistic to expect a change in perception and conceptions, and then a move towards behaviour change from all parties involved, through open, non-judgemental and non-defensive dialogues on an ongoing basis. This is the researcher's view and it needs to be proven or refuted by evidence-based research. In the meantime, it

is important for the students to realise alternative approaches such as developing resilience and adaptability to overcome obstacles in their educational process. The implication is that when students join the programme, developing their resilience is indicated as the contextual factors such as power relations and hierarchical structures in the departmental CoPs still exist in reality. While intentional educational programmes for developing resilience for the novice registrars are still in the distant future, these contextual factors may create tension or impediments for students to develop resilience. A possible way to proceed in this context may be to bring in external mediation or facilitation to seek means to develop cultural competence as a part of resilience. In addition, further studies in this area may shed light on how to move forward as adaptation will require involvement of all the parties concerned in the learning environment.

Another implication is in the recommendation of self-directed learning. According to the participants, consultants expected self-directed learning from the registrars. Qualified participants found self-directed learning helpful in their education, but it is noted that it may mean different things to different people. According to Bok (2013), self-directed learning alone cannot develop the student if there is no assistance or support from the environment. The inference is that consultants and HODs need to create learning environments that are supportive of self-directed learning, and that include facilitative relationships, curricular awareness of content and outcomes, scaffolded learning activities, keeping CoPs more accessible and inclusive, and most importantly, continuous formative assessment with constructive feedback.

Lastly, there is an implication that the registrars should adapt to the culture of the department portrayed by the consultants and the community. Following the idea of Lave and Wenger's (1991) CoP, novice registrars should internalise the culture of the CoP that carries the norms and values of the profession. However, the findings focussed more on the dominant racial culture of departments as perceived by the participants. This posed another dimension to the 'culture' of the CoP and suggests the option of needing to re-structure organisational cultures to function in ways that are inclusive, co-operative and collaborative rather than authoritarian. From a social constructionist point of view, the variables existing in the departmental CoP and national CoPs in this discipline are complex, and intricately inter-connected to the hierarchical and authoritative structures, as well as to racial and socio-cultural backgrounds of role players. Thus, treading carefully in participation with consultants might be more practical for registrars than recommending adaptation or adopting the culture.

6.4 Recommendation for future research

Similar studies to explore contextual factors in the other medical specialities should be conducted in South Africa and if and how they impact on the education and learning of students should be documented.

6.5 Reflections

It is possible that the title of this study may receive some criticism for explicitly mentioning 'race'. The literature review identified 'race' as a major construct in South Africa's higher education arena, thus the researcher feels that it is relevant to be in the title. The data analysis followed the doubled-research approach, rather than the mid-stream method (Muzzin et al, 2013), framing the study problem with a strong 'racial construct' and then examining the data where the co-constructions revealed other factors that influenced relationships, thus taking the interpretations towards de-racializing. This was more visible during discussions with students from the group who had qualified on how they approached the differences and navigated their learning towards success.

After the researcher had immersed herself in the personal experiences of registrars throughout this study and by engagement with the participants and data from the interviews, the researcher learnt that students failed the exit exam and left the programme due to their inability to navigate their personal differences with peers and consultants, and not because they did not have the potential to become specialists. This study has made the researcher realise the importance of understanding the student's background, culture, and nature in making attempts to reach out to them, and to shape their learning and development. It is clear that both parties should make an effort to build the bridge of relationships that starts with knowing each other. Personally, it was a journey of discovering the intricacies of this inter-dependent position, for the consultants, and for the intermediary novices in their learning of the speciality. The responsibility that goes with the position of a consultant is to keep learning in academia whilst educating and facilitating student learning, whose ultimate success indicates fulfilment in their role. Learning together in collaboration starts with learning to know each other and form relationships. This notion implies that both registrars and consultants need to be resilient and adaptable to engage with each other in the path of lifelong learning.

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APPENDIX 1

INTERVIEW QUESTIONS

First-order questions are shown initially, and then followed by prompt questions in italics.

Part I	Learning History and environment	To understand the student's previous conceptions on the racial and socio-cultural diversity (RSCD) in the learning environment
Schooling	Could you please give a brief background of your learning history? (Primary, Secondary schooling and Undergraduate years)	
	Did you go to the school where the students are from a diverse racial and socio-cultural background?	
	How did your family feel about teachers from diverse backgrounds teaching you?	
	Did you study in group or alone?	
	If you studied alone, could you please explain why?	
	If you studied in a group, how was your experience in learning together or interacting with the others?	
	Have you ever learnt from a teacher who is from a diverse background and if so, describe how you experienced teaching and learning in this situation?	
Part II	Family and social history	Students grow up in the family or society surrounding and how these environments conceive the RSCD shapes the student's current perceptions
	How would you describe your family social, cultural and educational background?	
	How does your family see the integration of diverse racial groups at the learning institutes of South Africa (schools and universities)?	
	What is your family's perspective in your learning from/with people of diverse backgrounds?	
	Could you describe the community where you grow up regarding its social integration?	
	Could you describe the community where you currently live in regarding its social integration?	
	What is your opinion about this?	
Part III-	Undergraduate studies	As part of continuity in SCD experience, this question is asked
	How would you describe the learning environment (with respect to RSCD) in your medical school?	
	What was your experience in this aspect of your learning environment back then? How would you judge the situation?	
	What was your learning experience in this subject during your undergraduate years? *How does that experience impact on your learning in the PG training?*	These questions probe into student's academic level of undergraduate years which may contribute in the performance of current speciality and consequently how close and intense apprenticeship would be required for this student
	What was your experience in learning subjects like Maths, Chemistry and Biochemistry in your school and undergraduate years? *How does that affect your learning in the PG training?*	
Part IV	Postgraduate learning in speciality	
	How did you decide that this field of specialization is the one for you?	This may have impact on student's ability to

	What is your understanding of the requirements of this programme when you started/first joined/registered?	cope with the studies. In case of any deficiency the relationship between the student and the educator has to be even stronger to remedy it.
	How do you feel about your readiness to enter the programme at that time based on these requirements?	
	If you felt you were not ready, how did you catch up with the requirements after entering the programme and what was your experience in doing so?	
	What was helpful and what was not, in the course of catching up to the required level? And why do you think these are the case?	
	What do you think about the important personal attributes a student would need in this course?	
	How do you think about 'race' and 'ethnicity'?	To formulate student's conception of Race, Social and Cultural identities and inter-relation of them.
	How would you relate these to social classification of people?	
	What do you understand the notion of culture?	
	Do you feel there were RSCDs in your postgraduate training and learning environment?	
	If there were RSCDs in your PG learning environment, what was your experience of these in relation to your relationship with peers and consultants? How do these diversity relate to how you were treated by people in the environment?	
	How would you describe your relationship with the Head of Department (HoD)?	These will uncover the interaction and engagement between the students and educators
	With the consultants?	
	With your Mentor (if there is one)?	
	What was your experience when approaching the HoD or the consultants?	
	What is your understanding in these situations?	
	How would you explain your relationship with your peers? *How did this make you feel or how did this affect your learning?*	
	Was there is segregation amongst your peers *and if so, why do you think that is?*	
	Would you please comment on the informal learning discussions either one on one or in group?	
	How did these make you feel and what was they effect on your learning?	
Part V- Reflections and recommendations		
Could you share any lessons learnt from the journey (anything that one would have done differently) and any words of advice particularly?		
How did you manage to work through the challenges you mentioned so far in your PG learning?		To explore what their approach is in dealing with the SCD and how they manage to be successful
What is your opinion on why and how you were able to manage the challenges in these ways?		
What advice would you give to the other students who are still learning in this programme and may have the same challenges that you had and *why*?		

APPENDIX 2

The number under columns with participants' names related to the code sequence from the individual's interview transcript within the particular sections, the first 5 left the programme and the last 4 qualified.

Criteria: If 3 or more from green side and 2 or more from grey side shared

Criteria: If 3 or more from green side shared

Criteria: If 3 or more from grey side shared

TABLE 1. ANALYSIS OF CODING

	Pinky	**Lucille**	**Barbara**	**Phillip**	**Thomas**	**Daisy**	**Lisa**	**Mary**	**Theresa**
PRE-UNIVERSITY LEARNING SUB-THEMES OF CONCEPTIONS (Code numbering commences from '1' for this section)									
1. Believes the environment with racial and socio-cultural diversity supported the learning and growth		1,3,6,8,9, 10,11		1,2,3,4,5, 6,7,8,9,16 ,17,25	3,4,7,8,17	5,1,20		7,10,11,1 2,13,16,1 7	6,7,20
2. Believes that traditional single race and single socio-cultural environment limited in social interactions but did not affect learning			1,2,3,4,7, 8,9						
3. Believes that traditional single race and single socio-cultural environment supported the learning and growth	1,2,4,6,8, 10,12,13, 15						1,2,9,11		
4. Experienced that certain hegemonic teachers were very helpful and had real interest for students from other backgrounds in their heart		8,9,10,11	22	3,7,8,9,10 ,14	8,11,16				

	Pinky	Lucille	Barbara	Phillip	Thomas	Daisy	Lisa	Mary	Theresa
5. Did not get exposed to any other second language except English and coped well with it		2, 11	20		2,9,16				
6. Believes that didactic and practical aspects of curricular structure were helpful	3,5,9	4,6		3,16,18	3,5	1	3,11	3,11	4,9,12
7. Believes that learning in small group and through interactions is helpful	3,5,9,10,11	6		6	4,6,7,13,16	7,15		10,11,16	8,9,19
8. Sees discipline during school years contributes in one's growth	1,2,15	3		18, 25	10	15		12	
FAMILY BACKGROUND AND SOCIAL INTEGRATION SUB-THEMES OF CONCEPTIONS (Code numbering commences again from '1' for this section)									
9. Believes that family closeness, ambition, discipline and support towards education is important for one in overcoming challenges in learning environment	1,4,5	1,2,4,9	1,3	1	1,2	1,2	1,2,3	2	1,2
10. Parents were exposed to apartheid regime thus weary/guarded about their children's exposure to dominant groups		5,6		2,3,4,5		1,3,4,5	4,5		3
11. Believes that one should maintain self-identity, beliefs and ways of living and not transformed to those of hegemonic beliefs and ways				1,3,4,5					
UNDERGRADUATE LEARNING SUB-THEMES OF CONCEPTIONS (Code numbering commences again from '1' for this section)									
12. Exposed to racial and socio-cultural diversity and belonged to minority	2	2,3	2		2	6,7		5	5
13. Exposed to English only university		4,5		4	2		3	6	

	Pinky	Lucille	Barbara	Phillip	Thomas	Daisy	Lisa	Mary	Theresa
14. As minority, faced challenges in learning by language and culture differences	2,3,4					19,20,23, 24			26,27,28,3 0,31,32
15. Found the language barrier extremely challenging and affected her learning	2,3,4					6,7,8,14			7,8,9,10,11 ,13
16. Able to overcome the language barrier by resilience, self-directedness and team work with peers	8	6	11,16,17			10,11			
17. Experienced differential treatment by the lecturers/clinical teachers due to racial differences			6,7,8		9,11,13,1 4,15				18,19,20
18. The differential treatment was mainly through the use of language					12	13,14,23			18
19. The differential treatment was through the hegemonic assumptions that students from disadvantaged background are slow in learning, slow in expression, need more time in coping with the curriculum		12	17,20		9,13,19	20			30
20. Diverse lecturers were very approachable, helpful and also ready to listen to the student's problems in UG medicine		14,22	5	9				8	
21. Ready to put extra effort (study harder) to overcome hegemonic assumptions (demonstrates resilience)	8	6,9	16,17,20		17,19,20, 21,22	18,19,20		12,13	30,34
22. Showed initiation and enthusiasm to go extra miles						10		12,13	23,35
23. Believes maturity developed in previous learning helped dealing with diversity		17			16	11			
24. Believes that small group learning with peers was very helpful in learning as	5,7	19	19	6,7,8					33,35,40

		Pinky	Lucille	Barbara	Phillip	Thomas	Daisy	Lisa	Mary	Theresa
	well as team work and moral support to overcome the racial challenges									
25.	Self-confidence was achieved during UG study		16	16		27			19	
26.	Was exposed to the subject of speciality only superficially			23		28	26	23	14,15,16, 17	43,44
POSTGRADUATE LEARNING SUB-THEMES OF CONCEPTIONS	(Code numbering commences again from '1' for this section)									
27.	Decision to specialise in this discipline was taken as more appropriate for personal circumstances, such as due to realised other clinical disciplines needing abnormal hours of working	1	1, 2	1-6, 7-8	3, 5	1-4, 7	1,2	1,4	UG20-UG23	
	Exposure to diversity									
28.	Exposed to predominance of hegemonic language, either English or Afrikaans	20	40, 71-74			8	5,36			29
29.	Faced difficulties understanding different English-speaking accents and being unable to speak good English	54	37,38,40		21, 52	9				
30.	Belief that the White and Indian peers were given preferences because of their skin colour and the language they share with the consultants	50-60	71-76, 35-36	19, 100-101	31-37	51,62,65, 73,87,103 , 107-115	21, 50-56			9-10, 16, 24-29, 54-55
31.	Afrikaans-speaking consultants and peers would use their own language in the informal discussion even in the presence of other students who did not understand	21,22					21		4	24
	Curriculum									
32.	Was not fully aware of depth of requirements for the training (prior	4, 26	7	12, 13	7-8	10	7-8, 26	17,46	8-9, 12-13	8,32

		Pinky	Lucille	Barbara	Phillip	Thomas	Daisy	Lisa	Mary	Theresa
	learning, curricular outcomes and scope/depth of scope) within the first 2 years of training									
33.	Depth and width of the scope in the discipline posed challenges if follows self-study only without guidance		3-4	23	13	42, 45				
34.	Daily service practices do not reflect expected outcomes in summative exams. This was realized much later.		3-4	23	13	42, 45				13
35.	Lack of clarity on the curriculum and changes in the curriculum without proper introduction disrupted the learning experience	32, 40				20	31	17		8, 31-33
	Departmental structure									
36.	Experienced rapid turnover of academic staff (HOD and consultants) during training period that destabilised the learning		45	14, 24-25, 52, 65		11, 15-18	39	26		
37.	Felt departmental structure was disorganised and did not have a structured plan for registrar training	11	8, 11, 14, 19, 32, 46, 80	9,10, 12, 16, 18, 50	25, 27	24	46-47	5,6		5
38.	Academic time was not protected as the departmental focus was on service delivery that does not relate to preparation for the exam				14	22, 44	13-16, 20, 44-45			
	Academic supervision									
39.	Felt there was disjointed expectations between consultants and registrars (self-study versus guidance needed, self-initiation versus real ability to identify problems)		26, 32			12-13	18, 20			
40.	Experienced lack of positive feedback from consultants and negative remarks affected confidence and motivation	14,16		28, 61		29-30		19,45		21-23

		Pinky	Lucille	Barbara	Phillip	Thomas	Daisy	Lisa	Mary	Theresa
41.	Consultants not willing to take time to assist with registrar's learning difficulties due to being too busy and not willing to have one-on-one engagements	25, 36	23-24		23	38, 48				
42.	Lacking guidance from consultants in situated learning (solving real life problems)	35	47	37-38	15-18, 47	27-28, 41				
43.	Found consultants began to assist when identified the problems, initiated enquiry and offered possible solutions						41,42,44		17,22,23, 24	
44.	Had to resort to self-learning and assistance from outside as lack of consultant's supervision	45, 47		43		36-37, 46-47	24-25, 27		16	18
45.	Consultants had different areas of interest and some were not able to give clear answers to registrars' questions thus caused confusion	49	27-28	20-21		19				
	Formative learning									
46.	Received formal programme with academic presentations	5	21	62		30	14	19,28,30	10	
47.	There was no formative assessments in between level promoting summative assessments	34	11,19	16	43	82	28		26	
48.	The expectation from the consultants was to self-study and assistance on how to solve problems requires initiation from the registrar's side						42		22,31	
49.	Experienced positive formative learning with regular learning sessions from at least one consultant, changing the self-learning to partially guided learning						29	9-11, 13	7, 32	
	Experience with summative									

		Pinky	Lucille	Barbara	Phillip	Thomas	Daisy	Lisa	Mary	Theresa
50.	Summative assessment requirements and formative learning were not aligned resulting in lack of preparation and negative outcome	8	15-16		28	21,23,25-26, 31-32, 52, 58-59, 66-70	28, 30		10-11, 26	13
51.	Inadequate feedback from formative and summative assessments resulting in inadequate remedial action negatively affected outcome			31	38-42	33-35, 77-78	34	12	27-28	
52.	Peers were divided by the differential treatment by the consultants in the way comments were made during presentations or by their socio-cultural differences		36,37,40	17,19		114				
53.	Able to collaborate with peer from other university to find out how others are learning and what they are learning						11		33	52
	Relationship with HOD and/or consultants									
54.	Fearful to speak out about the challenges to the powerful consultants, traumatised by negative remarks and harsh criticism, and fearful of victimisation	12-13, 30, 46	20	15, 28, 39-40	28-30, 46	62	17, 33, 57	19, 21,23-27,45		57
55.	Power issues amongst consultants led to negative learning environment	31	29-30, 42, 68	56, 64, 94, 106				21,33		
56.	Realising that one needs guidance of more knowledgeable others in learning this speciality	38,39,59	29,32		16,17,41	23	40		16	53
57.	Differential treatment by consultant towards registrars, causing conflict amongst peers		48-49	76-77		101, 106, 115	58			
	How registrars were affected									
58.	Lack of mentorship or supervision, language barriers, power exertions and	8,10,18,52,60	61-63,66,68	92-93, 102	53-55	111,114				28

		Pinky	Lucille	Barbara	Phillip	Thomas	Daisy	Lisa	Mary	Theresa
	broken relationships negatively affected learning									
59.	Lost self-confidence and confidence in learning	8	13,68	40	19	111		27		12
60.	Could not practise agency as no participation in activities with peers and consultants in CoP	18			18	92		19 (in reflection s)		20 (in reflections)
61.	Lack of formative training (tasks, engagements and evaluation) is a major problem with mainly book learning and lack of culture supporting learning		51, 52	41-42		89-92, 95, 98	38			
62.	Self-motivated, self-initiative and self-directed learning						9,10,15,2 7,29,38	12	13,18,27, 29	23
63.	Felt as if excluded due to her single status whilst others were married with children	62				115				
	Conceptions on the racial and socio-cultural differences									
64.	Believes he/she was treated differently due to skin colour (race) through use of dominant language, power and control	51-58	41, 44		20	97	50-53			30, 46, 53, 58-59
65.	Problems related to formative learning experiences were mainly due to personality clashes with certain consultant thus cannot attribute to racial differences	19	69-70			60-61, 83-86				
66.	The departmental culture expects registrars to be submissive			66-67	35,50					100
REFLECTIONS AND RECOMMENDATIONS	(Code numbering commences again from '1' for this section)									
67.	believes mentoring, coaching and modelling by the more knowledgeable	1,8		1			1,4,8	1,17,36,4 5	1	1,2,3,6,16

	Pinky	Lucille	Barbara	Phillip	Thomas	Daisy	Lisa	Mary	Theresa
other (mentor) would be crucial but self-directed learning and peer learning are also important									
68. Believes one on one mediation with the mentor consultant is what is required		1		1	1		1		
69. Recommends solving real life problems together with the consultants and peers						11	27	3	11,17
70. The people, social integration and culture of the department not supportive and hindered the positive learning experience in the PG training	2		2	2		2		2	
71. Believes upbringing and previous environments shaped the way one thinks, behaves or values	3	3	3	3	4	3	21	4	22
72. Recommending registrars to be focussed on the main goal	44	64 (PG)	6			16	38	2,9,23	
73. Be submissive to get learning from the consultants or to escape biases in the exam		4,7							48 (SP)
74. Registrars should initiate enquiry with the consultants				8			29,41	3,10	25
75. Warning against confrontational approach in dealing with consultants					10	49	8		24

APPENDIX 3

TABLE 2. ANALYSIS OF SUB-THEMES

Pre-university sub-themes of constructions	**Group 1 (3/5 minimum sharing) Total 5**	**Group 2 (3/4 minimum sharing) Total 4**	**Both groups (3/5 plus 2/4 min sharing) total 9**
Believes the environment with racial and socio-cultural diversity supported the learning and growth	3	3	6
Experienced that certain hegemonic teachers were very helpful and had real interest for students from other backgrounds in their heart	4	0	
Did not get exposed to any other second language except English and coped well with it	3	0	
Believes that didactic and practical aspects of curricular structure were helpful	4	4	8
Believes that learning in small group and through interactions is helpful	4	3	7
Sees discipline during school years contributes in one's growth	4	2	6

Family background and social integration sub-themes of constructions	**Group 1 (3/5 minimum sharing) Total 5**	**Group 2 (3/4 minimum sharing) Total 4**	**Both groups (3/5 plus 2/4 min sharing) total 9**
Believes that family closeness, ambition, discipline and support towards education is important for one in overcoming challenges in learning environment	5	4	9
Felt that urban schools (which may be racially mixed) are better resourced thus would benefit their children's growth and education	0	3	
Parents were happy with missionary teachers and their ways of teaching	3	0	
exposure to international diverse teachers and English language was seen by them as advantage for their children's growth	0	3	
Parents were exposed to apartheid regime thus weary/guarded about their children's exposure to dominant groups	2	3	

Undergraduate sub-themes of constructions	**Group 1 (3/5 minimum sharing) Total 5**	**Group 2 (3/4 minimum sharing) Total 4**	**Both groups (3/5 plus 2/4 min sharing) total 9**
Decision to take up Medicine was self-motivated	0	4	
Exposed to racial and socio-cultural diversity and belonged to minority	4	3	7
Exposed to English only university	3	2	5
Able to overcome the language barrier by resilience, self-directedness and team work with peers	3	1	
The differential treatment was through the assumptions that students from disadvantaged background are slow in learning, slow in expression, need more time in coping with the curriculum	3	2	5
Diverse lecturers were very approachable, helpful and also ready to listen to the student's problems in UG medicine	3	1	

Ready to put extra effort (study harder) to overcome hegemonic assumptions (demonstrates resilience)	4	3	7
Showed initiation and enthusiasm to go extra miles	0	3	
Believes that small group learning with peers was very helpful in learning as well as team work and moral support to overcome the racial challenges	4	1	
Self-confidence was achieved during UG study	3	1	
Was exposed to the subject of specialty only superficially	3	4	7

Postgraduate speciality training- sub-themes of constructions	**Group 1 (3/5 minimum sharing) Total 5**	**Group 2 (3/4 minimum sharing) Total 4**	**Both groups (3/5 plus 2/4 min sharing) total 9**
Decision to specialize in this subject			
Experienced superficial exposure of subjected related to the specialization but still this was able to ignite interest in the discipline	2	2	
Decision to specialize in this discipline was taken as more appropriate for personal circumstances, such as due to realized other clinical disciplines needing abnormal hours of working	5	3	
Exposure to diversity			
Exposed to racial and socio-cultural diversity in PG studies	1	3	
Exposed to predominance of hegemonic language, either English or Afrikaans	3	2	5
Faced difficulties understanding different English-speaking accents and being unable to speak good English	4	0	
Belief that the White and Indian peers were given preferences because of their skin color and the language they share with the consultants	5	2	7
Curriculum			
Was not fully aware of depth of requirements for the training (prior learning, curricular outcomes and scope/depth of scope) within the first 2 years of training	5	4	9
Depth and width of the scope in the discipline posed challenges if follows self-study only without guidance	4	0	
Daily service practices do not reflect expected outcomes in summative exams. This was realized much later.	4	1	
Lack of clarity on the curriculum and changes in the curriculum without proper introduction disrupted the learning experience	1	4	
Departmental structure			
Experienced rapid turnover of academic staff (HOD and consultants) during training period that destabilized the learning	3	2	5
Felt departmental structure was disorganised and did not have a structured plan for registrar training	5	3	
Academic supervision			
Experienced lack of positive feedback from consultants and negative remarks affected confidence and motivation	3	2	5
Consultants not willing to take time to assist with registrar's learning difficulties due to being too busy and not willing to have one-on-one engagements	4	0	

Postgraduate speciality training- sub-themes of constructions	**Group 1 (3/5 minimum sharing) Total 5**	**Group 2 (3/4 minimum sharing) Total 4**	**Both groups (3/5 plus 2/4 min sharing) total 9**
Lacking guidance from consultants in situated learning (solving real life problems)	5	0	
Had to resort to self-learning and assistance from outside as lack of consultant's supervision	3	3	6
Consultants had different areas of interest and some were not able to give clear answers to registrars' questions thus caused confusion	4	0	
Formative learning			
Received formal programme with academic presentations	4	3	
There was no formative assessments in between level promoting summative assessments	5	2	
Experienced positive formative learning with regular learning sessions from at least one consultant, changing the self-learning to partially guided learning	0	3	
Experience with summative			
Summative assessment requirements and formative learning were not aligned resulting in lack of preparation and negative outcome	4	3	7
Inadequate feedback from formative and summative assessments resulting in inadequate remedial action negatively affected outcome	3	3	6
Peer learning and relationships			
Peers were divided by the differential treatment by the consultants in the way comments were made during presentations or by their socio-cultural differences	3	0	
Able to collaborate with peer from other university to find out how others are learning and what they are learning	0	3	
Relationship with HOD and/or consultants			
Fearful to speak out about the challenges to the powerful consultants, traumatized by negative remarks and harsh criticism, and fearful of victimization	5	3	8
Power issues amongst consultants led to negative learning environment	3	1	
Realizing that one needs guidance of more knowledgeable others in learning this specialty	4	3	7
Differential treatment by consultant towards registrars, causing conflict amongst peers	3	1	
How registrars were affected			
Lack of mentorship or supervision, language barriers, power exertions and broken relationships negatively affected learning	5	1	
Lost self-confidence and confidence in learning	5	2	7
Recovered self-confidence by persisting on learning using alternative approaches (peer learning or self-directed or self-initiated inquiry)	0	4	
Could not participation in activities with peers and consultants in CoP due to power issues	3	2	5

Postgraduate speciality training- sub-themes of constructions	**Group 1 (3/5 minimum sharing) Total 5**	**Group 2 (3/4 minimum sharing) Total 4**	**Both groups (3/5 plus 2/4 min sharing) total 9**
Conceptions regarding root of the problems			
Lack of formative training (tasks, engagements and evaluation) is a major problem with mainly book learning and lack of culture supporting learning	3	1	
How registrars overcame the challenges			
Committed to learn what the gap was in the exam and ready to fix it, showing resilience and innovation to fill the gaps	0	3	
Self-motivated, self-initiative and self-directed learning	0	4	
Resilience, perseverance, and encouragement from peers necessary to complete specialty	1	4	
Conceptions on gender issues			
No gender issues	0	4	
Cannot confirm gender issues as there was no peer of different gender	2	0	
Conceptions on the racial and socio-cultural differences			
Believes he/she was treated differently due to skin color (race) through use of dominant language, power and control	4	2	6
Problems related to formative learning experiences were mainly due to personality clashes with certain consultant thus cannot attribute to racial differences	3	0	

Reflections and recommendations: sub-themes of constructions	**Group 1 (3/5 minimum sharing) Total 5**	**Group 2 (3/4 minimum sharing) Total 4**	**Both groups (3/5 plus 2/4 min sharing) total 9**
believes mentoring, coaching and modelling by the more knowledgeable other (mentor) would be crucial but self-directed learning and peer learning are also important	2	4	
Believes one on one mediation with the mentor consultant is what is required	3	1	
Recommends solving real life problems together with the consultants and peers	0	4	
The people, social integration and culture of the department not supportive and hindered the positive learning experience in the PG training	3	2	5
Believes upbringing and previous environments shaped the way one thinks, behaves or values	5	4	9
Recommending registrars to be focused on the main goal	3	3	6
Registrars should initiate enquiry with the consultants	1	3	
Warning against confrontational approach in dealing with consultants	1	3	

APPENDIX 4
TRANSCRIPT SELECTED EXTRACTS

Extract 42

Interviewer: In wrapping up, can I ask if you were ever treated differently because of your skin colour in your UG and PG years and if so, please can you give example of how it happened (you can mention the racial identities).

Daisy: Definitely in the UG and also in PG. In UG, I was really in minority group. In PG, I was even in majority group. Nonetheless, discrimination was all the way. In UG, it was through limited access to material, language, lack of guidance etc. but in PG due to transformation policies, these did not happen but mainly through language expectations. It was assumed that my knowledge was poor or I did not know how to express myself because I talked slowly as I had to translate English to vernacular and back there again. So, for me, that was disrespectful towards my background.

Interviewer: If you were treated differently this way, please also verify how that contrasts with the way in which other students/registrars were treated. Please kindly give me example(s).

Daisy: The contrast was the White peers were perceived as performing well and yet if you listen to them carefully, they were not answering the questions, they were just talking. So, these assumptions based on race and skin colour, for me is racism.

Interviewer: Do you think they were treated differently because of their skin colour and also please can you give example or explain to substantiate your concept?

Daisy: No need to have evidence for this. We witnessed this.

Interviewer: How being treated differently affected or influenced your relations with peers and the (lecturers/tutors/consultants)? Can you please give example of how it was affected?

Daisy: Yes, although one tries to be diplomatic, I don't think we will ever recover from the trauma. It made my relationship with Black African peers stronger.

Interviewer: Are you aware of peers who had similar experiences and how did you and the peers talk about this?

Daisy: Yes, we did. But not with those who appeared to be spying on us.

Interviewer: Did they do anything about it?

Daisy: No, they will not.

Interviewer: Reasons for why they did or did not do about it?

Daisy: The powers to be are still very powerful and they can bring you down like hell.

Extract 43

Interviewer: Let us talk about your family. Where were they staying and what did they do?

Phillip: Oh, my family is so…simple and not so highly educated but they supported our education very much and taught us never to give up what we believe in. So, me and my siblings all were supported to get professional education.

In terms of dealing with the White teachers in my secondary school, my family actually sees the things the way I see them. They are in support of what is happening. They believe that if you let these people continue with this racial thing, then you are going to allow, or let your own kids fight this battle. If you… if you don't deal with this then your kids will have to deal with it. And you should look at what role you have in this scenario. And try and do your best, that's the least you can do. Because what my dad was saying is, you can… you can suck up and please them and get what you want. It's very simple and easy, and that's more or less what everyone does. But this kind of situation, the one that you are in, is… is… it's life changing. It's very heavy. And if you guys win this you would have done it not for you but for a whole lot of people. So, my family is in great support of the fact that, try and do as much as you can but don't lose your own beliefs and identity, your roots. Believe in yourself and try and do what you think is right. That's what my father said.

Interviewer: Try and do what you think is right.

Phillip: Ja. And… and never succumb… and never succumb to being demeaned by… by someone, you know for who you are… for the colour, for the way you talk…that's your own identity.

Interviewer: What did he mean by demeaning?

Phillip: When White or Indian people ask Black person to change from what they are or forced to accept that they cannot do certain things.

Extract 44 *Interviewer: How was your relationship with the HOD and consultants?*

Phillip: Ja. Because what I'm thinking is that, we had a very good relationship. Not so bad relationship at the beginning. But as soon as you don't do what you are told. You don't follow the orders, then they start treating you differently. So, I felt that, from their point of view, I was a rebellious person, and they even told the junior registrars not to associate with me.

Interviewer: Do you want to elaborate on what they asked and that you did not do?

Phillip: Many issues for example, rosters, calls, overtime etc, and the last one was the mock. I fought against all odds to be allowed to write the college exam because my time was coming up and I did not see myself passing the mocks.

Interviewer: So, you did write?

Phillip: Yes, but did not pass. Then I was meant to go back to the mocks again but I felt there would be no difference at all if the situation in the department does not change.

Interviewer: I see. So, what do you think was the basis of the strained relationship in these cases? Does it have to do with people or their differences in background?

Phillip: Yes, there's a culture of dictatorship and that culture is what's Black. You know like, if you are African, there's no reason for you not to listen to me, because I am Indian. Who do you think you are, type of… you know, that's what I think. It's that type of thing of, who are you to tell me that you want to do this. As if they were doing a favour for you through out, and if anything, you need to appreciate that. And as soon as you don't appreciate that then they will show you who they are. And racially, you know, not from Indian to Indian. Indian to African.

Everything originates from… from the fact that it's Indian, African. Because if it was an Indian-Indian interaction, they… Like if I was Indian, they would have still let me write the exam. Without the frustration, like how they did with the juniors that failed even more than me. My experience would be different because they didn't have a problem with the Indian registrar. The onus is on me, they're like, I failed on my own. You know? I would have had that. You know. But… but there's this thing that you don't only fail but you're frustrated through it. You go through the frustration, you write through the frustration. Stay through. That is what they… because the point is, who are you? As a African to think that you can tell me. You know that type of thing. That's what I sensed. That's what I sensed, that it originates from a racial point that, it's an… it's an Indian to African… not…Indian to Indian.

Interviewer: So, the Black peers, who had left the programme, were they in the same belief as you?

Phillip: Yes. They will not succumb because they also believed the orders we received did not make sense for us…

Extract 45

Interviewer: In wrapping up, can I ask if you were ever treated differently because of your skin colour and if so, please can you give example of how it happened (you can mention the racial identities).

Pinky: UG learning, as an Indian female student, I had no problems with being treated differently even though I was at an Afrikaans university. All races seemed to get along. I lived at the medical residence throughout my undergraduate training and in the residence as well there was no unfair treatment. PG learning was a bit different I felt. I returned to the same institution for my PG training and as a registrar, majority of the registrars at the time I started were White Afrikaans. I felt excluded because of the language barrier firstly as I wasn't fluent in Afrikaans even though I understand the language. There was one particular Consultant, White male Afrikaans-speaking, who always favoured the other Afrikaans-speaking registrars. He always gave them information freely and I was left out of the loop, so I felt I was not receiving the same

attention as the others were. I cannot confirm if that had any gender issue in it because there was no male Registrar to compare his actions with. As the years past in the training, one of the registrars who had passed the College exam was made the Head of Department of my discipline. At that stage, we were a good mixture of races, Black, White and Indian, and also a fair distribution of male and female too. So, when she became HOD the atmosphere in the department, things got sour very quickly and she [White Afrikaans] started favouring the White Afrikaans registrars. So, there was bias in my training, we all could blatantly see it happening before our eyes, but felt we couldn't dispute it or question it as we as registrars and I as an individual in that situation felt that we would be victimised.

Extract 46

Interviewer: What made you decide for medicine?

Lucille: My parents had a vision for me to take up medicine, because there were sick people in the village that had no doctor at the clinic that could help, so they always wanted one of us to be a doctor

Interviewer: I see. Then when you went to university, which is still under apartheid regime, am I right?

Lucille: Ja.

Interviewer: Did the situation change abruptly?

Lucille: Ja, it changed because you know when I went to university I started going to the university which was more of an Indian dominance, yes I went there. It was very tough because my first year it was very very difficult, you know.

Interviewer: In which aspects?

Lucille: In many aspects. Because you had to adapt to all the races, different norms and whatever the accent. I was really struggling. Because you know the way Indians speak I couldn't understand. Because I was never exposed to that type of language.

Interviewer: Ah, ok.

Lucille: I am from the other province nearby and my accent you know is very strong as well. Ja, So, it really gave me a culture shock.

Extract 47

Interviewer: Did you translate everything?

Theresa: No, most of the lectures were in English and they taught them in English. But because of the Afrikaans background the lecturers themselves were struggling with English in terms of explaining…

Interviewer: Did you have textbooks that are written in English?

Theresa: Ja, we used English text books and the notes more often not in English. Occasionally we'd get a set of notes that are half English and half Afrikaans so it made it a bit difficult, we had to take them back to the lecturers. But we sort of found our way around it.

Interviewer: How did you find the other ways?

Theresa: We went straight to the lecturer and asked for help, if he had any English books and he directed us to buy one book, so practically we just read the books and not depended on the notes and lectures.

Interviewer: Did you find the book in the library?

Theresa: not always. They only stocked Afrikaans books so sometimes we got the books from the Black seniors. We had to share a book amongst 5-6 students

Interviewer: So, if you had any problem understanding the book, what did you do?

Theresa: We first used the dictionary in our group to see if we could understand. We also asked some senior Black students at the hostel to help us explain. Otherwise we just went back to the lecturer who gave lecture in that chapter.

Interviewer: Ok, how was your experience in approaching them?

Theresa: No, it wasn't easy. Of course, you have maybe 10% of them who were really keen to help you understand certain concepts. But majority wasn't. But we just kept on trying.

Interviewer: Could you approach them in the lecture?

Theresa: It was not easy for us to communicate with the lecturers. They just came in and gave lectures. If you had something to ask them, they always had the excuse, we are going somewhere or speak to your class rep, or you know.

Interviewer: Did they treat the same to the other White students?

Theresa: They would chat away and sometimes walked away together and I would not know if they were talking about the stuff of the lecture or just chatting

Interviewer: Were there any other English-speaking White students in your class and if so, how was the treatment towards them?

Theresa: If I remember, all the Whites were either Afrikaans or bi-lingual so I guess they did not have the same problem as us.

Extract 48 *Interviewer: in wrapping up, can I ask if you were ever treated differently because of your skin colour in your UG and PG years and if so, please can you give example of how it happened (you can mention the racial identities).*

Lucille: No, I did not have such experience in UG. I think the experience I had in BSC programme was because of my inability to understand the Indian people speaking very fast but with time, I got used to. They did not really discriminate me because I was Black. I mean they spoke like that to everyone.

But in PG, I strongly believe I was treated badly because I was Black. It was about power from the Indians to Black. For example, they refused to see that their training programme, their department had a problem but they just blamed us as we were Black

we were not good enough so we were not even allowed to write exam. They did not treat all registrars the same with transparency.

Interviewer: If you were treated differently this way, please also verify how that contrasts with the way in which other students/registrars were treated. Please kindly give me example(s).

Lucille: There were two Indian registrars and at the beginning they were always given good remarks even if they answered vaguely. But later, they were also attacked by this Indian Consultant who was very powerful so the same person changed her attitude to the same people so I cannot say it was racial for them. May be for them could be her attitude and not race. They also left the programme.

Interviewer: Do you think they were treated differently because of their skin colour and also please can you give example or explain to substantiate your concept?

Lucille: as I said, it was only that one Indian Consultant who was powerful and she changed so much from time to time that we cannot figure out whether it was race or what but for us Blacks, she never changed. She was always nasty and like that throughout till the end.

Interviewer: How being treated differently affected or influenced your relations with peers and the (lecturers/tutors/consultants)? Can you please give example of how it was affected?

Lucille: The thing is the Indian consultant picked out one Black peer and praised her and used her as an example that we the rest must aspire to. And the difference was the way she speaks English and her accent was good and ours was too heave like original African one. So, this shows, for me that they tried to divide the Blacks and so we will be not united. So, our relationship with that Black Registrar became terrible we cannot even speak to her now.

Extract 49

Interviewer: What would you say about the culture in that environment? Was there a culture?

Thomas: I think the culture of the place really was, everybody does their own thing and somehow the work should get done. But they weren't trying to strive for academic excellence. They weren't trying to make it a culture of learning. It was anything but a culture of learning. And I think that's the problem. You can't go to an academic programme and the emphasis is not academics. It's all sorts of nonsense.

Interviewer: Ok what about, culture like people's perception on you? What would some of that culture be? Would you describe please?

Thomas: The culture would be, you have to be a very laid back person who is willing to take anything. You know, no matter what you're told to do, you do it. You never talk back. Very obedient. But for most people, even the people that I think were

obedient; it didn't work for them in the end because they also failed the exam. So, you know, it wasn't… obedience didn't get you… I think it made your life at work easier. You would work less maybe and you would be stressed out less and get the better, the better rotations, the quieter parts of the lab more often. But it didn't equip you to pass the exam. So, it equipped you to have a better work environment but not better academics.

Interviewer: Do they also have a culture towards how you look, what you say?

Thomas: There was a culture more towards that I felt, me being the one that didn't have children, I felt that they felt that, no matter what, I should be able to cover everybody else because they have kids and kids somehow gives you more of a life than someone who doesn't have children. Which I thought was wrong at the time. Even now I feel it's wrong.

Interviewer: Did the consultants know about your background?

Thomas: For the most part no, I don't talk about me and where I've been for the most part, because I feel that my work environment with my colleagues is my work environment. I tend not to mix work and my personal life

Interviewer: So, you are saying, as far as you are concerned as you remember it, you were treated as other African colleagues.

Thomas: Yes.

Interviewer: Not different at all.

Thomas: Not at all.

Interviewer: Ok.

Thomas: No, I think also I keep my history to myself so I didn't make my… I don't go on about this, this is important, you know some of the others had very affluent (spouses) so they were… You know, that would be respected more. Definitely a lot more respect for if you have… you're married, and kids…

Interviewer: So, in that department that mattered about your (spouse).

Thomas: It mattered, and also that you have kids, and that mattered.

Extract 50

Interviewer: how was your formative learning? Were the consultants monitoring you?

Daisy: In terms of the personnel, the first year or two years, it was very difficult for us. There was always this word thrown around of self-learning. You would technically get a few questions asked during a presentation but there was no one on one engagement. There was never group activity that were organised for a specific area for discussion… that was identified as a shortcoming in our training…

Interviewer: So, did you address this issue with the consultants or HOD?

Daisy: Yes, they said it is self-learning so we must organise these ourselves and go to other clinical departments to join their conversations on our own without them.

Interviewer: Did you know the curriculum?

Daisy: We… initially… initially, it was not well clarified. Specifics of expectations and how to go about them and… what you needed to cover, only came up later with the College. It was never there initially, and it is as wide as anything. What you had was an SOP that was drafted by the department, specifying the different learning areas that you needed to cover throughout the programme, but in terms of somebody sitting and saying let's do this particular…chapter etc, it wasn't there.

Interviewer: And in each area you were expected to learn, were there expected outcomes spelled out?

Daisy: There were outcomes that were expected but nobody was evaluating that, nobody was sitting and interrogating that, nobody…really.

Interviewer: But did you know the outcomes that they expected in you?

Daisy: Yes, the outcomes were clearly laid out in the SOP. But nobody was evaluating them.

Interviewer: Ok

Daisy: You've got a learning area whether it's methodology or physiology but if it's not explained

Interviewer: Do you think other students also do not understand?

Daisy: I'm coming to that point because, what you understand as a student or as a Registrar may not necessarily be what is expected by the Consultant. Because it may not be drafted in the manner that is expected by the Consultant that is either training you and that. You will only see that when you now have a one-on-one engagement, or a group discussion, or an engagement with your… your Consultant. Then you realise actually I should have learnt more than that.

Interviewer: So, it needed explanation.

Daisy: It needed explanation, but also it needed somebody to monitor and say that are you doing it…right way.

Interviewer: Right. In the process you would have understood.

Daisy: So, the issue of self-learning becomes a myth actually, because as much as, yes we know we are adults, we're supposed to be self-driven and all that, but at a particular point, somebody must evaluate.

Extract 51 *Interviewer: Now, in terms of daily work, how were you not working to integrate theory and practice?*

Phillip: No, we did work on our own in the first year. We come in, you work on your own, you do what is required and whatever you are doing goes by the senior registrars.

Interviewer: Ah, OK.

Phillip: They teach you, the Senior Registrar will teach you, ok, this is what you do. This is how you do it. If you are not sure you call me. What out for this and this and that. Be careful of that, you might run into problems when you… you know… type of thing. So, we come in, you do what you need to do. Let's say, we come in, we see patients, um… we watch out for the things that they told you about. You make mistakes, they say someone has made a mistake and it will be on you that you did this and that. But we pretty much pushed the numbers. That's what we did. We pushed the numbers. We pushed the numbers. If we had a tutorial, it would be an hour.

Interviewer: Did you know why you are doing those things?

Phillip: They told us it's part of experience, we learn from it. So every time you see that patient, then you look for the problems, then you go to a textbook. You ask yourself questions, and then you go into the… you know, the field and find answers. And… and then you should… you should have enough just by going through those patients. And then whatever you get on the tutorials, you just… um… marry it to what you do on a daily basis.

Interviewer: But was that possible to do all by yourself, without anyone, any Consultant?

Phillip: No, no no no. Like for me, for me, I would say I found it very boring to just come and push numbers. It just felt like what I was running from. You know, and it was just numbers and numbers and numbers, but it's unfortunate that you know, in my time there was a huge transition of consultants, and that had a huge impact, because before we had consultants that were very good, and you sort of like saw the light and then, boom. They disappeared.

Extract 52 *Interviewer: So, you changed your strategy and started learning deeply. Was it enough just to study the past papers, in terms of questions.*

Mary: No. No, that… that was not enough. I had to continue with the group discussions. I had to read the articles, and I had to ask the consultants, you know like, what is it that is expected? Like what should I study and all that. Ja.

Interviewer: So, you had to be proactive, you had to initiate the enquiry. You had to ask.

Mary: Yes. Yes. And I had to develop networks to other universities, to find out what are they discussing. You know, and… you know, basically looking for clues that would help me answer the questions better.

Extract 53 *Interviewer:* W*hat was challenging?*

Pinky: It was challenging all the way, I think, because at some point I didn't know where I stood in terms of my knowledge compared to everybody else before writing exams. And I think that made it difficult for me. I think I lost a bit of confidence in myself.

Interviewer: Ok, so you were in that difficult situation.

Pinky: Ja.

Interviewer: And was anyone helpful for you, to come back to the right way? I mean to solve that difficulty. Did you find any help?

Pinky: Well, I tried to. I did consult the senior consultants that were there. Even the Profs.

Interviewer: Were they helpful?

Pinky: They were much more helpful than the junior consultants

Interviewer: How did they help? Can you please elaborate a bit more?

Pinky: They are more approachable in the sense that they don't judge you harshly, and they always encourage you and give you positive remarks

Interviewer: Anything else that was not helpful?

Pinky: I think just the negativity of the people around, because there were a few people that just kept on making bad remarks about my conduct, about the way I was doing things, the way I was doing my work and presentations. It was all negative all the time, and in retrospect I thought being in an academic setup was for senior consultants to uplift the junior consultants and students to ensure that the final product was to produce a safe practicing (specialist).

Extract 54 *Interviewer: Was there any engagement or interaction happening regularly between you and your Consultant?*

Barbara: We were given a tutorial timetable, but a lot of those didn't happen. We had to arrange time slots with them, but most of the time they were put aside because there were other seniors who were requiring preparation for their exams.

Interviewer: Oh, I see. So, the consultants were giving focus to the senior registrars who were preparing for their final exam?

Barbara: Exactly.

Interviewer: They were not including the junior registrars in the discussion?

Barbara: No, and there was a lot of tension between the seniors and the juniors. So, seniors were not happy the juniors were included in their tutorial.

Interviewer: Oh, I see

Barbara: So, there was a lot of tension you know in that time and I think consultants caused this division by making insulting comments in their tutorials in front of us, and then they didn't want us to join the tuts anymore

Interviewer: So, what did you do? You just got a textbook and that's it?

Barbara: So, you know that ok that was another problem, because the textbook we were told that the new textbook, there's a new edition coming, and that new edition also took about two years to come out.

Interviewer: Sure

Barbara: You know. So, we used then the mini version of that one, and that they kept on telling us, basically they kept on referring us to the fourth-year medical student notes. This is what irritates me. Every time we wanted to you know get to the next level, they kept on going back to the fourth-year medical school.

Interviewer: That is undergraduate. You are not undergrad, you are postgraduate, how can you keep on reading undergraduate notes?

Barbara: This is what my biggest issue was. This is what my frustration was. And you know the thing is that, you know even our primary exam I feel was not the level of a primary exam level. It was a fourth-year medical level, and you know this was my big issue. We never got feedback to say that this is how you did, this is what you got wrong, this is what you did right. We didn't ever get feedback about that. Oh no you did fine, you passed, you're through.

Interviewer: Ok

Barbara: You know. This was my entire training and then the worst thing happened. Is that now they suddenly realised that, ok we've done this thing wrong. So now they started focusing on the juniors, now when we are seniors, and now we're getting very angry because they're now teaching the juniors. We did not get that.

Interviewer: I see what you mean. So, you missed out. You missed out in between the two systems.

Barbara: Exactly. And then, on top of which, we're not getting what we're supposed to be getting at the senior level. You know and what the frustration was, I think my biggest frustration in my postgraduate years now, is that amongst the consultants themselves they cannot agree. So, we're caught in the middle of their entire discussion.

Interviewer: Amongst the consultants 'themselves' means consultants? Amongst the consultants and HOD?

Barbara: Consultants, yes, that's right. Now you know what my frustration was, let me tell you. Is that I am a person you know, I think I feel like a battered woman at the end of this, it's like that you keep on going back for more and more. You keep on thinking that you know I must be mistaken. This can't be a normal thing you know

people don't behave this way. You keep on thinking it must be me that is wrong. It must be me that is wrong. Really, my confidence has been completely destroyed in this entire thing. I have no belief in myself at the moment. I can't even approach and somebody else to help me. That's how bad it feels.

Interviewer: I'm so sorry.

Barbara: It hasn't been, I just hope that somebody can learn through it. I really love my subject. I really love it, but I just don't know what I have to know. That is what my problem is.

Extract 55 *Interviewer: Where did you meet her (mentor)?*

Theresa: At one of my orals, as she was one of the examiners. After I failed, she called me and said that, you know what, after your exams I didn't think you deserved to fail in that way, but I realise that you're not perfect, but I wanted to test you. She offered me help and I said ok. I was going on holiday, so immediately after I failed. So, I went away for about two or three weeks. When I came back she said I phone her. So, she wanted to see how I'd respond. So, I immediately responded and I was ready to work with her and forget about my failure. She used to give me tasks. I had to do my part, but she got to know me in the sense that we would discuss, and then she would give me questions and then I would bring in answers. and then she would go through the answers and then she would put comments.

Interviewer: Yes. So, it's personal mentoring.

Theresa: Yes.

Interviewer: So why didn't that happen with the people who were getting salary and supposed to do that job?

Theresa: I don't know why it didn't happen, but it was a nice interaction, because she even put cases for me afterwards. Whereby, when I go there maybe once a week, she would give me a mini exam, and say sit down assess this case, what do you think the diagnosis is, and then look at it and give answers.

Interviewer: So, what do you make out of this?

Theresa: Ja. I felt like for me it's not something I confirm, but that's the feeling I have, that she played a role in terms of convincing the system that maybe I was good enough. Because, I mean for me I never felt like, I mean somebody said something profound to me. That for you to pass, it's not about your knowledge on the subject. It's about getting an approval from the people who assess you or who mentor you. To decide ok, he's ready.

Interviewer: And who said that?

Theresa: We were just discussing with some friend of mine. Ja, you know we have that impression.

Interviewer: This is the conception that you ended up with?

Theresa: Of course, of course, basically I have to pass them, not the subject, for me to pass, to become a specialist. So, if they feel that you know, ok you know the subject, but you are not, we don't know where you are standing in terms of whether we like you or not. Ja, I mean you know of course, it has happened twice in the college exam where I needed less than two marks to go for the prac, so I felt like, they have not approved me at that time

Interviewer: So now how does one get a personal approval? What if no one offers such mentorship?

Theresa: Ja, ja. I feel I was just very lucky. Otherwise I would still be lost. Like for me for example I had already formed a good relationship with this person so it was easier for me to be part of the circle.

Interviewer: And this person wasn't even your mentor in your department, it was outside.

Theresa: Yes, yes.

Interviewer: Do this person and the people in your department know each other very well?

Theresa: Ja, I mean she was my external examiner, obviously chosen by the varsity.

Interviewer: Oh, I see.

Theresa: Yes, and then she volunteered to say, you know what let me take this guy and if he shows an effort, he will make it. So, I think because the number of people in this field are so small that everyone knows everybody very well, and now this external examiner noticed that I had a potential.

Interviewer: So, you need to earn an impression?

Theresa: Definitely yes. So, I felt like it's a good thing, and I'm grateful for it, but I felt like I had to earn that. I always believed, I'm expected to work if everybody is working at this level, people who look like me have to work twice as hard compared to another White student. To be recognised, you know.

Interviewer: I see. So, do you think this external examiner, at the end convinced the HOD?

Theresa: I think, I don't want to say that. I just believe that it had some kind of influence in the way they see me in the system with the qualification. Because for me like I said, this exam was not as difficult as the one I failed before. For me it felt like I didn't study as hard, I just said OK same things over and over again.

Extract 56 Daisy: So, when I entered the programme, it helped to have a study buddy, but the department I joined had challenges. It had a high turnover rate of registrars before even their second year, they left in first year.

Interviewer: They left? Why did they leave?

Daisy: For various reasons. Others were not interested in the programme, they were just trying it out. Others were frustrated. Others didn't see a way around it, you know. So, it was a high turnover in those years, in the first two years when I was there. The people who were training us or who we were told were going to train us, left.

Remember you register with the university. Um, and you register also with the Health Professionals Council. So, it's the university technically that drives the academic side. The employer drives the service side, and as much as we are supposed to be given leeway from the service side to attend to the academic side, throughout my training, it didn't happen that way.

Interviewer: So, you mean your study time was struggled over service time?

Daisy: The academic time was not protected. Throughout, despite us having to even speak out later on about it, we didn't have protection for that. Occasionally we would be told that would have to study after hours. During the day you are providing a service which you are being paid for. Bluntly put like that.

Interviewer: What about the academic programmes?

Daisy: Of course, there were presentations that would be slotted during the day, but the preparation for that, the researching for that, we were told, we must do it after hours. You had to find a way of going about it and organising with your colleagues in order to be able to squeeze time. That our expectations of our employer versus our university that we've registered with. There was that discrepancy that stood out and now remember even later on, even there the Dean coming out strongly to say that he would like to see that protected time being implemented. It never technically was and I would actually be appreciative, looking at other varsities where they would sometimes give them time to focus on their research projects or on their academic programmes, but in our setup, it never actually was.

Extract 57 *Interviewer: So, how's the relationship with the new person?*

Theresa: It was a bit distant. Ja.

Interviewer: Can you explain?

Theresa: Well, we moved to his department and we had to let him know what we had to be doing, and he told us about the expectations and preparation for exams. We didn't really have any one-on-one discussion with any of the consultants in that department, but we were just preparing with our friends who were in the department.

He said, I will assist you, I'll be available, and then we just continued to study, but he didn't really make himself available so what he said was not a reality in the sense that we continued on the same note. We found our own ways of trying to boost our knowledge and discuss amongst ourselves.

Interviewer: Did he propose at the first meeting what strategy, how to do it?

Theresa: Ja, he had very good strategies as to how he's going to assist us to pass and stuff, but he was always busy so he was going somewhere with other things, so never implemented. We had one or two meetings where he wanted to know, in this preparation, for wanting to know how to be assisted. Because what we liked about him was the fact that he had very good plans for us to pass, to go forward and write the exams, but in terms of implementation it was a different story. Ja, he didn't really follow through. In his department we did have discussions, and he would ask us questions, and initially it was helpful, but it quickly became a session where he was… I mean, I don't know whether it was a medical thing or what, but for me he took us back to preclinical, pre-undergrad years, where you just humiliate, let me say humiliate the person in front of others during group discussions when someone is presenting.

Interviewer: The coordinator?

Theresa: I did not mind the harshness in criticism but the problem was that the remedial part did not come through. Ja, because I mean that is my philosophy, I've always looked at how I can improve things better, and I'm very open to learning and also, I understand that my background maybe there's a time where I didn't get enough mentoring. So, I was ready to listen.

Interviewer: In this particular subject?

Theresa: Yes. Yes. I was happy that he was criticising us. Of which initially I thought it was constructive. You know you look at it to think, ok these are constructive criticisms, go back and learn, but the challenge I had later was the fact that the remedial part was non-existent, you know. Because you expect, if somebody criticises you, especially with such a good background, you think ok, surely at this level maybe I'm not ready. Let me not take offence because I'm here to learn. I can't take these things personally. I mean I went through varsity, I went through undergrad, I learnt to be tough and resilient. So, it was like ok, he's fine. He's right, probably. He comes from a maybe a better varsity where he can maybe spot where you're wrong. You know he can try to hammer us. But the challenge was that for us, especially in my field, we didn't get as much attention as the guys in his department. Whereby we felt ok, he's trying to prepare for exams. We didn't get any form of preparation for exams, you know. So, there was just initial talks.

Extract 58 *Interviewer: So, what would you tell other students in the programme?*

Lisa: So, what is constructive, what is positive, and build on that your own stamina, your own approach, your own take-away. That's very important. So that helped me. They need to firstly develop thick skin because they're not going to get along with everybody that you come across. You need to understand that not everybody is going to like you. It's not just studying and learning and writing exams, etcetera. You need to be aware of that fact, and people have issues with their own self and other people, but they take it out on you. So, you need to understand that as well. Don't take it personally. The main thing is, don't take it personally, so whatever you sort of get from somebody, sort of try and make it into a positive, you know? Just don't take it personally and just try and get something from it. So, if somebody tells you something like that then you just think about how you could have approached it differently, how you could have changed it. Sometimes when somebody criticises you they will also have it from no knowledge base, which is also a tragedy. For example, if talking about a specific topic, you might have, if you're presenting or something you will know more about it than they would, but they would ask you a question and they would fully believe that they are correct, when you know that they're not correct. You can't change people like that. So just know that the books and the journals and things are things that don't lie, so just go and dig in them. Don't waste your time confronting. I wouldn't do it unless you can and it's in a sort of forum that you're comfortable. For me I just sort of try to not have any confrontation because I just wanted peace, but sometimes again, that can sort of eat away at you, so just don't allow it. And then in terms of studying itself, you need to learn to trust yourself. To trust yourself that you can recall things. Don't say oh I still need to do that topic, but just sort of trust yourself that you will remember it and even when you're in the exams. You must also understand that the exams are quite hectic, in that its three hours for a long paper, so there's no time for deep thinking. It needs to be at the top of your brain.

Interviewer: You mean it needs to come out quite spontaneously?

Lisa: It needs to come out. It needs to come spontaneously. So just trust yourself.

Extract 59 *Interviewer: So, amongst the consultants, did you have any mentor? Did you have any person dedicated to your training?*

Barbara: No, we did not.

Interviewer: You did not. You learned from everyone?

Barbara: Yes, they tried to do a programme. In fact, you know this relationship between the head of department and the one other consultant was so bad that even the

junior consultants felt this, and eventually they would try not to get involved because of this. You know there was one junior consultant that was quite good with teaching and training and had quite good knowledge, but then she kind of backed off with the training because of this, and we used to all try to gather around her and there was one other consultant that was also very good. I mean he was a little bit far away and you know he actually did a lot of teaching, but again he was not enrolled for the exams. So, he would also get stumped with, you know I don't understand what it is that is required. What are the requirements? So, you know if we approach any of the other consultants even within our department that was not that person who is in charge of the training, who is involved with our exams so if she would get offended, it would cause trouble for us and so many people backed off from you know like trying to help you.

Extract 60 *Interviewer: Let's discuss about people and diversity in your learning environment. How do you understand race?*

Lucille: Race to me it's different people from different cultures and ethnicity, like Whites, Indians and Black people. That's what I understand.
Interviewer: Socially, do you think people are different?
Lucille: Ja, in terms of personality?
Interviewer: Ok and, furthermore?
Lucille: Personality, the way people behave, you know you've got gays and whatever all that, and the way you conduct yourself, you know, and your heart, how you… are you a person who is approachable working with other people, or you are somebody who is just all by herself or by himself.
Interviewer: How about culture?
Lucille: To me different cultures do things in certain ways. And with people of the same culture sometimes tend to socialise in the same manner. Like if you are a Black person you tend to have those cultural things and then you tend to understand each other, but maybe if you are a Jewish person you have these beliefs about life and you might not be doing the same things the way I do. Even your holidays, you don't celebrate your holidays the same way that I'm doing. So that's what I understand.

Follow up interview questions by email on constructions about 'Race', 'Ethnicity', 'Social identity', and 'Culture'

Extract 61 *Interviewer: How you perceive race and ethnicity. So, when we talk about race, what do you understand?*

Pinky: Race to me is how people are classified based on their origin or ancestral decent, but also on the skin colour and ethnicity is different groups in one race with maybe language dialect etc.

Interviewer: How does race and culture relate?

Pinky: Culture comes from ethnicity. It is tradition that we follow.

Interviewer: What about social identity and race?

Pinky: Previously there were associations that if you are Black or Indian you are lower or middle social class and Whites in the upper class, but nowadays it is becoming mixed.

Extract 62 *Interviewer: How you perceive race and ethnicity. So, when we talk about race, what do you understand?*

Barbara: Race is about our origin, where we come from. For example, I am Indian race, but people treat you differently even if you are Indian though you come from India and not born in SA. So, it means there is a bit of social component because India is poorer than SA like in terms of infrastructure and many poor people etc.

Interviewer: How does race and culture relate?

Barbara: Culture is what comes from your race or ethnicity- things that your parents and grandparents do in your family, but work culture or school culture is different from race culture.

Extract 63 *Interviewer: How you perceive race and ethnicity. So, when we talk about race, what do you understand?*

Theresa: Race is based on skin colour and social status because of apartheid most Blacks are poor and still it is like this.

Interviewer: How does race and culture relate?

Theresa: Culture is also strongly related to race, but people change the culture after being exposed to different school or work place because they take the culture of these places and integrate into their original culture.

Interviewer: What about social identity and race?

Theresa: As I said, social status and race are related.

Extract 64 *Interviewer: How you perceive race and ethnicity. So, when we talk about race, what do you understand?*

Daisy: Race is our origin, root whether we are Black or White or Indian. Ethnicity is different tribes in one race, but they may speak different language.

Interviewer: How does race and culture relate?

Daisy: On top of that you may find your original culture of your root does not match with the culture of study or work place you are having to immerse in. Then there is a bit of problem one has to go through. One can bear with it for temporary period or if it becomes permanent you have to adjust to it.
Interviewer: What about social identity and race?
Daisy: Blacks were poor and Whites were rich in apartheid, but a few Blacks who are educated have become socially and economically well to do, but there is a lot of Black tax that keeps us back in debts, having to look after close and far relatives. So, I think majority of social elites are still Whites.

Extract 65 *Interviewer: How you perceive race and ethnicity. So, when we talk about race, what do you understand?*

Mary: Race is skin colour for us in SA and ethnicity is how we are grouped based on our origin of location and language.
Interviewer: How does race and culture relate?
Mary: Culture is our family tradition based on our ethnicity like rituals that our family does etc. Work culture is different. But the problem is when people bring their racial or ethnic culture to work.
Interviewer: What about social identity and race?
Mary: Socially Blacks are poor and they live at lower social standards compared to Whites, but this refers to majority. Nowadays after apartheid things are changing. So, race and social status are not directly related anymore.

Extract 66 *Interviewer: How you perceive race and ethnicity. So, when we talk about race, what do you understand?*

Lisa: I think race is skin colour. Ethnicity is where you come from in that race or language dialect.
Interviewer: How does race and culture relate?
Lisa: Culture is related to race so Indians have certain things they must do, and so as Jews and Afrikaans, so sometimes it also relates to religion.
Interviewer: What about social identity and race?
Lisa: Socially majority of Whites are rich, Blacks are poor and Indians are middle class.

APPENDIX 5.
PARTICIPATION AND INFORMED CONSENT

Appendix 5.1 Invitation for participation

Dear Students

I am a lecturer and researcher at the Sefako Makgatho Health Sciences University. As you were one of the postgraduate students in the medical speciality programmes, I would like to invite you to participate in a study that seeks to explore the students' conceptions of the racial and socio-cultural differences in the learning environment through their experiences. Recently qualified students will also be recruited to share the experiences of their learning journey and how they navigated through these differences.

Your participation would be greatly appreciated and the results of this study will be used to make recommendations for the students who are still in the programme in how to better deal with these differences.

There are two aspects to participation:

1. A face-to-face interview using semi-structured, open-ended questions, which should take approximately two to three hours. These will take place from Nov 2016 to April 2017.
2. Participating in a focus group discussion with other student participants anonymously. This should take approximately two hours, and will occur after individual interviews, approximately around June 2017

I request your permission to audio-record the interviews. If you do not wish to be audio-recorded, notes will be taken during the interview. If you do not wish to be audio-recorded, alternatively you can provide written answers or type them.

Please note that all responses in the individual interviews will be anonymous and confidential, and your identity will only be known to me. Pseudonyms will be used to keep anonymity and interviews and transcripts will be coded for traceability. The transcription will be provided by a professional service. The transcripts will be sent to you via your personal email for you to check if the quotes captured are correct. The audio-recording will be destroyed once you and I have verified the transcription. In addition, I will not be involved in the exit examination until this study is finished, to avoid any fear of victimization by or pressure on you.

In the case of the focus group discussions, students who are outside the formal training programme and students who have recently qualified will be in two separate discussions, and a combined group discussion will follow. In order to maintain anonymity, these focus group discussions will be done via Google chat which affords real time responses and participants can continue using their pseudonyms. The chats can be saved as files on my personal computer.

By this way, your anonymity is protected as much as possible in these focus group discussions, but in case of any accidental exposure to the other participants I request you to respect the anonymity of others and keep anyone's identity and contributions as absolutely confidential. By agreeing to participate, this expectation will be understood by you.

Benefits of participation will be:

- Developing your reflective skills and contextualization of various factors around events that may have caused negative impact in your learning. This may provide means to understand the root causes and better equip you for future events in dealing with socio-cultural diversity.
- Being able to share the experiences of students who recently qualified.
- Contributing to the improvement of dealing with socio-cultural differences for the students who are still in the Programme.

Potential risks may be that the interviews (individual or focus group) may initiate some emotional difficulty in the participant due to bringing out unresolved issues and may lead to stress or anxiety. In case of such, I will refer you to the qualified counsellor if you require my assistance.

You should not feel compelled to participate in this study and your decision to participate in the interviews and the focus group discussions is entirely voluntary. You do not have to answer any questions that you do not want to and you may withdraw from the study at any time without any consequences to you.

If you have any questions regarding this study, please contact at me at ayeaye.khine@smu.ac.za or phone 072 89 66998 or my supervisor Dr Nadia Hartman at nadia.hartman@uct.ac.za phone 021-650 6630

Alternatively, the UCT's Faculty of Health Sciences, Human Research Ethics Committee can be contacted on 021 406 6338 in case you have any ethical concerns or questions about your rights or welfare as a participant in this research study.

This study proposal was reviewed by the University of Cape Town (UCT), Faculty of Health Sciences Education Research Ethics Committee as well as the Faculty of Health Sciences, Health Research Ethics Committee (HREC) of UCT. It was approved by the HREC of UCT with the study number 656/2016.

If you wish to participate in the study, please complete the attached consent form, and return to me at **ayeaye.khine@smu.ac.za**

Yours sincerely,

Dr Aye Aye Khine

Appendix 5.2 Informed consent form

Dear Dr Khine,

I am willing to participate in the study entitled 'exploring student's conceptions of the racial and socio-cultural differences in the learning environment of a medical speciality'.

I am aware that I can contact UCT's Faculty of Health Sciences, Human Research Ethics Committee on 021 406 6338 in case I have any ethical concerns or questions about my rights or welfare as a participant in this research study.

Declaration:

- I understand that my anonymity will be ensured in the individual interviews.
- I understand that my responses will be confidential in the individual interviews and the transcripts and in all writings produced in the study.
- I understand that my responses in the focus group discussions will also be anonymous by using the pseudonyms in Google chat but in case of accidental exposure, I shall keep the confidentiality of others as I understand you will also request the others to do so.
- I am taking part in this study freely and without coercion.
- I can withdraw from the study at any time without consequence to myself.
- I am aware that findings will be used to improve the quality of the educational experience of current and future students in the training programme.

Do you consent to participate in individual, face-to-face interviews? YES / NO

Do you consent to participate in the focus group discussions via Google chat? YES / NO

Do you consent to individual interviews being audio-recorded? YES / NO

Do you consent in receiving my emails sending the draft transcript of your interview the interpretations therein to verify with you? YES/NO

Do you consent to the publishing of data from this study with absolute anonymity (only using pseudonyms)? YES / NO

Please note that you can decide to change your pseudonyms for the publication.

Name:

Signature: Date:

Would you like a copy of the research results? YES / NO

If yes, please provide future contact details for sending the report to you. Please indicate your preference for emailing or posting.

Email address: or Physical Address:

APPENDIX 6.

ETHICS APPROVAL

UNIVERSITY OF CAPE TOWN
Faculty of Health Sciences
Human Research Ethics Committee

Room E53-46 Old Main Building
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15 November 2016

HREC REF: 656/2016

Dr N Hartman
Department of Health Sciences Education
E52, Old Main Building
GSH

Dear Dr Hartman

PROJECT TITLE: EXPLORING STUDENTS' CONCEPTIONS ON THE RACIAL AND SOCIO-CULTURAL DIFFERENCES IN THE LEARNING ENVIRONMENT OF A MEDICAL SPECIALITY (MPhil candidate- Dr AA Wamono)

Thank you for submitting your study to the Faculty of Health Sciences Human Research Ethics Committee.

It is a pleasure to inform you that the HREC has **formally approved** the above-mentioned study.

Approval is granted for one year until the 30th November 2017.

Please submit a progress form, using the standardised Annual Report Form if the study continues beyond the approval period. Please submit a Standard Closure form if the study is completed within the approval period. (Forms can be found on our website: www.health.uct.ac.za/fhs/research/humanethics/forms)

Please quote the HREC REF in all your correspondence.

Please note that the ongoing ethical conduct of the study remains the responsibility of the principal investigator.

Please note that for all studies approved by the HREC, the principal investigator **must** obtain appropriate institutional approval before the research may occur.

The HREC acknowledge that the student, Dr Aye Aye Wamono will also be involved in this study.

Yours sincerely

PROFESSOR M BLOCKMAN
CHAIRPERSON, FHS HUMAN RESEARCH ETHICS COMMITTEE
Federal Wide Assurance Number: FWA00001637.

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Institutional Review Board (IRB) number: IRB00001938
This serves to confirm that the University of Cape Town Human Research Ethics Committee complies to the Ethics Standards for Clinical Research with a new drug in patients, based on the Medical Research Council (MRC-SA), Food and Drug Administration (FDA-USA), International Convention on Harmonisation Good Clinical Practice (ICH GCP), South African Good Clinical Practice Guidelines (DoH 2006), based on the Association of the British Pharmaceutical Industry Guidelines (ABPI),and Declaration of Helsinki (2013) guidelines.
The Human Research Ethics Committee granting this approval is in compliance with the ICH Harmonised Tripartite Guidelines E6: Note for Guidance on Good Clinical Practice (CPMP/ICH/135/95) and FDA Code Federal Regulation Part 50, 56 and 312.