

Building on Tinto's model of engagement and persistence: Experiences from the Umthombo Youth Development Foundation Scholarship Scheme

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Background. Major inequalities in staffing levels at rural and urban hospitals contribute to poorer health outcomes in rural areas. Local and international studies have shown that healthcare professionals (HCPs) of rural origin are more likely than those of urban origin to work in and contribute to improved health outcomes in rural areas. However, absent role models, dysfunctional families, schools that perform poorly and inadequate funding make it almost impossible for rural-origin students to gain access to institutions of higher learning (IHLs) to train as HCPs.

Objective. To present the experiences of graduates from the Umthombo Youth Development Foundation Scholarship Scheme, build on Tinto's model of persistence and engagement, and contribute towards the success rates of rural-origin HCPs.

Methods. This qualitative study used a life-history methodology. Unstructured interviews, photomemory, artefacts and collage development were used to explore the educational experiences of six rural-origin HCPs. Data were coded and categorised and themes identified.

Results. Compulsory academic and peer mentoring promoted academic and social engagement, helped students to recognise their pre-university experiences as generative, and contributed to their success. The generative potential of pre-university experiences and compulsory work-based experiential learning were identified as initiatives that could strengthen Tinto's model of persistence and engagement.

Conclusion. A number of targeted interventions, if introduced at South African IHLs, could contribute to improved success rates of rural-origin health science students.

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Despite the promise of a better life for all made after the first democratic elections in South Africa (SA) in 1994, excellent legislation and policy documents, health outcomes in SA are poor and compare unfavourably with other countries at a similar stage of development.^[1] In 2009, the *District Health Barometer* reported that healthcare indices are generally worse in rural than in urban areas, with a higher burden of infectious diseases, higher under-5 mortality and reduced life expectancy at birth.^[2] There are major inequalities between staffing levels at rural and urban hospitals, which contribute to poor health outcomes.^[2] These disparities remain, despite the commitment of the National Department of Health of 'Health for all' and the prioritisation of recruitment of healthcare professionals (HCPs) for rural areas.^[1] Failure of the health service to deliver on the promises of a better life for all has been attributed to the shortage of well-qualified HCPs.^[3] Increasing the number of healthcare workers in underserved rural areas improves health outcomes in general, and maternal, child and infant mortality indicators specifically.^[4]

Rural-origin HCPs are more likely than those from urban origin to work in rural areas and contribute to improved health outcomes in these areas.^[5] However, only a small number of rural-origin SA scholars are trained each year as HCPs,^[6] and staffing of rural hospitals remains an ongoing challenge. Absent role models, dysfunctional families, poorly performing schools and inadequate funding make it almost impossible for rural-origin students to gain access to tertiary institutions to train as HCPs.^[7,8] In view of this, new

strategies are necessary if SA rural scholars are to provide a solution to the shortage of HCPs in rural areas.

Since 1999, the Umthombo Youth Development Foundation Scholarship Scheme (UYDF SS) has run an innovative scheme in rural KwaZulu-Natal. The UYDF SS model includes the selection by rural hospitals of rural students with the potential to train as HCPs, comprehensive funding for students, a compulsory mentoring programme and hospital-based experiential vacation work. The annual pass rate of students supported by UYDF SS is >85%, and by December 2013, 184 rural-origin HCPs supported by UYDF SS had graduated from tertiary institutions in SA.^[9] All these graduates have returned to rural areas to work there, <10% have bought themselves out of a portion of their work-back contract, and >60% continue to work in rural areas after completing their work-back obligation.

The objective of this article is to present the experiences of UYDF SS graduates, build on Tinto's model of persistence and engagement, and contribute towards building a theory of success for rural-origin HCPs.

Methods

This qualitative study used a life-history methodology to explore the educational experiences of rural-origin HCPs. This methodology enabled participants to tell their life story within a social, historical and cultural context. The meanings that they attached to their experiences and how they made sense of their world as they journeyed from rural scholar to HCP became clear. Six rural-origin HCPs were purposefully selected from UYDF SS graduates. Selection criteria included

that they were (i) willing to participate; (ii) articulate; and (iii) working in a rural environment.^[10] To provide a service of excellence at a district hospital, a team of HCPs is required. Therefore, HCPs in a variety of healthcare disciplines were included in the study (Table 1).

The author collected data using two unstructured interviews, which were supplemented by photomemory, artefacts and construction of a collage. Participants were asked, 'Tell me about your educational experiences from rural scholar to healthcare professional'. The first interview provided an overview of their home environment and educational experiences, while the second interview clarified and elaborated on issues previously raised. At a subsequent meeting, participants were asked to bring four photographs and an artefact from different stages of their educational journey and to construct a collage of a day in their lives. They had to explain how the photographs/artefacts/pictures selected for the collage related to their educational experiences. All interviews and discussions were recorded and transcribed verbatim.

From the transcripts, a reconstructed story was written and sent to the participants for validation of content.^[10] The stories were read and re-read, codes and categories identified, patterns and relationships between categories reviewed and themes developed.^[10]

Ethical approval for the study was obtained from the Social Science Ethics Committee of the University of KwaZulu-Natal, Durban, SA (HSS/1205/012D). Written informed consent, including possible identification, was obtained from all participants after explaining the objective of the study.

Theoretical model

Although there are many theoretical models to study the reasons why students succeed or fail at institutions of higher learning (IHLs), Tinto's theory of engagement and persistence has been the major theoretical/explanatory model about student success at IHLs since the 1980s.^[11,12] Tinto's initial writing

focused only on academic and social integration as key factors in determining engagement and persistence at IHLs and, finally, success at university. As the model developed, Tinto added pre-university factors that may influence students' ability to engage, persist and ultimately succeed at IHLs (Fig. 1).

Tinto's theoretical model is useful because it recognises factors beyond the control of academic institutions. These may influence retention and success at IHLs, including students' academic abilities, and study and language skills. The acquisition of all these factors is usually the responsibility of the family and school.^[13,14] In addition, attitudes towards higher education, such as commitment, motivation, aspirational goals and expectations, influence retention and success at IHLs.^[13] External commitments such as family

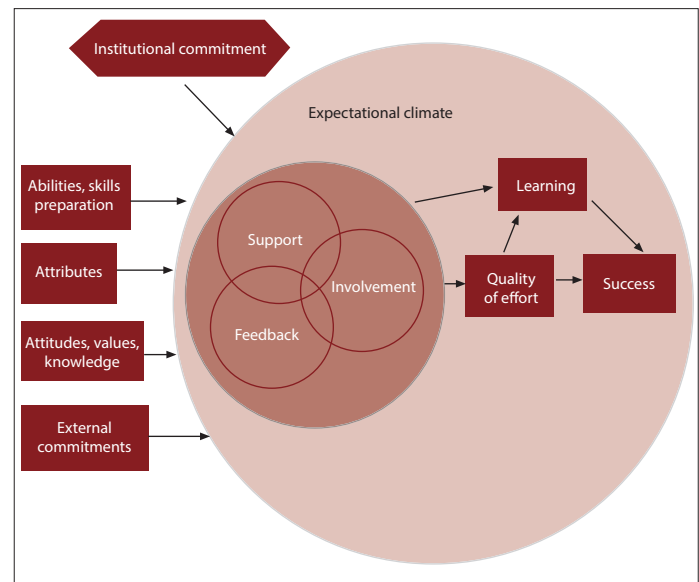


Fig. 1. Structure of a preliminary model of institutional action.^[12]

Table 1. List of healthcare professionals who participated in the study

Initials	Current position	Qualification	Professional experience	Professional experience, yrs	Age	Gender	Originally from	Schooling
DG	Student mentor co-ordinator, Mtubatuba	BSc Physiotherapy (UKZN, 2003)	Physiotherapist (2004 - 2008) Mentor co-ordinator (2008 -)	11	37	Male	Ingwavuma	Ingwavuma
FN	Sub-Saharan co-ordinator, Brian Holden Eye Institute	BSc Optometry (UKZN, 2003)	Optometrist, Mosvold, Phelophepa train (2004 - 2009) Brian Holden Eye Institute (2010 -)	11	34	Male	Ingwavuma	Ingwavuma
SM	Psychologist, Hlabisa Hospital	MSc Clinical Psychology (UJ, 2009)	Clinical Psychologist, Hlabisa Hospital (2010 -)	4	29	Male	Ingwavuma	Ingwavuma
TM	Physiotherapist, Emmaus Hospital	BSc Physiotherapy (Wits, 2004)	Physiotherapist (2005 -)	10	33	Male	Ingwavuma	Ingwavuma
NM	Pharmacist, Mtubatuba	BSc Pharmacy (Wits, 2004)	Pharmacist (2005 -)	10	35	Female	Ingwavuma	Nongoma
LH	Medical Officer, Mseleni Hospital	MB ChB (UKZN, 2006)	Intern/Community Service 9 Officer/Medical Officer (2007 -)		30	Female	Ubombo	Ubombo

UKZN = University of KwaZulu-Natal; UJ = University of Johannesburg; Wits = University of the Witwatersrand.

responsibilities and adequate financial support also play a role in whether students complete their degrees.

However, while recognising that experiences before entering university may influence student success, Tinto's model focuses on the contribution of institutions to ensure that students complete their courses and graduate. At the core of the model is a need for student engagement with peers and faculty members in a supportive university environment, with high expectations of student success.^[15] Tinto suggests that student engagement be facilitated by lecturers, primarily in the classroom, to promote academic and social interaction that in turn lead to the development of communities of learning. The latter would ensure student involvement, provide opportunities to develop relationships with peers and faculty members, and provide academic and social support and opportunities for feedback on whether learning has been adequate. Student involvement with these communities has been shown to increase the quality of effort put into learning, which in turn contributes to success and graduation.^[11,12,16,17]

Results

From the data collected from rural-origin HCPs supported by UYDF SS, one can add to Tinto's model of persistence and engagement at IHLs in three important ways:

- Introducing compulsory academic and peer mentoring for all students to promote academic and social engagement.
- Assisting students to recognise pre-university experiences as generative.
- Strengthening learning at university by introducing compulsory work-based experiential learning.

Compulsory mentoring, promoting engagement and persistence at university

The UYDF SS model has a compulsory mentoring programme for all students. It involves regular meetings with a university mentor and the establishment of peer mentorship groups. These proactive meetings with a local mentor ensure that academic problems are identified early. 'I would get a call from the mentor to find out how I was doing.' (FN) The mentoring ensured that students recognised academic challenges so that solutions could be identified. 'You can't fix a problem unless you are prepared to say, "I failed. I have a problem. I must do something."' (DG) These early interventions were initiated by the student and monitored by the mentor and their peers to ensure resolution of the problem. Evidence from this study suggests that the early identification of deficiencies and active interventions were key to student retention and success. This problem-focused behaviour to achieve success encouraged students to access academic resources. 'I approach the physics lecturer to help me pass the course, and to find a tutor for physics and maths.' (DG) Students also worked with like-minded peers and formed study groups, 'which was a way of cementing my knowledge. I studied by myself first, then when we were in a group, I shared what I had learned.' (DG)

The mentoring process focused on accountability to the funder and to one another. 'We would be asked, "Why didn't you pass the test?", and then I needed to know exactly why I didn't pass the test.' (TM) Mentoring was based on the belief that students had the potential to succeed, and tapped into their hopes, dreams and determination to succeed. 'I had no option, I had to make it. And if I don't make it, I'd lose the scholarship and it would just be the end of the world.' (SM)

The UYDF SS mentoring was not only academic, as social integration is also important for success at IHLs. 'When other students came to Johannesburg for the first time I would tell them, "This place is like this and that and that." I would tell them, whatever your circumstances, you need to pass, because that's the only thing that you are at university for. So I would mentor them. Not teaching them maths and physics, but I would mentor them in terms of social life, and how to handle the situation, knowing their background.' (TM) For these students peer mentoring helped with social integration and accountability. It facilitated the development of friendships and helped them to make the most of the academic support available at IHLs. 'The group of friends that I had, we had the same vision, we did not want to fail, we wanted to graduate.' (FN)

The rural community as a generative context

In the rural context, these graduates and their families recognised that education was a priority and were prepared to make sacrifices for a good education, because 'We really wanted to learn. Even though our matric maths teacher got sick in February and never came back to school we walked 1 km after school for extra maths lessons.' (SM) They learnt to work hard and work together to compensate for deficiencies at school by 'forming study groups where we shared information with each other to ease the pressure.' (DG) 'Our experiences built some personalities within us so as to be able to push even when it was difficult.' (FN) Through the mentoring process, UYDF SS students were encouraged to reflect on their rural experiences, learn from these experiences, and apply the learning to new challenges at university. The mentoring encouraged students to draw on previous learning and personal strength, and sought to reframe challenges at university in the light of previous successes in overcoming challenges. This was based on the understanding that if students had overcome challenges in the past, there was no reason why they could not overcome challenges at university. 'I knew this world where I could do things, and where I was going to do things.' (SM) In response to challenges that they faced at university, UYDF SS students sought lecturers who could help them, asked for tutors and mentors, and formed study groups to help one another. 'We were willing to learn to study in different ways to ensure that we passed.' (TM)

Work-based experiential vacation work

Rural-origin students supported by UYDF SS worked at the hospital closest to their home for at least four weeks per year, alongside qualified colleagues. Students recognised the value that this added to their learning, because 'Our vacation work at the hospital made things better for us ... we got to know about the drugs ... the pharmacist would tell me, every day "I want you to choose three drugs and read about them, know what they are for and why are you using them"' (NM)

In the physiotherapy department, for example, 'The therapist wanted to see what we had learnt, and that we could apply it, which was also very good and very helpful.' (TM) This work-based experiential learning allowed them to gain experience in a real-life environment and witness role models who were providing a service in rural areas.

Discussion

Tinto's model of institutional action recognises pre-university experiences outside the control of IHLs, a sentiment echoed in the recommendations for undergraduate curricula reform recently submitted to the Council on

Higher Education.^[18] Tinto emphasises the need for social and academic integration if students are to persist at IHLs.^[19] The UYDF SS supports the importance of engagement at IHLs as many academic resources are available to help students to succeed, but they can only derive benefit from these resources if they are willing and able to access them. Tinto suggests that this engagement should happen primarily in the classroom and be facilitated by academic staff. However, in an SA context of large, diverse classes this may not be effective. A compulsory academic mentoring programme for all students would ensure that they are helped in a proactive manner so that problems are identified early and solutions found. This academic mentoring should tap into the students' intrinsic motivation, desire for learning and personal gain, and should be provided in a supportive framework.

Peer mentoring ensures social engagement, which Tinto has recognised as contributing to student persistence and success at university. Peer support and learning have been shown to increase productivity, the quality of effort put into learning activities, and ultimately success.^[12,20] The experiences of UYDF SS graduates and the success of the scheme point to the critical role that academic and peer mentoring plays in the success of students at IHLs and could be incorporated into such programmes in SA.

The UYDF SS model recognises the many challenges faced by rural-origin students, e.g. finance, being first-generation students, and poor preparation owing to dysfunctional schools, and adds to Tinto's model by suggesting that these experiences can be generative, dynamic and transformative.^[21] The UYDF SS encourages students to embrace, not to ignore, these experiences so that these can become the substance on which future solutions are built. Many students entering a university in SA, particularly rural, black students, are underprepared both academically and in terms of the skills needed (studying skills and practical laboratory-based skills) to succeed. However, many of them have life experiences that have given them tools to problem solve and find solutions that could be applied to the challenges at IHLs. Encouraging students to reflect on their experiences and to view these as important life lessons that give them tools and resources to succeed at IHLs, are important additions to Tinto's model.

Career-specific work experience has been recognised as a motivating influence for students

at IHLs and can contribute to academic success.^[22] Alignment between training programmes and career aspirations is a powerful motivator for students to persist and succeed at IHLs.^[22] Vacation work provided opportunities for students to study in a supportive environment, practise their skills and view their studies in relation to the working world. The vacation work also exposed them to HCPs working in a rural environment and helped them to gain insight into their chosen career. This relevant and focused learning experience contributed to their knowledge and skills, influenced their attitudes and values about working in rural areas, and contributed to their motivation, engagement and success at university. Other studies have shown that such exposure contributes towards motivating students to put in the effort required to succeed at IHLs.^[22] A similar programme could be added to most university programmes in SA (Fig. 2).

Limitations of this study

Although students supported by the UYDF SS have been very successful at IHLs over the past 14 years, the number of students in the current study was very small. In similar upscaled projects, similar outcomes cannot be guaranteed.

Conclusion

This study aimed to present the experiences of rural-origin graduates at IHLs in SA in order to build on Tinto's model of persistence and

engagement. The study analysed participants' experiences in the UYDF SS, which supported them financially, academically and socially in their journey from rural scholar to HCP. Tinto's model promotes student engagement at classroom level, which may not always be possible in an SA context. The model also suggests some limitations to the contribution by universities to facilitate student success by identifying pre-university experiences beyond their control.

The findings of this study have implications for universities that are looking to successfully educate students from rural regions. While Tinto's notion of academic and social integration is essential in the success of students at IHLs, the current study suggests that for students of rural origin to succeed at university, a number of targeted interventions are essential: (i) a compulsory structured academic and peer-mentoring programme, emphasising student potential; (ii) reframing of academic challenges, thus helping students to recognise the generative nature of pre-university experiences; and (iii) introducing compulsory vacation work. Drawing on the success and learning of UYDF SS graduates, these additions have the potential to improve persistence and success at IHLs in SA. With institutional commitment, the mentoring model and work experience are practical and implementable, and if offered to all students could lead to immediate improved success rates at IHLs throughout SA.

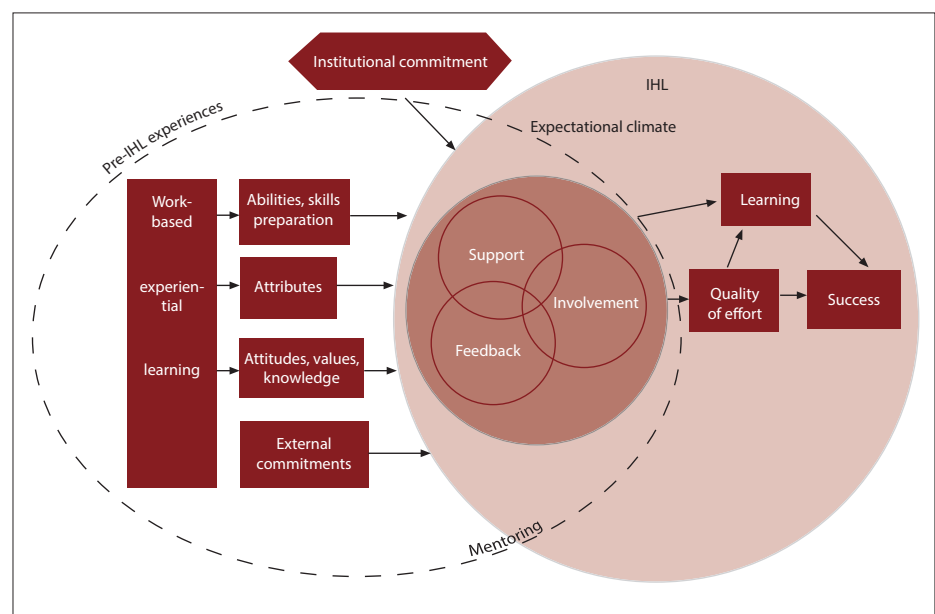


Fig. 2. Mentoring and work-based experiential work added to Tinto's model of institutional action. (IHL = institution of higher learning.)

Conflict of interest. The author was the founder of the Friends of Mosvold Scholarship Scheme (currently UYDF SS). He was intimately involved in running the scheme until 2007 and knows all the participants, as they were supported by the scheme. However, since 2007 he is no longer actively involved in student selection or financial support of the students and serves only as a trustee of the scheme and a mentor at the local university. None of those who participated in the research has any financial or other obligation to or any personal relationship with the author. This research project was supported by a grant from Discovery Health and conducted during a sabbatical period at the University of KwaZulu-Natal.

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