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Research Article

Reflections on the First Decade of Developing a Community-Based-Education Site for the University of Cape Town Health Sciences' Students

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Abstract

The Vanguard Community Based Education (CBE) site was conceptualized by the University of Cape Town (UCT) as a long-term service-learning project that would be socially-responsive to the community. The site hosts multidisciplinary students from the Faculty of Health Sciences of UCT.

By the end of the first decade of its existence (2006-2015), the Vanguard CBE-site had largely become a successful and well-run students' project that was integrated into the Western Cape's Metro District Health System. Beyond meeting the curricula outcomes for students, this project was showing that it had a mutually beneficial relationship with stakeholders, particularly with the contribution towards community-upliftment projects. The transformational elements that organically developed for students were the eagerness to participate in interprofessional practice and to enjoy communicating with patients using their local languages. The Vanguard Student Learning Centre (VSLC), which is the hub of the CBE-site, had also become positioned as a place of extra-support for academically struggling students.

The objective of this article is to tell the story of how this CBE-site developed by reflecting on its records that were kept during this first decade. This data was qualitatively analyzed for systems and processes that supported teaching and learning in a safe environment. The main sources for support and/or guidance were found to be intentional governance-structures, a fit-for-purpose infrastructure, use of multidisciplinary teams to carry out specific tasks, collaboration with stakeholders (particularly the staff of the adjacent Community Health Centre (CHC) and the surrounding community) plus students' end-of-placement feedback and external assessors' reports.

Keywords: Community-based-education; District Health System; Health science students; Primary Health Care; service-learning, social responsiveness; University of Cape Town, South Africa

Introduction

The purpose of this study was to document the development of the present-day Vanguard-site [1], a community-based-education (CBE) platform for mainly undergraduate students of the University of Cape Town's Faculty of Health Sciences (UCT-FHS)' students during the first decade (2006-2015) of its existence. The authors perceived this period as the site's foundation phase. Beyond this period, the site had systems in place to function as a fully-fledged entity that could accommodate new programmes with ease. At the center of developing the site, was UCT's drive to participate in strengthening the Western Cape's District Health System (DHS) whilst producing socially responsive health science graduates [2,3].

This narrative, authored by the coordinators of the CBE-site's activities, is based on their reflections of the documented processes during 2006 to 2015. It is desired that the story of this journey add to the history of transformation that UCT undertook to align its curriculum with the aspirations of 1994's newly democratic South Africa.

The UCT's new-curriculum and community based education

In line with South Africa (SA)'s National Plan for Higher Education, which was released in 2001, UCT's Health Sciences Faculty revised its curriculum to be able to produce graduates who have high quality skills and competencies in their discipline of choice and are able to function in a multidisciplinary milieu within a District Health System (DHS) [2]. Of importance to UCT was that during CBE training, the students would simultaneously provide meaningful services to communities. To achieve this objective, UCT set up urban and rural community-based practice learning sites in areas where most of the underprivileged people of the Western Cape Province reside. These communities largely dependent on the public sector for free health and social services. Vanguard is one of the urban-based sites.

The beginnings of the Vanguard Students' Learning Centre (VSLC)

The CBE-site comprises of VSLC (the hub of the site) and the surrounding Langa and Bonteheuwel communities. VSLC was built following a wide consultation process in the early 2000's by UCT with the Provincial Government of Western Cape Health department, the City of Cape Town municipality, the Metro District Health Services and the community representatives. The VSLC-built is attached to Vanguard Community Health

Centre (VCHC), a provincial health-facility, in order to allow for 'fluidity' of function and service between the two spaces. It was officially opened in September of 2005 but started functioning fully in January 2006 when it hosted a wider group of medical and rehabilitation science's students. The Centre was funded by the United Kingdom-based Rangoonwala Foundation and the South African-based Liberty Foundation.

Vanguard-site's social responsiveness

From the outset, the Vanguard placement was designed to be mainly for students who were in their final year of study and were therefore at a stage where they required minimal supervision to provide clinical and rehabilitation services. Some of these services like speech therapy are specialized and ordinarily do not fall within the primary healthcare package in SA. They therefore would not have been available if students had not been present. The VSLC is also used as a support base for other undergraduate students who are doing community projects. Most of these projects address public health related concerns that are identified by the communities. Some of their reports had been used to lobby local government or non-profit organizations (NPOs) for needed services. In 2010 for e.g., students successfully used their project to negotiate for provision of a much needed but absent palliative care service for cancer patients in Bonteheuwel [4].

Other advantages of the Vanguard placement for students

This placement largely provides supervised service-learning [2] for eminent graduates. This allows for the mainly hospital-based spiral learning of earlier years to be concluded and capstoned in a community setting where psychosocial learning is role-modelled [5,6]. Students also have an opportunity to experience the evolution of clinical practice in real-time that comes with new scientific evidence and policy changes that support the unfolding Healthcare 2030, a strategy for Universal Health Care [7]. In SA, the most changes had in the beginning been seen with the integration of TB and HIV management [8,9]. In recent times however, the spotlight has been cast on the previously poorly managed noncommunicable diseases (NCDs) to facilitate their management at primary level according to the new global framework that follows a programmatic public health approach [8]. Other examples of added learnings for students are the improvement in communication skills, the exposure to Interprofessional Practice (IPP) [10] and the understanding of referral pathways that allow for a continuum of care within a DHS. Regarding pedagogy, students are formally supervised to apply the relevant principles of primary health care, family medicine and palliative care in order to provide a 'patientcentred' biopsychosocial care. At graduation therefore, the students would have had ample opportunities to practice and acquire the UCT-prescribed competencies that a generalist requires to provide a comprehensive primary healthcare [2,11].

Method

The study setting

The Vanguard-site comprises of the UCT Vanguard Students' Learning Centre (VSLC) and the surrounding Langa (of predominantly isiXhosa speaking population) and Bonteheuwel (a predominantly Afrikaans speaking population). By 2015, there was an average of about 45 multi-professional students hosted at the site per rotation. The Langa population was estimated to be 52401 [12] and that of Bonteheuwel to be 45967 [13]. Both communities depend largely on Vanguard CHC for their health needs. Some of the non-emergency primary healthcare services are shared with the 2 nearby smaller 8-hour City of Cape Town municipality clinics.

Design: A narrative qualitative descriptive study

The questions posed to explore the developmental journey of the site were:

- 1. What were the resources that were required and/ or used to develop and to support the running of the Vanguard-site during the first 10 years of its existence?
- 2. What were the longitudinal services amounting to social responsiveness that were provided by or with students during this period at the Vanguard-site?
- 3. How did the students experience their placement?
- 4. How did external professionals/professional bodies assess this CBE-site?

A multipronged approach was used to support the Vanguardsite's CBE program. The students provided discipline-specific routine clinical services and implemented other special but necessary longitudinal programmes that would otherwise not exist at primary level had they been absent.

Students had access to a feedback book throughout their placement where they could express their experiences of the learning environment individually or in groups. Traditionally however, students tended to complete the book at the end of block and in private. The students' feedback, like the reports of external assessors (Table 5), was seriously engaged with by the 'usergroup'. Where compelling actions were required, responses were often expedited.

The VSLC records showed that from early-on CBE-activities were mutually beneficial to CBE partners. During the

study period, four higher education external authorities assessed the Learning site for its fitness to provide UG & PG training. Three reports were favorable and one was not. What was astounding was that the negative CHEER report was produced in the same year (2017) as a favorable report by Prof Barbara Starfield [17], a world-renowned doyen of PHC. The CHEER report, drawn by a group of visiting South African academics was scathing in its condemnation of the site, declaring that the site would not be of benefit to the community whereas an assessment by Prof Starfield suggested that by international standards, Vanguard was an exemplary PHC model. Nevertheless, the 'user group' engaged with all the reports and responded to recommendations accordingly.

To answer the above questions, we reviewed the following electronic and/or paper-based sources of data that was accumulated during the first decade:

- 1. Records indicating discipline-specific groups of students that passed through the site
- Records of clinical and rehabilitation services provided by students
- 3. Records of facility-based and community-based projects done by students
- Annual end-of-year VSLC-reports written by the manager of the Vanguard-site
- Feedback reports on students' experiences of the Vanguardsite (end-of-block VSLC feedback book, e-mails, letters and cards sent by students)
- 6. The reports of external assessors.
- 7. The minutes of meetings by 'the user-group' (a governing body of the CBE-site comprising of interprofessional stakeholders from UCT and community representatives).

We qualitatively analyzed data for:

- 1. Structures that supported CBE (Table 1);
- 2. Students' longitudinal projects (Table 2) and
- 3. Students' end-of-placement feedback (Table 3)
- 4. Notable benefits for stakeholders (Table 4)
- 5. Assessment of site by external bodies (Table 5)

Table 1: Structures that supported CBE activities.

Structure	Role/Purpose
The User group committee	This grouping met monthly primarily to discuss: -matters that supported teaching, learning - The environmental safety within the CBE-precinctthe facilitation of meaningful collaboration between UCT, VSLC, VCHC, CoCT, MDHS and the community.
The favourable location of the Vanguard-site	The CBE-site and the university's Health Sciences' campus are located within the same sub district and are only about 10km apart. The university provides transport.
Layout of the VSLC-built	The built (which was designed with the help of UCT architecture students), is annexed onto the main CHC. Its floor plan allows for fluidity of function and collaboration between the CHC staff and UCT staff & students.
Equipment in the VSLC	The VSLC has fully equipped consulting rooms, a resource room with computers with internet connection, a seminar-room fitted with projector for presentations and specialised equipment that include a fully kitted audiology booth, a lung function test machine, an ultrasound machine and special equipment for speech therapy and physiotherapy.
The presence of two 'resident' coordinators for CBE-activities	The two are a professional nurse (employed by UCT) and a Family physician (in a joint post of UCT and WC-DoH). As generalists, they were both skilled in comprehensivism and organisational leadership at primary level. The Family Physician's joint post became strategic with aligning the UCT's curriculum objectives with the MDHS's objectives

Abbreviations: The User group committee: A multi professional governance committee for the CBE-site. It is comprised of CBE-manager (chairperson), VSLC manager, multidisciplinary clinical supervisors, Health committee representatives and a Family physician. UCT: University of Cape Town; VSLC: Vanguard Student Learning Centre; VCHC: Vanguard Community Health Centre; CoCT: City of Cape Town municipality, MDHS: Metro District Health Service (now renamed Metro Health Service), WC-DoH: Western Cape Department of Health

Table 2: Some longitudinal programmes that were implemented by/with students during the first decade.

Discipline	Approximate number of students per year n(2006)-n(2015)	Programme	Year commenced
Family Medicine	40-60	Students were added to be part of the regular personnel running the Community Rheumatology clinic.	2006
		Students did a project to implement SATS for VCHC	
		Students did a project to establish and help run an HIV Wellness clinic until 2016 when UTT policy was implemented by SA government. Beyond 2016, HIV medicine has been integrated in all the supervised clinics for students.	2008
Audiology	28-115	Students started an Audiology clinic that provides routine screening for hearing problems in neonates & adults on potentially ototoxic medication. This clinic also manages general hearing problems and arranges for fitting and repair of hearing aids.	2006
Speech & Language Pathology	12-31	Student's set-up clinics for children and adults to screen for and manage various speech and language problems.	2010
Occupational Therapy	44-0	Started a Vanguard Supported Employment Programme to help prepare unemployed community members with disabilities for work. The service was discontinued when OT placement was withdrawn in 2014.	2012

Physiotherapy	36-24	Students worked closely with the resident physiotherapist and so function as added personnel in the Physio clinic. This physiotherapist has since become a WoW champion for VCHC, and by association, the physio students have become the most exposed to this wellness programme for staff.	2006
Public Health students	75-60	Students community-based health-promotion projects to address health-related challenges identified by the community. Some projects resulted in long-term solutions (4).	2006
IPP groups	Numbers variable and not formally captured	Some students participate in IPP programs for adults (e.g. with strokes) & children (e.g. with developmental delays)	
		Some students participated in VCHC's 'Annual Open Day' where services provided were showcased to the community.	2010
		Some students participated in the 'Annual career guidance' sessions held at local High-schools under the leadership of the VCHC's Dr X.	

Abbreviations: SATS: South African Triage Scale; UTT: Universal Test and Treat for HIV policy in South Africa; WoW: Western Cape Province's Wellness programme for staff; IPP: Interprofessional Practice; VCHC: Vanguard Community Health Centre; Dr X: one of Vanguard's doctors

Table 3: Thematic analysis of students' feedback of 2006-2015.

Qualitative feedback of the Vanguard-site by students			
Theme	Quote (year when comment was made, study-discipline and year of study)		
Placement is well- organised, clean, and well-resourced	'The facility is clean and neat '(2006, 4 th year physio) 'well-kept and clean' (2007, 4 th year OT) 'The facility is top class (2008, 6 th year medic) 'You keep the place wonderfully organised ((2009, 6 th year medic) 'Everything is available and in order' (2012, 4 th year audio) 'a facility that UCT can be proud of' (2013, 6 th year medic) 'very well-run and well-equipped facility(2014, 4 th year audio) 'I love how straight-forward and to the point you (i.e. the co-ordinators) areno wonder this place runs like a well-oiled machine' (2015, 4 th year SLP)		
The placement provides growth and an enjoyable experience	' making the experience here a comfortable & pleasant one!' (2010, 4th year Audio) 'fostered a lot of independence' (2012, 4th year audio) 'opportunity to practice patient centred care' (2012, 6th year MBCHB group) 'very busy but awesome learning experience' (2014, 4th year physio) 'Thank you for exposing us to a wide variety of patients (2015, 6th year medic)'		

Transdisciplinary / IPE activities	'Thanks for arranging a community tour with Mrs C" (2012, one of IPE group)
	"run very well in terms of referral pathways and working in a multidisciplinary team (2013,6th year medic)
	'I really enjoyed this block especially MPP' (2014, 4th year physio)
	"it was interactive, thank you for making us part of your time" (2014, 6th year medic)
	'Thank you to Dr X for taking us to S-school' (2015, 4th year audio)
	"feel comfortable and competent enough to work independently and collaboratively" (2015, 6th year medic)
	'Your leadership has been my inspiration each day I spent here' (2007, 6th year medic)
	'The staff are always helpful and assist wherever possible' (2006, 4th year CSD)
	'Thank you for making our time here so productive and worthwhile' (2014, 6th year medic)
Staff (mainly tha	'Thanks for being approachable' (2012, 4th year OT)
Staff (mainly the co-ordinators) were welcoming & supportive	'The staff at Vanguard were assisting and welcoming
	"thanks for all the care and support" (2014, 6th year medic)
	'It was a privilege to work under two brilliant ladies' (2014, 6th year medic)
	'I like that we have patients booked in advance' (2014, 6th year medic)
	'Julle twee is die meeste gawe mense wat ek al ooit ontmoet het' (2015, 6 th year medic student from another SA university doing an elective in Family medicine)
	"the patients were understanding & appreciative of our service as students' (2014, 4th year audio students)
The students felt that they were treated like professionals	'an excellent platform for students to use their skills and provide service delivery for the surrounding communities' (2014, 4th year SLP group)
professionals	'Being at Vanguard was a nice combo of student life and being treated like real doctors' (2015, 6th year medic)
	'physios could definitely benefit from hot packs and ice packs' (2006,4th year physio)
	"providing a printer and would prove invaluable" (2006, CSD 4th year)
	'a suggestion for speech therapy resource would be TALC 3^{rd} ed. as the caseload consists largely of children' (2007, 4^{th} year SLP)
Suggestions for improvements &	"maybe another 2 or 3 computers could be added to the resource centre" (2012, 4th year OT)
challenges	'There were times that communication between our tutors was not clearfuture communication & students' expectation regarding the day's work should be clearer. Thank you!' (2015, 6th year medic)
	'The only thing we would suggest is to get UCT to install Wi-Fi access' (2015, 6th year medic)
	"the Family Practice Manual is especially useful, even for use throughout the yearpossibly introducing it in 4th year would benefit students much more" (2015, 6th year medic group)

Abbreviations: IPE: Interprofessional Education; MPP: Multiprofessional Placement (used interchangeably with IPE); CSD: Division of Communication Sciences and Disorders, Disability studies, Nursing and Midwifery, Occupational Therapy & Physiotherapy; OT: Occupational Therapy; SLP: Speech and Language Pathology; medic: medical student; audio: audiology student; physio: physiotherapy student; Dr X: clinician at Vanguard; UCT: University of Cape Town; Mrs C: Health committee representative. S-school: one of the High Schools in Bonteheuwel/Langa area

Table 4. Some of the benefits for UCT and CBE stakeholders.

Stake-holder	Example of benefits
	-Exposure to Public Health programmes of the government at primary level that were otherwise not emphasized in the curriculum (e.g. rehabilitation sciences students, like VCHC staff, also screened all their patients for TB at each contact).
	-IPE (opportunity to work with students from other disciplines who are from UCT and from other local and international universities).
	-Various SSM-students were hosted. These students did mini research projects in for e.g. surgery, anaesthetics and emergency medicine.
UCT-UG students	- Vanguard offered a structured urban placement that was complemented by a short rural rotation for final year medical students.
	-Additional transformative education experienced were:
	 IPP promoted insight into the role of other disciplines in healthcare Participating in regularly hosted SSMs in languages. These were projects where students volunteered to live with either Xhosa-speaking or Afrikaans-speaking families in the township, to practice and refine history-taking skills in those languages and to improve their cultural sensitivities. The cultivation of a culture in students to care for peers in less favourable circumstances. The Vanguard students are orientated to welcome into their groups 'struggling' students who could arrive unexpectedly needing extra support in learning.
	-PG-Nursing students used the VSLC-space for IMCI training (when others are in recess)
UCT-PG students, Other	-Family Medicine registrars' training site
non-Vanguard students & staff	-The Resource-centre in VSLC has IT facilities and was available to any UCT student working in or residing in the precinct
	-The CBE-site was used as a research-site for several UCT-affiliates.For e.g. Vanguard-site was adopted as an official demonstration site for the ASAP programme, to reduce rheumatic fever and rheumatic heart disease [14].
	-The VSLC seminar room (when not in use by students) was booked for VCHC's staff meetings and training.
Vanguard CHC staff	-The academic environment brought by the presence of UCT has inspired local clinicians to study further and to do research that answered local questions. In later years the research became more formal and was published [15,16].
	-Several opportunities arose where medical students piloted DoH provincial audit tools for management of various chronic diseases.
Provincial DoH	-Ad hoc requests were made for students to do projects on behalf of the WC-PPTC e.g. the Vanguard medical students were supervised to translate a previous and the current versions of the provincial warfarin booklet for patients from English to isiXhosa.
	-Community upliftment health-promotion projects were continuously done by HIC students
	-Annual career-guidance sessions helped local high-school learners to decide on future careers to follow.
Community	-Provision of HIV testing kits used by students in SHAWCO clinics held in the vicinity were negotiated by the 'user group' from DoH and sourced from VCHC's pharmacy.
	-VSLC often hosted elective students from other local and international universities. Several of local students were residents of Langa/Bonteheuwel.

Abbreviations: UCT: University of Cape Town; UG: Undergraduate; PG: Postgraduate; IPE: Interprofessional Education; IPP: Interprofessional Practice; ASAP: Awareness Surveillance Advocacy & Prevention Programme for rheumatic fever and rheumatic heart disease. SHAWCO: UCT's Students Volunteer Organisation; DoH: Department of Health; WC-PPTC: Western Cape Provincial Pharmacy and Therapeutics Committee; HIC: Health-In-Context (a public health placement within specific communities); SSM: Special Study Module

Table 5: Summary of Vanguard assessments.

External assessor	Year	Assessment summary
CHEER report	2007	Unfavourable: it referred to the VSLC as 'a simulator site' that would not give any meaningful contribution to the community.
Prof from John Hopkins, USA, Barbara Starfield's letter to Prof Martin Hall (Deputy Vice Chancellor, UCT)	2007	Favourable: 'the fully integrated student teaching in the community (instead of in hospital) is critical for appropriate primary care trainingAs what I saw at Vanguard was most unusual in my experience of visiting primary care clinics in many countries. I regard Vanguard as a model to be emulated elsewhere'
HPCSA accreditation of UG education report	2014	Favourable: 'IT facilities have been introduced at Vanguard' (p16); 'The facility has a very well structured and co-ordinated student resource setting which does enhance the service platform by increasing the facilities for service delivery. Consulting rooms and a well-equipped audiology suit is made available to the CHC. This model highlights the value of a well-structured partnership between the Facility and the Department of Health.'(p54)
RCGP assessment for capacity to provide PG education after the resident FP-consultant had attended a training-course for supervision of registrars.		Favourable: 'the workload for students is controlled to allow for learning 'balances the needs of service delivery with teachinggreat example of audiology students teaching others on audiograms'. FP had some characteristics of being an effective supervisor and others of being an excellent supervisor'

Abbreviations: CHEER report: a South African peer review report by Collaboration for Health Equity through Education & Research; HPCSA: Health Professions Council of South Africa; UG: Undergraduate; RCGP: UK-based Royal College of General Practitioners; PG: Postgraduate; FP: Family Physician; CHC: Community Health Centre

Discussion

Our narrative relates processes that were involved in developing the Vanguard CBE-platform, which the authors perceive as having been fully developed by the end of its first decade of existence. At that 10-year mark, the site was experienced to be running like a well-oiled machine and already integrated within the Metro DHS of the Western Cape. The site had also developed capacity to include new student-programmes with ease as the 'hardware' was in place. Feedback from students, external assessors, community representatives, and other stakeholders assisted in tweaking and adapting systems to support teaching and learning.

The site has demonstrated that by the end of the 1st decade it had a mostly 'win-win' relationship with stakeholders. Not only were the curriculum outcomes for placed students achieved as seen by close to 100% throughput of students, there were

also sustained longitudinal health and wellness programs that were started with and run with students for long-term benefit to the community. The additional experiences for Vanguard-placed students included participating in meaningful interprofessional activities and extended to doing projects that were requested by the Department of Health.

Most UCT students' feedback and assessments reports by external professionals reassured us that Vanguard was a successful vehicle to support community-based service learning. The feedback also provided constructive criticism and recommendations that helped to guide the 'user group' with governance matters. Other studies also showed that a structured CBE was highly rated for the same reasons by students from other South African universities [18-20]. Free-state University students however, rated the language barrier amongst the top 5 of 'dislikes' in CBE. On the contrary, problems with language did not feature at all in the

written feedback of 10 years for UCT students. This may be due to the fact that at UCT there is exposure to compulsory training in locally spoken languages in preclinical years plus students have an opportunity of doing an SSM in either Afrikaans or isiXhosa, where they spend time living with families speaking those languages in the townships.

We are encouraged that at this juncture, almost at the end of the second decade of Vanguard-site's existence, it is still able to demonstrate its resilience for service-learning by its ability to continue to successfully absorb new programmes with ease. In 2020 for example, during the height of the Covid-19 pandemic, a new Metro Health Service-UCT counselling collaboration project to support mothers with psychosocial problems during the 'first thousand days' was successfully included in the packages of care provided with students. What is unique about this project is that it also includes social work students plus it is co-supervised with Vanguard-based midwives.

Limitations

There were two student services that were discontinued without prior warning to stakeholders. This was disruptive. Secondly, due to capacity constraints, VSLC has not been able to accommodate the ever-increasing requests for educational visits of students in preclinical years.

Conclusion and Contribution

The Vanguard CBE-site has largely been successful in delivering service learning because of the intentional governance structures that were established from the outset by a multiprofessional governing body. Secondly, the co-ordination of service-learning activities was done by both a nurse and a family physician, individuals who are generalists and have a skill-set to facilitate for socially accountable projects in a primary healthcare setting [21,22]. Whilst the site was being developed, strategic measures were taken to promote and forge mutually beneficial relationships with stakeholders to advance the objectives of a District Health System. We are hopeful that the CBE programme will in time evolve into a more structured programme like in Clinical Medicine and Population Health (CMP) [23] and have a Community-Based Participatory Research (CBPR) arm [24]. In this way the impact on 'health & wellness' and the scholarship of the Vanguard project will be tracked and measured.

Contribution by Authors

Both conceptualized the article. SN collated data. MN wrote the first draft. Subsequent work on the manuscript was done by both.

Ethical Aspects

The study received ethics approval from UCT-FHS HREC:

reference 449/2018. Only the records accumulated by VSLC were used as source of data. No patients were interviewed and the stakeholders' names were kept confidential.

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