

Rethinking resource optimisation in South African public dental service and education

SADJ MARCH 2025, Vol. 80 No.2 P63-P67

Prof NH Wood, Managing Editor, SADJ – BChD, DipOdont(MFP), MDent(OMP), FCD(SA), PhD

The training of a competent dentist is a delicate alchemy: a fusion of expert instruction, clinical exposure and institutional support. Yet, for South African dental schools, this alchemy may be easily disrupted. Faculty shortages, risks to sessional staff reductions, outdated infrastructure and systemic inefficiencies are converging to form a perfect storm of resource constraints. The result? A strained academic system, overburdened educator-clinicians and graduates struggling to meet the evolving demands of modern dentistry.

At the heart of such a challenge lies a paradox: South Africa boasts some of the most respected dental training programmes on the continent, yet these very institutions can be undermined by budgetary shortfalls, administrative stagnation and fractured governance structures. While well-funded dental schools worldwide are embracing AI-driven simulations, digital learning and interdisciplinary collaboration, South African dental training institutions are grappling with huge service delivery needs, broken or faulty equipment, faculty resignations and growing student numbers.

But here is the real dilemma – this is not just an academic issue; it is a national healthcare concern. The training environment of today dictates the quality of the clinicians we send into society tomorrow. When resource constraints erode the foundation of dental education, the consequences ripple outward: public oral health services deteriorate, patient waiting lists grow and the country loses talent to private practice or international migration.

This editorial examines how resource limitations – both financial and structural – are reshaping dental education in South Africa. More importantly, it explores strategic and evidence-based solutions to protect, optimise and future-proof the training of our dental professionals. If South Africa is to retain its standing as a leader in dental education, it must confront these challenges with urgency, innovation and systemic reform. The survival of our profession depends on it.

Faculty shortages and workforce planning in South African dental services and education

Growing concerns in academic staffing

The sustainability of South Africa's dental education workforce is under threat due to budgetary constraints, policy decisions and systemic inefficiencies. The traditional model, where universities and teaching hospitals rely on a blend of full-time faculty, joint provincial government-university appointments and sessional lecturers, is no longer functioning optimally. Faculty shortages are deepening, placing greater strain on existing staff, limiting clinical training opportunities for students and threatening the quality of dental education and service delivery.

The potential reliance on a shrinking pool of educators

South African dental faculties face increasing difficulty in retaining and recruiting academic staff. Several factors contribute to this:

- Budget cuts and delayed filling of vacancies: Although provincial health departments confirmed that they are not “freezing” posts, there are challenges in the appointment of new staff in many teaching hospitals, affecting joint academic-clinical positions.
- Perceptions of competitive salaries and benefits: Many experienced clinicians opt for full-time private practice, where compensation potentially exceeds what public service/academic institutions can offer.
- Increasing administrative and teaching burdens: As faculty numbers dwindle, the remaining educators take on heavier workloads, leading to burnout, reduced research output and compromised teaching quality.

Risk of sessional and periodical staff reductions

Sessional and periodical staff are critical in bridging faculty gaps, particularly in clinical training, specialty instruction and service delivery. However, due to financial constraints, many dental schools will be concerned about potential worrying outcomes:

- Non-renewal of sessional contracts: Longstanding agreements with sessional clinicians, some of whom also provide specialised training, are at risk of being discontinued or limited.
- Reduced clinical supervision for students: Fewer clinical instructors mean students receive less hands-on experience, a key component of competency-based education. Remaining clinicians will be required to buffer the service-load burden.
- Concerns for strained relationships between universities and provincial health departments: Many sessional staff are appointed through government funding, and cuts to these contracts further weaken the joint responsibility model between universities and public healthcare institutions.

The long-term impact of replacement hiring restrictions

Perhaps most concerning is the inability to replace departing faculty, particularly those who retire or leave for better opportunities. In the past, universities and provincial health departments could recruit replacements in a structured manner. Now, due to strict budgetary controls, vacancies often remain unfilled for extended periods or could even be permanently removed from staffing plans.

This leads to:

- Loss of institutional knowledge: Experienced faculty serve as both educators and mentors. When they leave, their expertise is lost, affecting teaching continuity and student preparedness.

- Overburdened junior faculty and clinicians: Without adequate replacements, younger faculty members take on responsibilities beyond their experience levels, impacting clinical standards and research productivity.
- Declining academic and clinical standards: A shrinking pool of educators leads to fewer academic programmes, longer wait times for patient care and reduced innovation in curriculum design.

Service delivery pressures and the burden of reduced waiting times

South Africa's public healthcare sector is under immense pressure to reduce waiting lists and improve service delivery. While this goal is both necessary and commendable, the approach taken by provincial health departments often overlooks a crucial reality – dental teaching hospitals are not just healthcare facilities, they are academic institutions with a dual mandate. They must balance service provision with clinical training, yet the increasing demand for reduced waiting times is stretching already-limited human resources to breaking point.

This tension can play out in several ways:

- Prioritisation of patient quotas over teaching needs: The demand for faster service delivery means that teaching hospitals are expected to function at full clinical capacity, often at the expense of structured, supervised student training. Students find themselves performing procedures under high-pressure conditions with limited time for deliberate practice and guided learning.
- Staff caught between service and education responsibilities: Academic-clinical joint appointees are increasingly being diverted away from their teaching duties to manage service backlogs. While the goal is to provide care, the unintended consequence is a diminished capacity to mentor and train students effectively.
- The short-term fix that becomes a long-term crisis: Reducing waiting lists today without investing in the next generation of competent clinicians is a short-sighted strategy. If students do not receive the depth of training required, future public oral healthcare services will suffer, leading to an even more severe shortage of skilled professionals in the coming years.

Balancing service expectations with academic integrity

The current model assumes that teaching and service delivery are separate functions, when they are interdependent. Effective clinical training enhances service delivery, not just in the short term, but for future generations of healthcare providers.

Addressing this challenge requires:

- A shift in policy mindset: Teaching hospitals must be recognised as academic institutions first, service providers second. A balanced approach to waiting list reduction must prioritise student training rather than overburdening existing staff.
- Protected teaching and research times for joint appointees: Faculty with dual university-government roles must have guaranteed time dedicated to clinical education, ensuring that service expectations do not completely overshadow their teaching commitments. Surely the role-players in education and healthcare can come together to facilitate this unique situation.
- A sustainable workforce plan: Reducing waiting times requires a long-term investment in training, not just short-term reliance on overworked faculty and sessional staff reductions.

Without a strategic approach to balancing service and training obligations, South Africa risks producing underprepared graduates who will, ironically, struggle to meet the very healthcare demands they are being trained to address.

Moving forward: addressing the faculty shortage

To sustain high-quality public dental services and education in South Africa, institutions must rethink their workforce planning strategies and engage in policy-driven solutions such as:

- Advocating for strategic staff allocations: Government and universities must collaborate to exempt critical academic and clinical positions from hiring freezes.
- Strengthening retention strategies: Competitive remuneration, academic career development pathways and workload balancing must be implemented to retain skilled educators.
- Leveraging alternative teaching models: Expanding interinstitutional collaborations, digital learning tools and structured mentorship programmes can offset faculty shortages while maintaining educational quality.

The impact of sessional and periodical staff reductions on dental training and service delivery

The role of sessional and periodical staff in dental education

Sessional and periodical staff play a critical role in South African public dental service delivery and education, particularly in clinical training. These experienced clinicians and specialists work on a part-time or contractual basis, supplementing full-time faculty by providing important dental services, hands-on training, mentorship and supervision in clinical settings.

Their presence ensures that:

- Students gain exposure to a diverse range of cases and specialisations, enhancing their diagnostic and treatment-planning skills.
- Clinics maintain service delivery standards, balancing academic requirements with public health demands.
- Faculty workload is distributed more evenly, preventing burnout among full-time educators.

However, recent reports of budget constraints and possible policy shifts have the potential to lead to a reduction in sessional staff positions, negatively impacting both patient care and dental training programmes in university-affiliated teaching hospitals.

Budgetary constraints and the reduction of sessional staff

The non-renewal of sessional contracts and cutbacks in periodical staff funding will stem primarily from provincial budget shortfalls, where healthcare expenditure is under severe pressure.

- Sessional contracts are often among the first casualties of cost-cutting measures, as they are viewed as a "non-permanent" expense.
- Limited financial resources are prioritised for essential full-time salaries, administrative costs and emergency health services.
- Rigid bureaucratic processes prevent quick rehiring or restructuring, leaving gaps in faculty rosters that cannot be easily filled.

The direct consequences for dental education and student training

The loss of sessional staff will be particularly damaging for dental students, whose clinical education depends on direct supervision and mentorship from experienced practitioners.

Key challenges include:

- Reduced clinical supervision range and capacity: With fewer senior clinicians available, student-to-supervisor ratios increase, leading to fewer opportunities for direct feedback and skills refinement.
- Limited access to specialised training: Sessional lecturers often include specialists in oral surgery, prosthodontics and oral medicine and periodontology, and other fields where students require expert guidance to develop competency.
- Longer wait times for clinical assessments: A shortage of assessors results in delays in practical evaluations and competency sign-offs, affecting students' ability to progress in their training. This will delay services to patients too.
- Risk of graduating incompetent or underprepared clinicians: Without sufficient exposure to real-world clinical cases, graduates may lack essential skills, compromising patient safety and professional standards.

The broader impact on patient care and public oral health services

Public dental teaching hospitals not only train future dentists but also provide essential oral health services to underserved populations, and these populations groups are large. The reduction in sessional staff directly affects service delivery, as:

- Fewer qualified practitioners are available to manage patient caseloads.
- Clinics experience longer appointment backlogs, delaying critical treatments.
- Public hospitals struggle to balance teaching obligations with service demands, exacerbating oral health disparities.

Revisiting the provincial-university relationship: finding a sustainable solution

The sessional staff crisis underscores risks for broader structural weaknesses in the relationship between universities and provincial health departments. While universities are responsible for training the next generation of dentists, provincial health departments, which fund and administer many of these contracts, are increasingly constrained by economic pressures and political priorities. Both must not lose sight of the need for dentistry, even if there is a lack of understanding of what dentists do.

To prevent a long-term decline in South African dental education and public service delivery, collaborative solutions must be explored, such as:

- Ring-fencing budgets for sessional staff: Dental hospitals affiliated to dental schools are not basic community health clinics (CHCs) or regular hospitals. These are directly responsible for the training and supply of healthcare professionals, for policy development, scrutiny and implementation, and provision of a full spectrum of services to a large community. Provincial governments should recognise the indispensable role of sessional educators in healthcare training and allocate protected funding streams for these appointments.
- Alternative compensation models: Universities could explore incentive-based compensation for private

practitioners who contribute to training, offering academic recognition, research collaboration opportunities or Continuing Professional Development (CPD) benefits in exchange for their teaching commitments.

- Interprofessional training models: Expanding interdisciplinary training by incorporating dental therapists, oral hygienists and community service dentists in clinical mentorship roles, alleviating some of the burdens on sessional educators.

The urgency of addressing the issue

If sessional and periodical staff reductions should occur, the ripple effects will be profound, leading to fewer skilled graduates, diminished patient care and an overall decline in South Africa's dental workforce quality. While financial limitations are real, solutions that preserve and optimise clinical training must be prioritised to ensure the long-term sustainability of both dental education and public healthcare services.

Infrastructure challenges and their impact on clinical training

The growing infrastructure deficit in South African dental schools

South Africa's dental services and education infrastructure is struggling under the weight of budget cuts, ageing facilities and inadequate technological investment. Teaching hospitals and university clinics must simultaneously function as training sites for students and essential service providers for public oral healthcare. However, without adequate investment in facilities, equipment and digital resources, these institutions face significant barriers to delivering high-quality clinical training.

Ageing facilities and equipment shortages

Some dental training institutions operate in decades-old buildings that were designed for much smaller student and patient populations. As demand for dental education and public oral healthcare grows, institutions will face:

- Inadequate space for clinical training: Overcrowded clinics and simulation labs reduce student access to hands-on learning opportunities.
- Deteriorating equipment: Essential dental units, chairs, radiographic machines and sterilisation equipment often function beyond their expected lifespan, leading to frequent breakdowns and costly repairs.
- Supply chain challenges: Institutions struggle to maintain consistent access to basic consumables such as gloves, masks, impression materials and anaesthetics, hampering student training and patient care.

These deficiencies directly impact student training by:

- Limiting clinical case exposure: Students receive less hands-on experience due to equipment downtime or overcrowded facilities.
- Increasing patient treatment delays: Public oral healthcare services experience longer waiting periods, reducing opportunities for students to engage with diverse and complex clinical cases.
- Compromising infection control and safety: Ageing sterilisation equipment and inconsistent supply chains for infection control materials put both students and patients at risk of cross-contamination and compromised treatment standards.

Technology gaps and the digital divide

Globally, dental education is exploring digital learning environments, AI-based simulations and teledentistry.

However, many South African dental schools lack the financial resources to invest in these modern educational tools.

- Limited access to simulation technology: Advanced dental simulators, virtual patient cases and haptic feedback training tools are widely used in well-funded dental institutions abroad, but are largely absent in South African universities due to financial constraints.
- Outdated radiographic and diagnostic tools: Students often train on analogue or older-generation digital imaging equipment, leaving them underprepared for modern digital workflows in private practice or international settings.
- Minimal online learning infrastructure: The Covid-19 pandemic highlighted some gaps in South Africa's e-learning capabilities, as many dental faculties lacked robust digital learning platforms for theoretical instruction, case-based discussions, and remote assessments.

Structural constraints within the provincial government-university partnership

Infrastructure investments in university-linked teaching hospitals often fall under the jurisdiction of provincial health departments, which face competing priorities for funding across multiple healthcare sectors. Unlike independent universities, which can raise funds for capital projects through endowments or private partnerships, dental schools operating in public health settings are dependent on government allocations, which have been progressively shrinking.

Key challenges include:

- Delayed or incomplete capital projects: Planned renovations or expansions in many dental schools are stalled due to funding bottlenecks.
- Bureaucratic barriers to equipment procurement: Cumbersome government procurement policies slow down the replacement of essential equipment, leading to longer periods of inadequate training facilities.
- Lack of autonomy in infrastructure planning: Dental faculties are often tied to broader university or provincial health system priorities, meaning infrastructure upgrades specific to dental education are deprioritised in favour of general medical and hospital needs.

Addressing the infrastructure deficit: solutions and strategic approaches

To ensure South African dental schools remain globally competitive, strategic investment in infrastructure is critical. Some potential solutions include:

- Public-private partnerships for facility upgrades: Universities and provincial health departments could collaborate with industry stakeholders, corporate sponsors and philanthropic organisations to fund infrastructure improvements.
- Decentralised clinical training sites: Expanding community-based outreach programmes and satellite clinics can reduce the pressure on central teaching hospitals while enhancing student exposure to diverse patient populations.
- Cost-effective technology integration: Universities should explore affordable digital learning solutions such as open-source dental simulation software, cloud-based patient management systems and mobile-based tele-education tools.
- Advocating for capital investment prioritisation: Dental faculties must work with government policymakers to secure dedicated budget allocations for infrastructure renewal, ensuring long-term sustainability.

The urgency for action

If infrastructure challenges remain unaddressed, the quality of dental services and education in South Africa will continue to decline, affecting student preparedness, patient care and the overall sustainability of the profession. While budgetary constraints are a reality, creative solutions and strategic investments can ensure that clinical training remains effective, safe and relevant for the next generation of South African dentists.

The broader systemic challenges in resource optimisation for dental education

The complex interplay of policy, governance and institutional autonomy

Resource constraints in South African dental education do not exist in isolation. They are deeply embedded in broader systemic challenges, including policy fragmentation, misalignment between government and academic priorities, inefficient governance structures and the lack of long-term strategic planning. While financial constraints are significant, they are exacerbated by inefficiencies in decision-making, a lack of institutional agility and competing priorities between universities and provincial governments.

Misalignment between universities and provincial health departments

A unique feature of South African dental education is a joint appointment system, where faculty members hold dual roles as university academics and public healthcare professionals under provincial health departments as the main employer. While this system allows for an integrated teaching-service delivery model, it also creates structural inefficiencies and funding conflicts, particularly when financial and human resource management responsibilities are split between institutions, each firmly vested in their own unique responsibility.

Key challenges arising from this governance structure include:

- Conflicting priorities between academia and public health policy: Universities focus on curriculum development and delivery, research and academic excellence, while provincial health departments prioritise clinical service provision and patient care. This often leads to tensions in resource allocation, with teaching hospitals required to balance educational needs against patient treatment quotas. This is not impossible at all.
- Bureaucratic barriers to staff and resource management: Academic institutions are bound by government employment policies and financial frameworks, limiting their ability to independently recruit and retain skilled faculty or invest in specialised teaching resources. Hiring freezes in provincial health departments will directly impact academic staffing levels, yet universities often lack the autonomy to intervene effectively.
- Inconsistent policy implementation across provinces: While some provinces manage joint staff appointments effectively, others struggle with administrative delays, contract uncertainties and budget inconsistencies, leading to fragmented and uneven resource distribution across dental schools. Dentistry is often not the first, or even a main, priority.

Inefficiencies in workforce planning and human resource development

In well-funded dental schools internationally, strategic workforce planning is a cornerstone of academic excellence, ensuring a continuous pipeline of well-trained faculty and clinical educators. In South Africa, however, workforce

planning remains reactive rather than proactive, often dictated by short-term financial constraints rather than long-term sustainability goals.

Major gaps in workforce planning include:

- Lack of succession planning for faculty positions: With many senior faculty members approaching retirement, there is no structured succession plan to develop and mentor the next generation of academic leaders in dentistry.
- Underutilisation of mid-level dental professionals in education: In many high-income countries, dental therapists, oral hygienists and clinical instructors play an expanded role in undergraduate training. However, in South Africa, these professionals remain underutilised as potential teaching resources due to policy restrictions and rigid job descriptions.
- Failure to attract and retain talent: Due to uncompetitive salaries, heavy workloads and bureaucratic red tape, many skilled academics leave for private practice, industry roles or international institutions, leading to a persistent brain drain in dental education.

Limited research funding and its impact on evidence-based training

A strong research culture is foundational to high-quality dental education, enabling curriculum innovation, clinical advancements and continuous professional development. However, research funding for dental education in South Africa has been shrinking, with priority shifting toward emergency healthcare services and epidemiological studies rather than dental workforce development and educational reform.

Consequences of declining research investment include: Reduced capacity for curriculum innovation: Without funding for pedagogical research, South African dental schools struggle to implement modern, evidence-based teaching methodologies.

Limited opportunities for faculty development: Research grants often support faculty engagement in global knowledge exchange, but as funding decreases, opportunities for international collaboration and skill enhancement diminish.

Weaker integration of AI, digital learning and simulation-based training: Many global dental schools are adopting AI-driven educational models, teledentistry training and immersive simulation labs. Without research investment, South African institutions risk lagging behind global advancements in dental education.

The need for a strategic and sustainable approach to resource optimisation

Addressing systemic challenges requires a fundamental shift in how resources are managed, allocated and optimised within South Africa's dental education system. This involves:

- 1. Strengthening intergovernmental collaboration**
 - Universities and provincial governments must establish joint strategic planning committees to align educational priorities with healthcare workforce needs.
 - Policy frameworks should be restructured to allow greater financial and human resource flexibility in academic-clinical staffing models.
- 2. Restructuring the joint appointment system**
 - Revising employment models to allow universities more autonomy in recruiting faculty, while ensuring that joint-appointed staff have clearly defined academic and

clinical responsibilities.

- Exploring hybrid funding models where universities can co-fund joint staff salaries in collaboration with provincial governments, reducing reliance on unstable provincial budgets.
- 3. Enhancing research and innovation in dental education**
 - Increasing investment in dental education research grants to drive innovation in curriculum development, digital learning and workforce planning.
 - Encouraging public-private partnerships to fund research on AI integration, simulation training and competency-based assessment models.
 - 4. Expanding the role of mid-level dental professionals in training**
 - Establishing structured teaching roles for experienced oral hygienists, dental therapists and community service dentists to alleviate the clinical teaching burden.
 - Revising legislation and accreditation policies to enable these professionals to take on formative assessment, mentoring and preclinical teaching roles.

The future of resource optimisation in South African dental education

The challenges facing dental education in South Africa extend beyond financial constraints – they are deeply rooted in structural inefficiencies, misaligned policies and outdated workforce planning models. While addressing funding shortfalls is important, long-term sustainability requires systemic reforms that empower universities, modernise teaching methodologies and create a stable, well-resourced workforce. Without bold action, South Africa risks a long-term decline in dental education quality, which will have lasting consequences for both the profession and public oral healthcare services.

A crisis foreseen, a future unwritten

The trajectory of South African dental education is not a mystery, it is unfolding before us in real time. Faculty shortages are deepening, infrastructure is ageing and resource inefficiencies are tightening their grip on clinical training. Each unfilled academic post, each delayed equipment upgrade, each sessional contract that quietly disappears moves us one step closer to an educational system that can no longer meet its mandate.

And yet, no one will be able to say they did not see this coming. The signs are clear, the consequences predictable. A diminished training environment will lead to underprepared graduates. Underprepared graduates will enter a failing public oral health system. A failing public oral health system will widen the gap in access to essential care. Who, then, will bear the responsibility for this unravelling? More importantly, who will be the victims thereof?

The weight of this concern does not rest on a single entity. Universities must rethink resource allocation, governments must prioritise long-term investment in dental education and policymakers must acknowledge that healthcare cannot function without a pipeline of well-trained dental professionals. To do nothing is to accept a slow decline, is to choose inertia over innovation, is to allow a system of excellence to erode into mediocrity.

But decline is not inevitable! With bold decision-making, strategic partnerships and a commitment to smarter resource management, South African dental education and service delivery can not only survive but thrive. The question is not whether solutions exist. The question is: who will take responsibility for implementing them before it is too late?