

# Teething problems with the implementation of the HPCSA core competency framework in an undergraduate dentistry curriculum

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## ABSTRACT

### Introduction

The Health Professions Council of South Africa (HPCSA) adopted and contextually adapted the CanMEDS competency framework, with a view to prepare undergraduate students for the dynamic healthcare needs of patients and communities they serve. However, limited guidance on integration of this framework into existing curricula leaves educators uncertain about its implementation. Given the critical role of faculty engagement in educational reform, it is crucial to understand dentistry educators' perceptions of this framework.

### Aims

This study explored dentistry educators' experiences with incorporating the HPCSA core competency framework into an existing undergraduate dentistry curriculum.

### Methods

Qualitative methodology within an interpretivist paradigm was utilised. Data were generated by means of semi-structured interviews, then coded and thematically analysed.

### Results

Three main themes and four sub-themes were deductively developed, revealing diverse perceptions regarding the teaching and assessment of the HPCSA core competencies. Participants foregrounded barriers and enablers influencing the effective teaching and assessment of these competencies and emphasized the need for faculty development initiatives.

### Conclusion

Integrating the HPCSA core competency framework into an existing dentistry curriculum posed 'teething' problems. Ideally, the implementation of new core competency frameworks should form part of a curriculum renewal process

and faculty development offerings that prioritize pedagogical conceptual change.

### Keywords

CanMEDS roles, competency-based medical education, constructive alignment, core competencies, curriculum renewal, faculty development, pedagogical conceptual change, undergraduate dentistry curriculum

## INTRODUCTION

Global calls for contemporary health professions education to be more responsive to the evolving health needs of society<sup>1-3</sup> have catalysed the wide-spread adoption of competency-based educational frameworks at both undergraduate and postgraduate levels. Competency-based Medical Education (CBME) involves an outcomes-based approach to the design, implementation, assessment, and evaluation of health professional education programmes, using an organizing framework of predefined abilities or competencies derived from an analysis of societal and patient needs.<sup>4</sup> Although CBME has become a preferred pedagogy for equipping health professional graduates with the requisite competencies to deliver 21<sup>st</sup> century health care in increasingly complex contexts,<sup>1,5,6</sup> Harden<sup>7</sup> cautions that this educational approach is not a 'magic bullet' that by itself can address all the problems facing health professions education. Instead, its success is determined by the way in which it is implemented and the extent and quality of faculty engagement with the process.

South Africa joined the global CBME movement in 2011 when the Undergraduate Education and Training (UET) subcommittee of the Health Professions Council of South Africa's (HPCSA) Medical and Dental Professions Board (MDB) embarked on the process of contextually adapting the Canadian Medical Education Directions for Specialists (CanMEDs) competency framework<sup>8</sup> as an organizing framework of Core Competencies for Undergraduate Students in Clinical Associate, Dentistry and Medical Teaching and Learning Programmes in South Africa.<sup>9,10</sup> This framework, implemented in 2014, requires a competent healthcare professional to be proficient in the seven distinct, yet integrated roles of healthcare practitioner, communicator, collaborator, leader, health advocate, scholar and professional.<sup>8,10</sup>

It is important to acknowledge that the underpinning epistemology and philosophy of CBME differ significantly from the more traditional biomedical approach followed in most undergraduate health professional education programmes in the South African context, including dentistry programmes. Not only are health professions educators expected to

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adopt new and alternative teaching and assessment practices,<sup>6</sup> but the focus on outcomes in the form of observable competencies requires that teaching strategies and assessment tasks are constructively aligned<sup>11</sup> with the competency outcomes for each of the seven HPCSA core competency roles. Since the concept of CBME may be new to many South African health professions educators, they will first need to familiarize themselves with the selected competency framework and alternative educational approaches and consider the ways in which their specific programme outcomes will support the desired competency development.<sup>7</sup>

Whilst the HPCSA core competency framework clearly delineates the key and enabling competencies to be fostered in health professional graduates,<sup>12</sup> limited guidance and support have been provided thus far for the health professions educators who are required to integrate the competency framework into undergraduate curricula at the various South African Universities. This raises concerns about the preparedness of dentistry educators for implementing the HPCSA core competencies in their relevant undergraduate curricula.<sup>13</sup>

At a South African university where dentistry educators are tasked with integrating the HPCSA core competency framework into undergraduate dentistry programmes, the framework has been made available to all academic staff and students on the institution's online curriculum mapping system, the Learning Opportunities, Objectives and Outcome Platform (LOOOP).<sup>14</sup> However, the dentistry educators at this institution have not received formal training on teaching and assessing the newly adopted HPCSA core competencies in undergraduate curricula, limiting their ability to comprehend the alignment that LOOOP is designed to facilitate. Consequently, the teaching and assessment of these competencies are not fully effectuated when students graduate, potentially compromising the preparedness of future dentists to effectively address the oral health needs of the communities they serve.

Educators often struggle to translate calls for curriculum transformation into their own curricula and adapt their teaching practices accordingly.<sup>15</sup> Since faculty engagement and support play a pivotal role in the success of any type of educational reform,<sup>8</sup> it is important to understand how dentistry educators conceptualize the HPCSA core competency framework and perceive its implementation in their own curricula.<sup>16</sup> Currently, there is limited research on how South African dentistry educators understand the teaching and assessment of the HPCSA core competencies. There is also a paucity in the literature on dentistry educators' perceptions of implementing CBME in the South African context. A recent study conducted at a South African university revealed significant uncertainties among dentistry educators around alignment of the HPCSA core competency framework with the undergraduate dentistry curriculum, foregrounding the need for greater clarity and guidance in teaching and assessing these competencies.<sup>17</sup>

## AIM AND OBJECTIVES

The lack of clear guidelines on integrating the HPCSA core competency framework into undergraduate dentistry programmes in South Africa prompted the exploration of dentistry educators' perceptions on the teaching and assessment of these competencies in undergraduate

dentistry programmes at the study site. The objectives were to: a) explore and describe dentistry educators' perceptions and understanding of teaching and assessing the HPCSA core competencies in an undergraduate dental programme; b) identify potential barriers and enablers to teaching and assessing these competencies; and c) provide recommendations for faculty development initiatives aimed at enhancing the teaching and assessment of the HPCSA core competencies in undergraduate dentistry curricula.

## METHODOLOGY

This was an exploratory study, utilising a qualitative methodology within an interpretivist paradigm. This approach facilitated the co-construction of knowledge between the researcher and participants, thus allowing for a deeper understanding of participants' realities, meaning making and perceptions to emerge.<sup>18,19</sup>

The target population for this study comprised of all full-time and part-time dentistry educators at the selected study site (n=127). Participants were purposively selected based on the following inclusion criteria: being a full-time educator on the undergraduate dentistry programme with at least three years of teaching experience, facilitating learning in both clinical and classroom environments, and holding a dentistry qualification. These criteria were deemed essential for the study as the HPCSA core competency framework had been adapted in South Africa four years prior to conducting the study. It was assumed that participants meeting these criteria would provide rich insight into their perceptions and experiences of teaching and assessing the HPCSA core competencies within the context of undergraduate dentistry education.

Following ethical and institutional approval (S18/05/111), the primary researcher approached eligible participants on an individual, face-to-face basis to inform them about the study. Thereafter a detailed email invitation was sent to each prospective participant. Ten (n=10) educators agreed to participate in the study. The primary researcher conducted face-to-face, semi-structured individual interviews to explore participants' perceptions and understanding of teaching and assessing the HPCSA core competencies within their respective modules. The interview schedule was developed based on the study objectives and existing literature on CBME.

Interviews were conducted, audio-recorded and transcribed verbatim by an independent transcriber with the written, informed consent of each participant. Participation was voluntary and participants could withdraw from the study at any stage without any negative consequences. To ensure confidentiality, each participant was assigned a unique number so that no data could be linked to individual participants in any of the research reports.<sup>17</sup> An iterative process of data analysis was undertaken, guided by Braun and Clark's<sup>20</sup> six phases of thematic analysis. These involved familiarising oneself with the data, generating initial codes, searching for themes, reviewing themes, refining and naming themes, and producing the final report.

## FINDINGS

### Participant demographics

Ten (n=10) full-time dentistry educators who taught across undergraduate dental programmes at the selected study site participated in this study. Most participants (n=9) held

## RESULTS

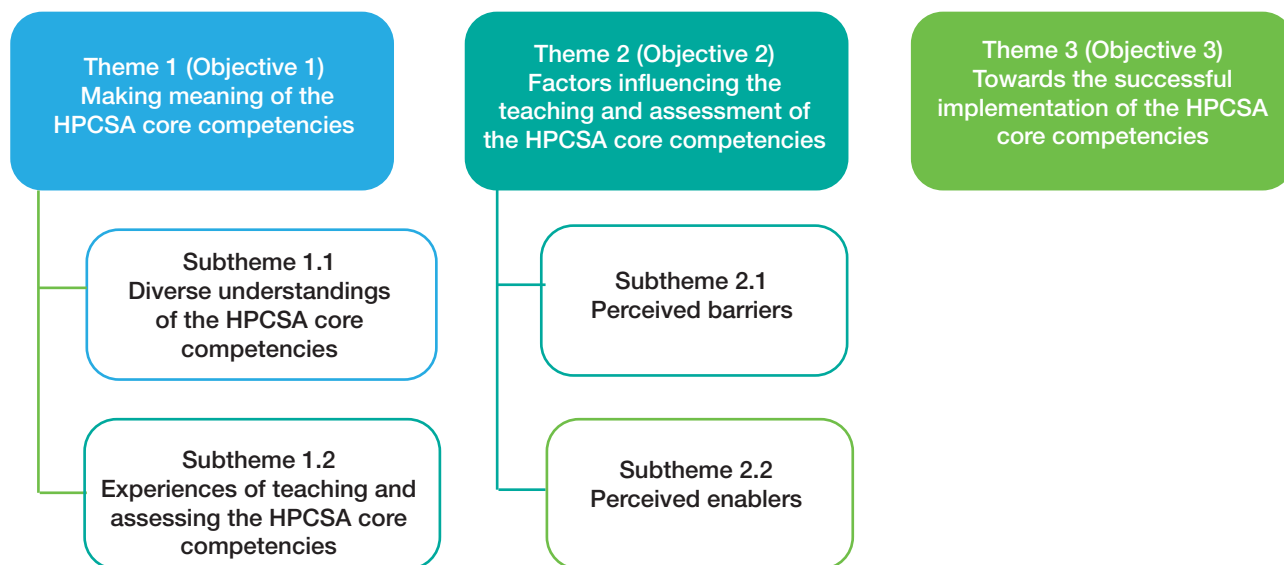


Figure 1: Themes and Sub-themes

a Bachelor's degree in Dental Surgery (BDS/BChD), while one (n=1) held a Bachelor's degree in Oral Hygiene. One (n=1) participant completed an additional Bachelor's degree in Dental Therapy. Participants' teaching experience varied between 4 and 18 years.

### THEMES

The qualitative data analysis offered valuable insights into the range of understandings that dentistry educators held about the HPCSA core competency framework, as well as their perceptions of teaching and assessing these competencies in an undergraduate dental curriculum. Three themes and four sub-themes were deductively developed and categorized according to the study objectives (see Figure 1).

#### Theme 1: Making meaning of the HPCSA core competencies (Objective 1)

Participants' responses revealed a range of perceptions and understandings of the HPCSA core competencies and what the implementation of this framework might mean for their teaching practice going forward. This influenced their engagement with the teaching and assessment of the relevant competencies in their respective modules.

##### Sub-Theme 1.1: Diverse understandings of the HPCSA core competencies

Most participants demonstrated some degree of background knowledge about the HPCSA core competency framework, recognising it as having been "developed in Canada" and "adopted by the HPCSA" [P1]. While participants understood the framework as a set of competency roles, many struggled to recall the specific roles by name: "Could you just refresh my memory on those competencies?" [P9] and "I'm not sure what those competencies are. Maybe if you can just give me a guide... Oh yes, I remember now, yes, to be managers and all that" [P5]. A few participants were completely unaware of the framework's existence prior to participating in this study: "I am hearing about this for the first time now. I didn't even know there was something like that" [P4].

Uncertainty about the meaning and content of individual competency roles left many participants feeling overwhelmed by the expectation to implement this new framework within their own modules: "There are so many things there ... it leaves some parts open to interpretation as to what is 'Professional' and what is 'Ethical' ..." [P10].

Participants' understandings of the HPCSA core competencies ranged from a broad perspective that viewed these competencies as extending "beyond just clinical skills" [P2], to a narrower focus that limited the competencies to a few clinical procedures: "I think there are two basically. It's extractions, you must be confident in doing extractions, and normal restorations" [P3]. The data further revealed conflicting perspectives on whether an integrated or standalone approach should be followed when implementing the competency framework. One participant expressed the belief that "this must be a module on its own, the core competencies. It must just stand there on its own, they deliver it, they assess them on it." [P6].

While most participants viewed the seven HPCSA core competencies as equally relevant and important for preparing graduates for practice, some expressed the belief that "you can't really teach and assess all of those aspects", specifically "at pre-clinical level" [P7]. However, there was consensus that it was the university's responsibility to ensure that dentistry students acquire all the HPCSA core competencies prior to graduation: "My understanding is that before the graduates leave university, they must be having all the seven core competencies that are identified in the Health Professions Council... I think it's a university's responsibility to make sure that every little core competency has been attended to, and they are sure that our students are capable" [P6].

##### Sub-theme 1.2: Experiences of teaching and assessing the HPCSA core competencies

Although the HPCSA core competency framework was outlined in the curriculum documents and learner guides, its teaching and assessment were not yet actively implemented across all curricula at the study site. Consequently, most

participants viewed the implementation of the competencies at this institution as a predominantly theoretical exercise. One participant responded: *"How well we are implementing it, I don't know. Theoretically, yes, we have. You know, in our study guides ... we were asked to update our study guides to include those core competencies in each of our learning objectives, in our course guides, our learner guides"* [P9]. Another participant expressed concern that, while educators were incorporating the new competencies into their study guides, they were not overtly teaching them, ultimately leaving it to chance that students would develop the necessary competencies by the end of the course: *"You put it in your study guide, and you hope at the end of the course the students actually come up with that competency"*[P9]. This challenge extended to the assessment of the new competencies: *"Unfortunately, I don't think we have anything in place to assess, not only advocacy, but in actual fact, all the key competencies"*[P2].

Participants who attempted to teach and assess all seven HPCSA core competencies often felt overwhelmed and eventually focused on only one or two competencies within their respective modules: *"...it was a little bit tricky to cover all of them. So, I found myself using one or two of those competencies more, and not using others at all"* [P9]. Moreover, participants shared varied experiences teaching specific competencies. For example, one participant recognised their limitations in teaching the Collaborator and Leader/Manager roles: *"I realise that I am lacking on collaborator and leadership"* [P10]. Another participant shared their deliberate approach to teaching the Leader/Manager role: *"...we involve the student, and at particular days, there will be one or two who will be at that particular day, will be managing the going out, what we do at the project and stuff. So, I think in that fashion, we are trying to empower them with those skills of management."* [P8]. In contrast, participant six foregrounded the challenges they experienced in fostering leadership among students: *"... when we assign one student to be a manager or a leader, you find that they are pushing each other. No one wants to take responsibility to lead, and which is one of the core competencies..."* [P6]. Regarding the Health Advocate role, one participant suggested that it is best learned in a community setting rather than within a university learning environment *"As a health advocate, that is the link between the health practitioner and the community, but some specialties... are in-house professionals, they are not going to the communities... I find it difficult to say how they advocate for the patients who are in the community... we are not really exposed to what the patients are going through and where they are coming from"* [P6].

## Theme 2: Factors influencing the teaching and assessment of the HPCSA core competencies (Objective 2)

This theme highlighted educators' perceptions of factors that may have either a negative or positive influence on the teaching and assessment of the HPCSA core competencies.

### Subtheme 2.1: Perceived barriers

Factors relating to general curriculum implementation and evaluation processes, as well as poor communication between curriculum developers and educators were regarded as major barriers to the effective implementation of the HPCSA core competencies at the study site: *"... they will just submit this document and keep quiet about it. How are they sure that we are imparting this knowledge to the*

*students as it is now? The next thing that they are likely going to do is to come and amend maybe the communication, not knowing whether it has worked, or it did not work. So, that is my challenge"* [P6]. Poor engagement of educators in the curriculum review processes contributed to the poor integration of the core competencies into teaching and assessment practices: *"I think the problem is that most of these exercises like the curriculum review, curriculum development, it is looked at as an elitist kind of activity, whereby a few individuals, based on what, I don't know, are actually meant to participate in, and because of that, there is actually no buy-in from the rest of the staff..."*[P2].

The fact that participants were not previously exposed to this competency framework in their own training or clinical practice seemed to pose another barrier to their engagement with the teaching and assessment of the new competencies: *"I think lack of experience in some of these roles that we are focusing maybe on a few, not incorporating all of them"* [P8]. This challenge was exacerbated by the fact that participants have not yet received any training on the pedagogical principles and practical implementation of the new competency framework: *"I have never been particularly taught or trained on these core competencies"* [P7]. Participants' sense of confidence with teaching and assessing these competencies was further affected by their primary identification with the clinician role. They regarded themselves first and foremost as dentists, who were required to incorporate the added role of teacher; a role that they mostly felt unprepared for. *"We actually are dentists who are teaching, so we didn't go through the teaching course"* [P5].

Ultimately, time and *"excessive workload"* [P10], significantly affected participants' capacity to engage with the implementation of the new core competency framework: *"... firstly you need to spend a lot of time developing it if you want it to be done properly. So, you need to have the time to do it. You need to have the resources to do it"* [P7].

### Sub-theme 2.2: Perceived enablers

Participants were not able to identify many enablers towards successfully implementing the HPCSA core competency framework in their curricula. Some participants believed that an additional qualification in education may better prepare educators to implement the framework in an evidence-based manner: *"...if you have someone that has a qualification in education, they may be able to come up with ideas. They may have the literature to back them up. You know, what they learnt, it will be easier to facilitate or to incorporate these competencies into our curriculum"* [P9]. One participant suggested that programme evaluation and feedback may guide dentistry educators to improve on certain aspects of teaching and assessing the new competencies: *"So perhaps an evaluation of that would be great, for someone to tell you, well, you could do better on a certain aspect of it."* [P7].

## Theme 3: Towards the successful implementation of the HPCSA core competencies (Objective 3)

Participants made various recommendations for ways in which the successful implementation of the HPCSA core competency framework could be supported.

Some participants believed that it was the responsibility of the HPCSA, as the regulating body, to not only provide guidelines for the implementation of the core competency framework, but also offer training on appropriate teaching

and assessment strategies: "... perhaps some sort of a workshop from the HPCSA" [P9].

The need for faculty development initiatives that would equip dentistry educators with the necessary knowledge and skills to teach and assess HPCSA core competencies was expressed by all participants: "I'm sure a lot of staff members would be interested in being trained on that, so that we know that we are actually doing it properly [chuckles], because we sometimes think, or we assume that we are doing it and doing it correctly, and hope that we are"[P7]. Workshops and dialogical engagement were regarded as important forms of faculty development: "If we can have some workshops where people come and say this is what I am doing, this component on this role, this is how, you know, just people coming and sharing in a workshop...then we talk about all those roles... staff development in this particular area will be really beneficial for all staff members..."[P8].

One participant foregrounded the need for the core competencies to be integrated as curriculum outcomes during future renewal processes, instead of being superimposed on existing curriculum content: "A suggestion is that when the curriculum review is in place, this document is not supposed to be by-the-way. It must form part of their curriculum, and have the measures in place, how we are going to assess, to make sure that everything that is here is being implemented" [P6].

## DISCUSSION

This study aimed to explore the perceptions and understanding of dentistry educators about the teaching and assessment of the HPCSA core competency roles in undergraduate dentistry programmes at a South African University.

Participants in this study were required to implement a new competency framework that differs significantly from the current curriculum without receiving clear guidance. We found that participants were not adequately prepared to teach and assess the HPCSA core competency framework. Lack of guidance resulted in diverse understandings of the framework among participants. Their conceptions ranged from incorporating the framework into learner guides with the assumption that students will somehow learn the core competency roles before graduating, to teaching and assessing only core competency roles that they regarded as applicable to their respective discipline and omitting those that proved problematic without seeking assistance and guidance.

Participants expected the University and the HPCSA to provide clear guidance on the integration of the HPCSA core competency framework into the existing undergraduate dentistry curriculum. While our study findings affirm the need for clarity and guidance in supporting dental educators to implement this framework,<sup>16</sup> we argue that the dentistry educators play a crucial role in the implementation process. Without their full support and understanding of these competencies, the constructive alignment of the framework's intended outcomes may be compromised.<sup>21</sup>

Dentistry educators in this study encountered various barriers when attempting to integrate the HPCSA core competency framework into their curricula, ultimately limiting their effectiveness in teaching and assessing these

new competencies. Their challenges ranged from a lack of exposure to the core competency framework, and limited teaching experience, often tied to their primary professional identity as clinicians,<sup>22,23</sup> to inadequate curriculum revision and insufficient monitoring of the success or failure of curriculum changes, a process commonly known as curriculum renewal.<sup>24</sup> Since evaluation safeguards constructive alignment,<sup>25</sup> continuous evaluation, revision and responsiveness<sup>24</sup> to curricular changes should be embedded in the curriculum renewal process. This will assist curriculum designers and reviewers to identify and address challenges encountered by all stakeholders, thereby better supporting dentistry educators in their teaching needs.

We contend that participants' limited engagement in teaching and assessing the core competency roles within their respective modules, is deeply rooted in their primary professional identity as clinicians. Their traditional approaches to teaching along with perceptions that these core competencies extend beyond the biomedical aspects of patient care, further reinforce this disconnect. Our study findings align with previous studies that highlight how most health professions educators are not formally trained to teach.<sup>22,23,26</sup> Consequently they often prioritize their primary disciplinary identity, feeling more knowledgeable and confident<sup>27</sup> delivering biomedical content to improve patient health<sup>28,26</sup> as they have invested significant time in acquiring clinical skills rather than teaching expertise.<sup>29-31</sup>

Participants acknowledged gaps in their understanding of the HPCSA core competency framework and recommended faculty development initiatives to bridge these gaps. Hedge<sup>32</sup> emphasises that transformation in health professions education can be effectively facilitated through faculty development programs aimed at fostering pedagogical change among clinicians involved in teaching. We concur, and argue that some degree of pedagogical conceptual change is required to support dentistry educators in effectively teaching and assessing the new core competencies..

Rooted in cognitive psychology, conceptual change refers to the alteration of deeply held conceptions that are "in some way central and organizing in thought and learning<sup>33</sup>". In education, the notion of conceptual change is used to understand the challenges individuals encounter when shifting from one framework to another.<sup>34</sup> Pedagogical conceptual change theory applies this notion to educators' conceptions about teaching,<sup>35</sup> facilitating shifts in their underlying beliefs about teaching, and enabling the translation of new pedagogical knowledge into teaching practice.<sup>36,37</sup> In essence, pedagogical conceptual change equips educators with "new ways of both seeing and doing things<sup>38</sup>" in their teaching contexts. Nevertheless, we caution that even with changes in their pedagogical conceptions, some dentistry educators may still feel uncertain about enacting those conceptions. Research suggests that educators require detailed guidance in implementing new teaching and assessment approaches.<sup>13</sup> This is an important consideration, because the cycle of pedagogical conceptual change is not complete until educators have acted on their revised conceptions in meaningful ways.<sup>36</sup>

The pedagogical conceptual change process affords educators an opportunity to identify and reflect on gaps in their teaching conceptions and recognise their need for professional development.<sup>39</sup> We propose that faculty

development initiatives for curriculum renewal should incorporate a focus on fostering pedagogical conceptual change in order to bridge the gap between dentistry educators' existing teaching philosophies and the philosophy of the new competency framework: support dentistry educators in making sense of, and internalising new conceptions of teaching and assessment,<sup>40,41</sup> and introduce strategies that facilitate the practical application of alternative teaching and assessment models. By adopting this approach, faculty development programs can enhance educators' ability to integrate core competencies into dental curricula, ultimately improving teaching and assessment practices in health professions education.

## CONCLUSION

In this study, we explored dentistry educators' perceptions and understanding of teaching and assessing the HPCSA core competency framework in an undergraduate dentistry curriculum. Our findings revealed several 'teething' problems encountered by dentistry educators during implementation. These challenges foregrounded the need for adequate preparation to effectively translate the new core competencies into teaching practice.

We argue that introducing a new competency framework into an existing curriculum without clear guidelines and structured curriculum renewal processes, is likely to result in various misconceptions. In such instances, dentistry educators may rely on their prior experiences of teaching biomedical competencies to interpret and apply the new framework, potentially leading to inconsistencies in the teaching and assessment of the new competencies. We assert that successfully embedding these competencies requires a degree of pedagogical conceptual change, allowing dentistry educators to make meaningful sense of the teaching and assessment of the HPCSA competency framework.

Furthermore, we advocate for continuous curriculum renewal that considers and emphasises the evolving roles and responsibilities of dentistry educators,<sup>42</sup> before a new framework is introduced. We call on dentistry curriculum developers and the UET subcommittee of the HPCSA to recognise the critical role that educators play in implementing curriculum renewal initiatives. In doing so we urge them to provide clear guidance when introducing a new competency framework, to improve the quality of educators' engagement within institutions, and prioritize faculty development programs that focus on fostering pedagogical conceptual change. Such initiatives may better equip dentistry educators to understand, adopt and implement the new core competency framework, transforming their perspectives and practices.

This study contributes to the growing body of literature on the implementation of the HPCSA core competency framework in transforming South African undergraduate dentistry curricula. It underscores the importance of faculty development initiatives that foster pedagogical conceptual change and provide adequate guidance and support, ensuring that educators are well-prepared before a new competency framework is introduced.

## DECLARATION

Author<sup>1</sup> conducted the study in partial fulfilment of a Master's degree in Health Professions Education from Stellenbosch University.

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## AUTHOR CONTRIBUTIONS

Author<sup>1</sup> conducted the study in partial fulfilment of a Master's degree in Health Professions Education from Stellenbosch University. She collected and analysed the data and subsequently prepared the manuscript. Author<sup>2</sup> acted as primary research supervisor, assisted with verifying the data analysis, and commented and contributed to various sections of the manuscript. Both authors reviewed and approved the final article.

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## CONFLICTS OF INTEREST:

None.

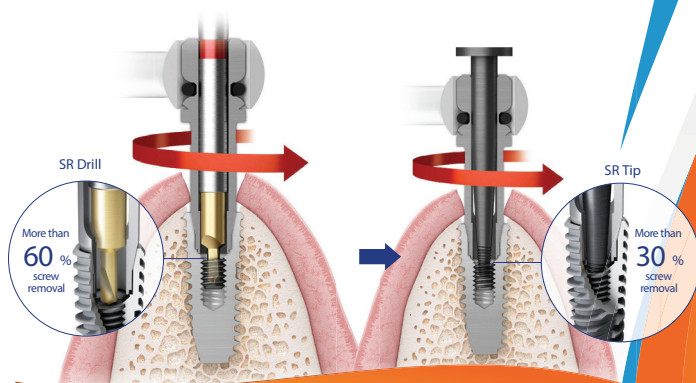
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