


Teaching Philosophy in a Teaching Portfolio: Domain Knowledge and Guidance

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Background: Teaching philosophy defines the beliefs and ideas that guide practices in teaching and learning. Writing teaching philosophy statements for promotion or employment is daunting for inexperienced new faculty members.

Aim: This article aims to discuss the principles of relevant educational domains that academics need to know to be well informed when writing their teaching philosophy. It also provides a new perspective on how to write the personal statements.

Methods: Journal articles published in English language between 2018 and 2023 (as well as important older ones) in electronic databases (Google Scholar, MEDLINE, PubMed, and SCOPUS) were searched, sifted, reviewed and used for this narrative literature review. Additionally, the websites of educational organisations such as higher education institutions were selected using convenience sampling method and searched to ascertain practices.

Results: Educators need to link teaching philosophy statements to the literature about teaching. However, there is a scarcity of literature that provides a comprehensive overview of the required domain knowledge. These domains are Supervision, Curriculum development, Assessment, Mentorship, Pedagogy, and Scholarship of teaching and learning (S-CAMPS domains).

Conclusion: Using various teaching practices and models to achieve the best quality learning and valued transformation is crucial in achieving a comprehensive Scholarship of Teaching and Learning. Therefore, developing a personal philosophy provides the opportunity for reflection on utilizing the theory-practice-philosophy perspective best to serve the students, academic institution, and society.

Keywords: 21st cent. medicine, academic achievement, learning, philosophy, teaching

Introduction

A teaching philosophy statement is one of the contents of a teaching portfolio usually submitted for employment, academic promotion and/or award.¹ Examples of other content of a teaching portfolio include proof of teaching activities, academic administration, curriculum development, research supervision, conference presentations, and evidence of good teaching in the form of teacher evaluation by students and/or letters of appreciation from students and colleagues.^{2,3}

While the composition of a teaching philosophy may vary, depending on the institution, the basic criteria that should be addressed are the purpose of teaching and why an educator decided to teach, and may include the vision for processes in education.⁴ A teaching philosophy also assists teachers to document their challenges and accomplishments, as well as focus on their values and goals.⁵ It is an iterative process, and the content may change after acquiring new knowledge and experience. Given the complex nature of teaching and learning, a metaphor may be used as a statement in a teaching philosophy to draw an analogy.⁶

Besides being part of a teaching portfolio, an education philosophy influences curriculum design and teaching style.⁷ For instance, a teacher's strong support for active learning will reflect on the teaching curriculum designed by the teacher. Due to the links among teachers' values, curriculum design and implementation, the concept of a teacher as a philosopher has been reported.⁴ This interconnectivity among educational theory, practice, and philosophy⁸ has resulted in the emergence of the terminology theory-practice-philosophy perspective.⁹ These perspectives are important, as it helps to

(i) determine the method used for educating or studying; (ii) provide a rationale for thinking and judgement; (iii) improve educational practices by identifying contextually detrimental perspectives; and (iv) assist with planning, integrating and reflecting on teaching and learning.⁹

To develop an informed teaching philosophy, the educator needs to understand the basic concepts of pedagogy, curriculum development, assessment, mentorship and support, postgraduate supervision, and scholarship of teaching and learning. This need resonates with the recommendation suggesting that the first step to constructing a teaching philosophy involves aligning educational concepts.¹⁰ These are important because higher education institutions (HEI) often request that educators' teaching philosophy statements should be linked to the literature about teaching in higher education.¹¹ Although information about teaching philosophy has been published,^{1,12–14} there is scarcity of peer-reviewed journal articles from where the required knowledge for developing and writing the philosophy statements may be gained in one document. Understandably, personal reflections have been published,^{6,15,16} albeit limited in number. Additionally, the published peer-reviewed literature on teaching philosophy lacks information about 21st century skills.¹⁷ Despite these shortcomings, it behoves the educator to write teaching philosophy statements. Therefore, this article aims to discuss the basic knowledge about pedagogy (including andragogy and heutagogy), curriculum development, assessment, postgraduate supervision, mentorship, and scholarship of teaching and learning, which educators in HEI should possess to write an appropriate teaching philosophy statement. Andragogy is adult learning, while heutagogy means self-determined learning.¹⁸ Given that a constellation of knowledge from many domains is required for developing and writing appropriate teaching philosophy statements, multiple fundamental concepts are reported. The article will benefit all scholars in HEI, particularly those in medical sciences who may not have had the opportunity to undergo appropriate training on the topic. The article's content has been sectionalized for easy comprehension of the information and should not be misconstrued as being oblivious to the interrelatedness of the various domains.

Methods

This is a narrative literature review.^{19–21}

Source of Data

Electronic databases (Google Scholar, MEDLINE, PubMed and SCOPUS) of published journal articles in English language were searched using the following search keywords and Boolean operators^{22–25} “teaching philosophy” AND “teaching portfolio” AND “higher education institution”. Journal articles published from 2018 to 2023 (as well as important older ones) were searched. As at inclusion date of 10 September 2023, the search yielded a total of 462 hits (items). Of these, 94 items warranted a full-text review and were included in the final narrative review. The websites of educational organisations such as HEI were also selected using convenience sampling method and searched to ascertain practices.

Results

Theoretical Perspective Linking the Domains

There are links among Supervision, Curriculum development, Assessment, Mentorship, Pedagogy, and Scholarship of teaching and learning (S-CAMPS domains). Pedagogy is about teaching, and should be guided by a teaching curriculum that contains learning activities and outcomes, as well as how the students will be assessed. To undertake the learning activities and achieve the learning outcomes, supervision, mentorship and support are required. These activities will result in a Scholarship of Teaching and Learning, which involves using various teaching practices and models to achieve the best quality learning and valued transformation, as further explained later in this report.

Pedagogy

Pedagogy is defined as the art and science of teaching. In this section, the following will be discussed: (i) learning types and activities; (ii) digital learning; (iii) teaching methods and learning theories; (iv) fundamental educational

philosophies; (v) learning forms, strategies, and cycle; (vi) timing of learning; and (vii) types of knowledge and role of medical educators.

Learning Types and Activities

As changes take place in the world, HEI are expected to lead the way to prepare students for current and future life endeavours through learning. According to Knowles and colleagues, learning is the “process through which behaviour is changed, shaped or controlled.”²⁶ Therefore, learning is the process of acquisition of new knowledge, skills, attitude/behaviours and values²⁷ through study, practice and experiences. The three types of learning, which are attitude, skills, and knowledge,²⁸ therefore, must be considered in all learning activities in HEI. The learning activities may be categorized, although with overlapping concepts, into different modalities, such as online or contact; individual or collaborative; formal or informal; declarative or active; and simulation (human patient or virtual), web-based or case study.^{29–33} Each activity should be useful,³⁴ structured (analysed beforehand),³⁵ blended (traditional classroom teaching and another learning method, eg, digital media), and pitched at an appropriate level for the year of study. Blended learning in its comprehensive form involves using a mixture of various types of technology, settings/avenues, and methods of teaching that have been in existence to facilitate teaching and learning. HyFlex (hybrid flexible), hybrid, and mirror learning are types of blended learning.³⁶ The HyFlex learning is where a student has the choice to attend classes face-to-face in-person (synchronously), online (synchronously or asynchronously) and interchange the use of the two modalities (face-to-face and online) at will during a module.³⁷ In HyFlex learning, therefore, the students use face-to-face and online modalities in a complementary manner. The HyFlex modality is student-centred, enhances students’ knowledge and clinical practice assessment, but a study has shown that practical skills acquisition may be better with face-to-face learning than HyFlex simulation learning.³⁸ In hybrid learning, however, there is no flexibility of combining both face-to-face and online modalities. In mirror learning modality, a group of students attend face-to-face in-person class while others receive the same teaching through a video in an adjoining room, and the learners sit at least 1.5 metres away from each other.³⁶

Digital Learning

Using technology, including virtual reality, artificial intelligence, and online and reimagined out-of-the-simulation-centre skill training, serves to enhance, augment and potentially transform teaching practices³⁴ to achieve the desired learning outcomes. Digital technology, for example, creates cognitively engaging learning avenues³⁹ and addresses the constraint of students who cannot be physically present in the classroom. If the learning activity is pre-recorded, as in podcasts, digital technology prevents the challenges of students with different preferences concerning the most suitable time to undertake a learning activity. A meta-analysis published in 2019 showed that digital problem-based learning is more effective than traditional problem-based learning in improving health professionals’ knowledge and skills.⁴⁰ The benefits of digital learning became evident during and after the COVID-19 pandemic, when the transition to blended learning was fast-tracked in many institutions.⁴¹ Another study also showed that following the COVID-19 pandemic, there has been an increase in the use of virtual learning.⁴²

Many medical students contend that in-person lecture attendance promotes balancing their social relationships with keeping up with coursework, and it is less critical than virtual learning for preparing for basic science examinations.⁴² Understandably, widespread acceptance and use of educational technology will depend on whether or not the product is accessible, widely available, useful, usable, convenient to use, and affordable.³⁴ However, the major barriers to using digital technologies may include limited interactive content, cost constraints, lack of portability, lack of space and quiet environment for those living in crowded conditions, insufficient access to data, and poor internet connectivity.

Teaching Methods and Learning Theories

The various teaching methods (such as lectures, students’ presentations, and group discussions including think-pair-share), avenues of teaching, including meet-up sessions (face-to-face or virtual), and self-directed learning may be utilized to meet the student’s needs. The think-pair-share, for instance, allows shy students to think about their ideas, talk about them with a seatmate before discussion with the whole class.⁴³ These modalities of teaching are important, given that many students have preferred ways through which they learn.^{44,45} The teaching tools and methods for active learning

in medical education are the Socratic method, case-based, problem-based, team-based, blended, computer-assisted learning, simulation, flipped classroom, and massive open online courses.⁴⁶ The Socratic method involves asking a series of questions or cross-examining students to ascertain what they have learnt, making them think critically, directing them to key concepts, and encouraging them to self-learn. Flipped classroom (also called inverted learning) involves providing pre-recorded lectures online to students for self-guided and self-paced learning outside the classroom, while the teacher uses the classroom meet-up session to solve problems and facilitate peer interaction.

A chosen teaching method should be suitable for the learning objective and resonate with any of the various learning theories (Table 1) which explain how people learn.^{47,48}

Fundamental Educational Philosophies

Educational philosophy is a way of thinking which queries the basis of educational practices including educational content, objectives, obstacles, limits, methods, and theory-practice relationship.^{7,55} It describes the beliefs, values, and justifications that influence educational practices and thinking. Occasionally, an educational philosophy may take the name of a theory or practice and vice versa, this being inevitable, as a philosophy justifies a practice and vice versa, with multiple theory-practice-philosophy perspectives being combined to form a new perspective. The selection of different doctrines/elements from various philosophies without fully adopting each parent philosophy is called eclecticism. This is different from syncretism, where two or more parent philosophies are combined, but the inherent contradictions among them persist. There are conflicting reports in the literature about what constitutes the five parent/fundamental educational philosophies that form the basis of most practices in teaching and learning.^{7,8,56} However, there is an agreement in the literature based on available evidence that the three commonest fundamental educational philosophies are realism, idealism, and existentialism (Table 2). An additional seven common fundamental educational philosophies are reconstructionism, pragmatism, essentialism, perennialism, postmodernism, experimentalism, and progressivism (Table 2). Other educational philosophies are romanticism, behaviourism, humanism, positivism, liberalism, and radicalism.

Indeed, there are numerous educational philosophies, which may be divided into student- and teacher-centred philosophies. Examples of student-centred philosophies are constructivism, progressivism, and humanism. The teacher-centred philosophies are perennialism, positivism, behaviourism, and essentialism. A recent study showed that the academic staff in the Department of Business Studies in a HEI used a combination of both student- and lecturer-centred philosophies in the classroom, which questions the superiority of any particular educational philosophy over another.⁵⁷ In the same study, the most commonly used philosophies were reconstructionism, humanism, and positivism.⁵⁷

Table 1 Learning Theories

S/NO	Theory	Description
1	Behaviourism	Learning by applying a stimulus and eliciting a response, ie, conditioning.
2	Cognitivism	Learning by acquiring and processing knowledge/information in the mind/internally.
3	Constructivism	Learning by constructing knowledge using past experiences, where an innate curiosity drives the independent ability of the learner to explore. ⁴⁹⁻⁵¹
4	Nativist theory	Learning predetermined by heredity, ie, the concept that most knowledge and skills are inborn/hereditary.
5	Vygotskian theory	Learning by scaffolding teaching for a learner to master the landmark cultural mediators.
6	Instrumental learning theory	Focuses on individual experiences where the consequences of a voluntary behaviour strengthen or weaken learning, and it is explained by both cognitive and behaviourist learning theories. ⁵²
7	Humanistic learning theory of Maslow	Aims to produce individuals who are internally motivated, self-directed and have the ability for self-actualisation. ²⁶
8	Transformative learning theory	Explains how critical reflection may be utilized to question assumptions and beliefs. ²⁸
9	Social theory of learning	How context and community may encourage and guide the learner.
10	Motivational theory	How autonomy, competence, and feeling of belonging (relatedness) initiate as well as sustain intrinsic motivation and reflection required for learning. ²⁸ An example of a motivational model is self-determination theory. ^{53,54}

Table 2 Fundamental and Other Common Types of Educational Philosophies

S/No	Philosophy	Description
1	Realism	The belief that the characteristics of the universe exist whether or not there are humans that perceive them, and that ideas, as well as facts, may only be taught and learnt, which implies that knowledge is developed from observations and experiences to address complex issues.
2	Idealism	Assumes that the world and the human mind exist together, with the belief that reality only exists if there are ideas; therefore, idealists argue that teaching and learning should be about ideas.
3	Existentialism	The belief that humans have the freedom of self-determination, ie, the choice to construct themselves. ^{7,8,56}
4	Reconstructionism	The belief that society constantly requires changes, and that education is needed to reconstruct society, just as society may be used to reconstruct education.
5	Pragmatism	Contends that truth is relative to the experiences of individuals, and because experiences differ, the perception and method of dealing with truth also change, the focus being on developing a skill set for problem-solving. ⁵⁶
6	Essentialism	Notes that core knowledge should be embedded in learners in a systematic, disciplined, rigorous and thorough manner, this philosophy originating from idealism and realism. ⁷
7	Perennialism	A subject-focused belief that teaches students to master content and develop critical thinking, as in traditional teachings.
8	Postmodernism	Opposes the reasoning of the universality of truth by the Enlightenment of the 18th century, and argues that the claims to knowledge are from those in power to establish control over the exploited and oppressed. ⁸
9	Progressivism	The belief that changes are needed for progress in education and that learning should be based on students' needs, and this philosophy encourages collaboration.
10	Romanticism	The belief in the innate goodness of humans and that emotional self-awareness is the basis for improving humans and society.
11	Behaviourism	Entails using negative and positive reinforcement to achieve learning outcomes.

In contemporary medical education, the nativist (innate or maturational), behaviourist (environmental), constructivist (interactional), and Vygotskian (cultural-historical) perspectives are influential educational philosophies as they explain the major teaching formats, viz lecture, problem-based, team-based and case-based learning.^{9,58}

Learning Forms, Strategies, and Cycle

The theory-practice-philosophy perspective also informs the learning strategy and learning forms, the former being approaches that improve students' academic performances. These strategies include skills/techniques for studying, concentrating, selecting and structuring information, collecting data, understanding and discriminating concepts/information, retaining and memorizing information, and applying the knowledge.⁵⁹ The learning forms include instrumental learning (verify an assertion through empirical analysis), communicative learning (reach a conclusion about what is true through communication), emancipatory learning (critical analysis of processes and the premise for a particular norm)⁶⁰ experiential learning (learn through lived experience), active learning (learn by doing something and thinking about it), and cooperative learning (active learning through peer-to-peer interaction to maximize personal learning and share with group members, which may improve social cohesion).⁶¹ The learning cycle also has to be understood by teachers to assist students at different stages effectively. Kolb's experiential learning cycle has four stages, with learning starting at any stage,⁴ these being active experimentation (learner acts by experimenting on the new idea), concrete experience (the learner achieves hands-on experience that is aligned to the learning outcomes), reflection or reflective observation (learner reflects and reviews experiences from multiple perspectives), and abstraction, also called abstract conceptualisation (the learner analyses what has been learnt and connects it to previous learning experiences to develop a new idea about what has been taught). However, a basic axiom of education is that teacher teaching does not equal student learning. This is crucial in a clinical environment^{62,63} where students' learning depends mainly on the organizational, affective, and pedagogic support provided.^{64,65}

Timing of Learning

The timing of learning may be synchronous or asynchronous, the former taking place at the same time but may be at different venues, and allows the students to collaborate with each other in real-time, such as during an interactive

webinar. In asynchronous education, instruction and learning occur at different times and locations, an example being a lesson through a pre-recorded video.

Types of Knowledge and Role of Medical Educators

While students should receive knowledge through avenues such as lectures and reading (declarative knowledge), it is crucial for them to actively perform rather than only regurgitate their understanding. Active performance involves constructive learning activities that demonstrate functional knowledge. Students' production of various types of educational artifacts or learning objects assists with assessing their functional knowledge, the role of a teacher being crucial in achieving this. Organizations such as the Academy of Medical Educators (Wales, UK, <https://www.medicaleducators.org/About-AoME>) have professional standards expected from medical educators. The five core values of medical educators are (i) designing and planning learning; (ii) teaching and facilitating learning; (iii) assessment of learning; (iv) educational scholarship and evidence-based practice; and (v) educational management and leadership.⁶⁶ To promote active learning, some methods have been introduced, eg, as many students have access to the internet and apps where information can be stored and retrieved, some educators use Just-in-Time Teaching (JiTT). The JiTT refers to an inductive teaching method, where a classroom learning activity, such as group discussion, is determined by the student's performance (based on analysis of items) in an online pre-course assessment undertaken after a reading assignment.⁶⁷ Additionally, item analyses of a post-course assessment are undertaken to indicate the extent to which the learning objectives have been achieved and will inform further actions.

To improve student-centredness, it is essential to receive constructive feedback from students concerning what they like and dislike about a lecturer's teaching methods, as this helps to make improvements through corrective measures. This is important, as the lecturer, through the course of knowledge, has become an expert and may be unaware that the learning activity was not presented to the student in an understandable way.

Assessment

Assessment is a means of obtaining information about students' learning to determine its implications and for action to be taken,⁶⁸ and has to align with its purpose. The following are discussed in this section: (i) purpose of assessment; and (ii) types of assessments.

Purpose of Assessment

The importance or categories of assessment include assessment of learning, assessment as learning, and assessment for learning. For instance, there is an assessment of the learning progress to inform the next learning activity and motivate students, as well as an assessment of achievement, which measures competence after an educational activity. Miller's hierarchical triangle is an example of a tool used in some institutions to assess the level of learning, and it comprises "knows", "knows how", "shows how" and "does" with the latter being the pinnacle.⁶⁹ Additionally, there is an assessment of the effectiveness and quality of an educational program in an institution,⁶⁸ which indicates the quality of teaching and learning. For instance, Kirkpatrick's hierarchical model is used in some institutions to assess an educational program, and the grading of the impact from least to highest are evaluation of reaction (satisfaction), evaluation of learning (skills), evaluation of behaviour (application of learning in real life), and evaluation of results (impact on society/patients).⁶⁹ For administrative purposes, assessing students helps to provide data for completing academic transcripts.

Types of Assessments

Assessments may be conducted periodically throughout a module (formative assessment) and/or at the end of a module (summative assessment). Determining the types of questions and methods of administering them may be challenging, as could structuring and standardizing the assessment processes. Apart from the award of marks (grading), other methods of assessing students may be used depending on the purpose of the assessment.⁷⁰ Ungrading, where there is no award of a mark for assessment, but the teaching method allows feedback and dialogue, has become an attractive practice among many scholars.⁷¹ According to Bellaera et al, educators use dialogue-based activities to develop critical thinking in students.⁷² Ungrading is broadly defined as an assessment method that focuses less on grade but more on learning.⁷³ In this method of assessment, the power of evaluation is shared between the student and the teacher,⁷⁴ and the students

assign their grades by reflecting on the learning process.⁷⁵ Examples of ungrading have been published.⁷⁴ Furthermore, a pass-fail assessment is an ungrading method of assessment if it focuses more on learning than grade, and the situation allows the student and the teacher to share the power of evaluation. According to Alfie Kohn, “And individual courses taken pass-fail may seem less consequential than graded courses to students who have been socialized to think grades matter more than learning”.⁷⁶ While the type of assessment influences learning, other important contributors to vibrant intellectual discovery include what we teach and how we teach them.

Another type of assessment is an authentic assessment, where the student is put in a real-world situation to use the knowledge and skills learnt to solve a problem or assist a specific audience.⁷⁷ This is an outcomes-based education (OBE) approach, meaning that the learning outcomes guide the training and assessment, and the teaching program does not just focus on the array of knowledge objectives.⁷⁸ Competency-based medical education (CBME)⁷⁹ is a type of OBE, and the students are expected to progress in their proficiency levels during a tailored/structured learning program to attain at least the required minimum level of competence in the discipline. This involves a de-emphasis on time-based training due to recognizing that various students achieve the required competence at different paces. A core component of CBME is a programmatic assessment, which involves embedding assessments in all learning activities during a training program. A programmatic assessment emphasizes workplace-based assessment (WBA),^{80,81} where multiple domains are assessed many times by various assessors/raters during the training program, and finally, a credible competence committee rather than a single individual uses the collated assessments to make a summative decision on the level of competence achieved by each student. To implement a CBME, the abilities required to undertake the training program, and the expected competencies and their components, are usually identified, preferably using an appropriate framework. For instance, the CanMEDS 2015 Physician Competency Framework of the Royal College of Physicians and Surgeons of Canada, adopted by organizations such as the Health Professions Council of South Africa, is an example of a competence framework for clinicians and clinical associates. The framework explains that the graduating medical trainee should be competent as a health-care practitioner, communicator, collaborator, leader and manager, health advocate, scholar and professional.^{78,82}

To assess the competence of the students, entrustable professional activities (EPAs) are evaluated, these being observable and measurable units of medical practices that a graduate (or a trainee at a particular level of training) in that discipline is expected to undertake without supervision.^{78,83,84} Therefore, workplace-based learning should be teachable, authentic, reportable, measurable, and recordable for successful implementation. The teacher should provide regular feedback to the students, who should be given the opportunity to respond to refute or affirm the report from the teacher. However, the characteristics of effective assessment strategies are Cost-Effectiveness, Acceptability, Reliability, Validity, and Educational impact (CARVE).⁸⁵ The solitary use of an unwritten and unrecorded audio/video assessment does not provide the opportunity for a reappraisal of a student’s answers to a question and is prone to complaints about bias, which will be difficult to substantiate or refute. Therefore, it is a travesty if an unwritten or audio/video-unrecorded oral assessment conducted by a single examiner has only a summative component without any appropriate opportunity for remediation, as this may become devastating for the unsuccessful candidates.

Both formative and summative assessments are valuable, with the periodic nature of the former improving students’ participation in learning activities throughout the module period, while a summative assessment gives the opportunity to assess students’ holistic understanding of a module. To assist the teacher with deciding on instructional choices and teaching approach, data may be collected from a diagnostic assessment in the form of written multiple-choice or short-answer questions that are administered before (and after) a course to evaluate the current knowledge, skills and views about the topic. Another important issue is that there should be constructive alignment, which means an agreement among the learning objectives, learning activities and assessment.⁸⁶ The curriculum must specify the assessment methods at the beginning of the course, including the evaluation strategy, mark allocation, and contribution of the activity to the module/course mark. It is unacceptable and absurd to change an assessment method without following the stipulated process/policy or providing prior notification to the candidate/s. Regarding the assessment method, the students may be assessed individually or in a group. Examples of the assessment methods are essays, Short Answer Question (SAQ), multiple choice, viva voce, Mini Clinical Evaluation Exercise (mini-CEX) and Directly Observed Procedural Skills (DOPS).^{80,87–89} Others include Objective Structured Clinical Examination (OSCE), Objective Structured Practical

Examination (OSPE).⁹⁰ The OSCE is an examination involving multiple stations with standardised tasks and simulations of patients.

Some terminologies such as continuous and cumulative assessments deserve to be explained. Continuous assessment is the use of series of assessments (that evaluates cognitive, affective and psychomotor attainments) over a period of schooling to determine the final mark of a student.^{91–93} Cumulative assessment is interspersed series of tests where each assessment covers the past course content, and the mean grade or performance of the student in the previous assessments weighs in to determine the final mark or grade in the module.^{92,94} The reference for performance during the assessment include criterion-referenced, norm-referenced, and ipsative types.

Curriculum Development

A teaching curriculum is the road map that informs learning content and schedule of activities. In this section, the following are discussed: (i) teaching curriculum and 21st century skills; (ii) achieving transformation in the teaching curriculum; and (iii) contents of teaching curricula.

Teaching Curriculum and 21st Century Skills

Curriculum development should be guided by an acceptable framework.⁹⁵ However, in the contemporary society learning activities that foster acquisition of 21st century skills should be embedded in the curriculum. The 21st century knowledge areas are: (i) foundation knowledge, ie, core content knowledge, digital/Information and Communication Technology knowledge (ICT), and cross-disciplinary knowledge; (ii) humanistic knowledge, ie, life/job skills, emotional awareness and cultural competence; and (iii) meta-knowledge, ie, innovation/creativity, real-world problem solving or critical thinking, communication, and collaboration.¹⁷ The European Schoolnet recommended that the following 21st century skills should be embedded in the learning activities: skilled Communication, Collaboration, Real-world problem solving and innovation, ICT for learning, Self-regulation in learning, and Knowledge construction, collectively termed CC RISK.⁹⁶ The Innovative Teaching and Learning (ITL) research project has developed a rubric (decision tree) for evaluating 21st century Learning Design (21CLD) activities to ensure that the activities included in a teaching curriculum assist with achieving the required skills.⁹⁷ Therefore, the design of a teaching curriculum should ensure diversity by adhering to the following principles including accessibility, alignment, balance, engagement, equity, flexibility, inclusivity, integrity, and relevance.

Of the 21st century skills, innovative/design thinking assists with starting new projects and revisiting a project that has poor performance.^{98,99} The five stages of design thinking or innovation, according to Hasso Plattner Institute of Design at Stanford (known as the d.school), are (i) empathize (research the needs of the users), (ii) define (state the needs and problems of the users), (iii) ideate (critique assumptions and create new ideas), (iv) prototype (create solutions), and (v) test (try out the solutions and refine them).¹⁰⁰ Critical thinking is needed for knowledge construction, and involves performing learning activities that require the student to interpret, synthesize, evaluate, and/or analyse (i-SEA) an idea or information. Knowledge construction entails going beyond reproducing what has been learnt to generating new ideas and understanding.⁹⁷ Practising an already known procedure or performing activities, where the steps to arrive at the answer are provided, does not constitute knowledge construction. Instead, activities described as research, or where the students develop the steps to be followed, qualify as knowledge construction. In knowledge construction, the student must abstract (ie, thoughtfully analyse from different perspectives) the knowledge they have learnt and apply it in another context to construct other knowledge. In knowledge construction, cross-disciplinary knowledge has learning goals (that cover content, methods or ideas) from various academic subjects/disciplines taught in different classrooms.^{97,101} On the other hand, inter-professional application of knowledge requires the collaboration of students from different professions^{102–104} to agree and engage in a learning activity to design/produce a product for solving a problem identified by the collaborators.⁹⁷

There is evidence to support 21CLD, and as discussed in the preceding paragraphs, 21st century skills improve foundational, human and meta-knowledge^{17,105} and provide the skills needed to support the current increases in technological advancement. A study reported that constructive integration of web tools (an ICT), such as social networking, improves students' feedback and the student-centred approach to teaching. In the same study, web tools also improved the positive experiences of teachers.¹⁰⁶ Additionally, skills such as collaboration encourage effective

communication, create an opportunity for many individuals to participate in a task, save time and reduce financial cost through multiple contributions, promote ethical conduct,¹⁰⁷ and result in the development of a seminal product. Furthermore, success in ecological/environmental education (ie, using multi-dimensional knowledge for problem-solving)¹⁰⁸ may improve with the use of 21st century learning skills, all these achievements promoting practical and culturally sensitive transformative changes.

Achieving Transformation in the Teaching Curriculum

Transformation in HEI assists with responding to new realities and opportunities that are endorsed by the nation and the institution. It is a process of improving the skill set and capacity of individuals, especially graduates from a HEI, through academic programs that develop knowledge for new realities, preserve bodies of knowledge and hereditary of disciplines to ensure that the human capital needed for economic and social growth in the country is raised.¹⁰⁹ To achieve transformation in HEI, iterative key processes of leading a change¹¹⁰ are required to accelerate the organization's transformation agenda, such as those envisaged for HEI in South Africa.¹¹¹ Leading a change requires creating a sense of urgency, building a coalition, forming a strategic vision, enlisting volunteers, removing barriers, generating short-term wins, sustaining the acceleration that drives toward the new opportunities and instituting the change.¹¹⁰ A committed approach to scale-out and scale-up the change, which includes creating an enabling environment and learning what works,¹¹² should be targeted to promote widespread adoption. A mind shift and commitment of the role players, such as the managers, teachers, students and guardians,¹¹³ are required to successfully embed the 21st century learning skills in higher education curricula.

Contents of Teaching Curricula

The contents of the teaching curriculum should be comprehensive to include the module name and outline, learning outcome, assessment strategy, module location in the degree/qualification curriculum, prerequisite knowledge/psychomotor skills that the students should possess, lesson name, as well as learning activities and objectives.¹¹⁴ It should also detail the tools and resources required, the role of students and teachers, level of learning activities in relation to 21st century skills decision trees,⁹⁷ as well as the Structure of Observed Learning Outcomes (SOLO) taxonomy.^{114,115} Notably, the diverse backgrounds of students admitted into health professional schools are likely to directly affect their prerequisite knowledge and psychomotor skills, and may help or hinder learning outcomes. However, while the learning outcomes describe what the student should achieve at the end of the program or course, the learning objectives are what the student should be able to perform after each learning activity.¹¹⁴ It means that the learning outcomes should guide the design of a teaching curriculum, with the "why" questions about the reason for the learning needing to be addressed before the "what" and "how" regarding the required learning activities.³⁴ Various learning activities include didactic, active and collaborative types (such as learning activities from Diana Laurillard conversational framework), these being determined by the learning objectives.

The learning objectives should speak to the learner in a specific manner and be Measurable, Applicable/Achievable, Realistic/Relevant, Time-bound, Transparent and Transferrable, these being abbreviated as SMART(TT).¹¹⁵ Additionally, the learning objectives should incorporate appropriate verbs based on the revised Bloom's taxonomy to indicate the level of the cognitive domain (including remember, understand, apply, analyze, evaluate or create) and the cognitive process.^{86,115,116} The levels of psychomotor and affective domains of Bloom's taxonomy that will be achieved should also be considered¹¹⁷ and attention paid to Krathwohl's hierarchy of affective learning. Overall, using Walker and Avant's classical concept analysis method, the output of smart teaching is to generate and develop wisdom in teachers and students.¹¹⁸

Mentoring and Support

Mentoring is a process through which an experienced person (mentor) guides/coaches and encourages/supports someone else who is less experienced (mentee or protégé) to develop, progress, and be able to think independently to make decisions, and can be long-term formal process, one-stop mentoring advice and informal mentoring. Under this section, the following are discussed: (i) types and guide to mentorship; and (ii) role of mentorship.

Types and Guide to Mentorship

In HEI, the context of mentorship varies and may be “senior faculty with junior faculty”, “faculty with the student”, and “returning student with entering student.”¹¹⁹ It is preferable to have defining principles (ie, competency framework/guideline)^{120,121} to ensure that expectations are kept in focus and met, with the mentee describing the assistance needed, and the mentor, being committed to the mentorship.

Role of Mentorship

Productive mentoring has considerable benefits to the mentee, mentor and organization, such as a HEI. For instance, the mentee will have access to useful information, such as academic and non-academic policies/literature, and suggestions that will impact on the mentee by expanding their thought processes, skills development, scholarly confidence, career advancement, goal setting and action planning.¹²² A feeling of satisfaction develops in the mentor following the constructive progress and achievements of the mentee, and the mentee’s ideas may stimulate or enhance the mentor’s creativity. This increases the capacity and productivity of the organization,^{119,123} these advantages calling for adequate support and a program for mentorship.¹²⁴ This is particularly important for mentors and mentees who are clinical academics,¹²⁵ as they have the additional responsibility of managing patients. Furthermore, all academics who hold joint/honorary posts in HEI and work outside the school campuses should be supported to maximize the benefits of their contributions including career progression.

Postgraduate Supervision

Postgraduate supervision involves the provision of professional and personal guidance to a student from the time of transition into a postgraduate program until graduation.¹²⁶ A key component is postgraduate research supervision, which provides considerable benefits, such as building future capacity for the individual, the HEI and society. Explained here are (i) types of supervision; and (ii) duties of a supervisor.

Types of Supervision

The supervised work may be for a certificate qualification (eg, in travel medicine), a postgraduate diploma (eg, diploma in occupational health), a residency program for a fellowship qualification, a master’s degree (eg, master of medicine degree in South Africa), sub-specialist qualification, or a PhD degree. Mastering research methodology and academic writing, in addition to investigating and reporting a phenomenon, are among the learning outcomes, while PhD research is required to make a novel contribution to the body of knowledge with in-depth discussion. In many institutions, it is inappropriate for a supervisor to supervise research for a degree higher than their academic qualification.

Duties of a Supervisor

An effective research supervisor will usually perform the following duties: match a research work to fit the student and supervisor/s; assess the psychological and academic needs of the student; establish agreed expectations; develop a conceptual framework and research plan to produce a proposal; encourage the student to write early and frequently; have regular contact with the student and provide quality feedback; involve the student in the departmental activities; motivate the student; assist the student with academic and personal challenges; take an active role in building the student’s future career; and review the final research report and presentations.¹²⁷ A contractual agreement should be signed by the student and supervisor/s to guide the expectations and interactions during the project. It is important to note that some duties are common to a mentor and a good supervisor, coach, and sponsor¹²⁸ and they include motivating the student; assisting the student with academic and personal challenges; and taking an active role in building the student’s future career.

Scholarship

Scholarship of Teaching and Learning (SoTL) in higher education involves using various teaching practices and models to achieve the best quality learning¹²⁹ and valued transformation. According to Ernest Boyer in 1990, scholarship includes the pragmatic application of knowledge, teaching good theories and best practices, integrating knowledge across disciplinary lines to construct an approach to societal problems, and discovering usable knowledge.^{130–132} When integral

thinking is used, application, teaching, integration and discovery answer pragmatic, axiological, ontological and epistemological questions, respectively.¹³¹ The questions are about what is practical (pragmatic), valuable (axiological), reality (ontological), and the knowledge (epistemological), all of which may be assessed using criteria approved by the institution.^{133,134} For instance, the rubric by Glassick has the following sub-headings for assessing scholarly work: (i) Clear goals (clear, achievable, and essential); (ii) Adequate preparation (that shows knowledge of existing scholarship, display of skills, and possession of resources necessary for the project); (iii) Appropriate methods (befittingly chosen, applied, and appropriately modified as the situation changes); (iv) Significant results (which achieved the goals, contributed to the field, and raised future research questions); (v) Effective presentation (of the work in an appropriate forum for the intended audience, in a well-organized manner, with integrity and clarity); and (vi) Reflective critique (which comprises the owner's critical evaluation of the work, provision of sufficient evidence for the critique, and generation of new ideas to improve future work through the evaluation).¹⁰³ However, lifelong learning and engagement with the community have become additional components of scholarship recognized by many scholars,¹³⁰ making it essential to differentiate between scholarly teaching and SoTL. Scholarly teaching is practising best teaching practices, while SoTL involves producing peer-reviewed work available to the public for critique and use by peers.^{60,135} However, other authors have made good effort to redefine scholarship as comprising advancement, dissemination and impact of knowledge, but the items in each domain are not comprehensibly specified.¹³⁶ In the context of the contemporary role of an academic, comprehensive SoTL in higher education involves achieving 12 attributes, these being using the best Teaching practices; filling knowledge Gaps; being Innovative; adhering to Technicalities and ensuring adequate Content; maintaining academic Integrity; obtaining and managing research Grants; Supervising students' research; using Evidence-based practice; providing academic Leadership and management; producing Peer-reviewed work usable by others to give credibility to the author/s and the affiliated institutions; and engaging with the Community (academic citizenry). These 12 attributes may be remembered using the acronym "(TIC)² LP EGGs." However, institutional priorities and pressures may influence the type of activities recognized to meet the requirements for SoTL in a specific HEI.^{60,137,138} While a postgraduate degree, such as a PhD or its equivalent, considerably improves educational status, emphasis is also placed on peer-reviewed research published in a textbook or a journal indexed in a specific database.^{139,140}

The sequence of the names of authors in a multi-authored published work is utilized to infer the credit awarded to the authors for their contributions, and different practices exist.^{141,142} According to the American Psychological Association, as a general rule the names of the authors appear in decreasing order of their contributions; however, in some instances, another principal contributor is listed last.¹⁴³ To improve appropriate recognition of authors' contributions, the role of each author in the published work should be described in the publication using terminologies from the Contributor Roles Taxonomy (CRediT) that has a list of 14 roles. These roles are conceptualization, data curation, formal analysis, funding acquisition, investigation, methodology, project administration, resources, software, supervision, validation, visualization, writing – original draft, writing – review and editing.^{144,145} Tenzing is a spreadsheet that may be used during a project to collect the contributions of the authors based on the CRediT.¹⁴⁶

Furthermore, many HEIs recognize various peer-reviewed work to contribute to scholarship.^{147,148} However, the credit awarded to authors of different publications may differ based on the study design or type of report. Not to award any credit to an author for a peer-reviewed article published in a journal accredited by the HEI is to diminish the importance of lessons to be learnt from such category of work. To avoid this, some HEIs adopt a scoring system.¹⁴⁸ For instance, a simple 3-tier approach may be used to award high, middle and low grades to research items as determined by the HEI and this is multiplied by the score achieved based on author's name sequence in the article. The product of this multiplication then weighs-in in the total mark required for promotion to a specific academic position. It is recommended for educators to use the scoring system applicable in their HEIs to guide the efforts they make towards achieving academic promotion. While original studies are among the highly rated, having many publications are crucial and this may be achieved by publishing every research activities,¹⁴⁹ particularly in the chosen field of expertise, because each work may become the foundation for a major innovation. Some HEIs expect the applicants for academic promotion to annotate recent 5–10 most significant scholarly work in their field of expertise.¹⁴⁷ To have many publications to choose from, it is probably best to collaborate with colleagues who are committed to persevering in getting a manuscript

accepted despite the challenges and criticisms that may be encountered during the writing, submission and peer-review processes.

Guidance on Writing Teaching Philosophy Statements

The information provided in the sections on S-CAMPS domains are useful for writing informed teaching philosophy statements. In this section, the following are discussed: (i) steps for constructing teaching philosophy statements; (ii) prompts and approaches to the narrative; and (iii) synthesis of a new perspective to constructing teaching philosophy statements.

Steps for Constructing Teaching Philosophy Statements

Teaching philosophy statements may comprise an introduction, body and conclusion.¹⁵⁰ However, other authors recommended a 4-step approach to constructing a teaching philosophy that consists of (i) aligning educational concepts; (ii) building a framework for educational practice; (iii) constructing the draft; and (iv) reviewing and interpreting the teaching philosophy.¹⁰ To align the educational concepts (step 1), an educator needs to understand the basic principles of the S-CAMPS domains framework. For step 2, using a framework such as those by Schönwetter et al may be helpful.^{1,151} To construct a draft (step 3), using prompts^{5,152} can help the educator to reflect and generate their philosophies.

Prompts and Approaches to the Narrative

The structure of the narrative of teaching philosophy may involve the use of both temporal and ecological approaches. A temporal approach illustrates linear trends of past, present and future experiences, information about the current teaching context, and short- and long-term goals that influence the philosophy. An ecological approach describes a teacher’s strengths and what they care about teaching.¹⁵³ However, some institutions provide a rubric/framework with prompts,^{12,154} which can include any of the questions listed in Table 3.

In medical sciences, and depending on the job, the applicants are often required to provide evidence regarding an understanding of and experience with patient-provider engagement. The expertise is important, given that the encounter may be made complex by factors related to (i) patients (eg, health literacy and demographic profile); (ii) health conditions (eg, severity of the illness); (iii) health-care professionals (eg, attitudes, knowledge and practice of teach back); (iv) tasks (eg if the providers’ clinical abilities is challenged by a required patient safety behaviour); and (v) health-care setting (eg, primary, secondary or tertiary level of care).¹⁵⁵ Notably, a high number of clinical procedures performed are not the sole determinant of skill level. This is because the skill levels differ among surgeons who perform high volume of cases.

Table 3 Examples of Prompts in Templates for Writing Teaching Philosophy Statements

S/No	Prompt
1	Why did you join the education industry?
2	Is teaching beneficial?
3	How do you want to be remembered for your teaching?
4	What type of teaching method do you use?
5	Do you use a blended teaching method?
6	What is your belief about students?
7	How do you think that students learn best?
8	What is good teaching?
9	What is your role in the classroom?
10	What is your belief about assessment?
11	What is your role in assessing students?
12	What do you think about transformation in higher education?
13	What do you think university curricula should contain?
14	What is your belief about mentorship?
15	How do you think students should be supervised?
16	What are your beliefs about the scholarship of teaching and learning in higher education?

Table 4 Synthesis of a Perspective to Constructing Teaching Philosophy Statements

Step	Activity	Explanation
1	For each educational practice to be described or a prompt to be responded to in philosophy statements, link it to (or respond to it in the context of) the vision and promotion criteria of the higher education institution, and to modern literature in teaching and learning.	This is to ensure that the practice or belief is intentional and justifiable. Much of the literature in teaching and learning is described in the S-CAMPS domains sections of this article.
2	Next, identify a fundamental educational philosophy that explains the teaching practice, although this is often not required.	Choose an applicable educational philosophy (Table 2).
3	The practice-theory-philosophy link created should be interrogated and compared with alternatives to bring to the fore the pros and cons of each option. This will influence the choice of practice-theory-philosophy.	Notably, student-centered teaching practices which align with the institutional policies and the teacher's attributes and ambitions are usually favorable.
4	These reflections should be performed repeatedly during the period of the teaching career.	This is because teaching philosophy is iterative.

Abbreviations: S-CAMPS means Supervision, Curriculum development, Assessment, Mentorship, Pedagogy, and Scholarship of teaching and learning.

Therefore, the most pertinent issue is the number of hours that has been spent on deliberate practice (effective learning) of the skills.⁵⁸

Additionally, academic staff and candidates seeking employment or academic promotion should be conversant with the institution's vision/goals, curriculum vitae rubric and criteria for academic promotion. This is to ensure that the requirements for promotion and the institution's goals are known, understood, and possibly targeted and met. Some institutions expect candidates to explain, in the teaching philosophy statements, how their philosophies inform their S-CAMPS domains in relation to established promotion criteria and institutional goals.¹⁵⁶ Therefore, prior awareness and training of academics may assist them to develop the required portfolio which contains the teaching philosophy statements.¹⁵⁷ Examples of teaching philosophy statements are available in webpages of some HEI.¹⁵⁸

Recommendations and Synthesis of a New Perspective to Constructing Teaching Philosophy Statements

Table 4 is a synthesis of a new pragmatic perspective on how to construct teaching philosophy statements. The author recommends the use of this perspective because it is simple, and as well teacher- and HEI-centred.

Limitations

This is a narrative review, and appropriately provides only a qualitative summary of the literature. It does not provide a summary statistics of quantitative data and as such may be prone to bias. Additionally, the literature search strategy and the sifting of the publications may have omitted important journal articles.

Conclusion

A teaching philosophy is a personal reflection that portrays an educator's pedagogical principles and practices. It is rooted in beliefs and values, but a good understanding of the basic concepts in the S-CAMPS domains will guide curated choices of the principles and practices. In a teaching philosophy statement, institutions often use questions that enable guided reflection to elicit information on specific attributes, making it important for educators to be cognizant of the most current and applicable rubric available in the institution. Finally, it is hoped that this review of key domains of teaching and learning in higher education will conscientize academics, particularly inexperienced faculty members, to be well informed about their beliefs and practices, and how to communicate them in their teaching portfolios using the author's newly synthesized perspective to constructing teaching philosophy statements.

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