


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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References

- Schönwetter DJ, Sokal L, Friesen M, et al. Teaching philosophies reconsidered: A conceptual model for the development and evaluation of teaching philosophy statements. *International Journal for Academic Development*. 2002;7(1):83–97. doi:10.1080/13601440210156501
- Little-Wienert K, Mazziotti M. Twelve tips for creating an academic teaching portfolio. *Med Teach*. 2018;40(1):26–30. doi:10.1080/0142159X.2017.1364356
- Babin LA, Shaffer TR, Tomas AM. Teaching Portfolios: uses and Development. *J Mark Educ*. 2002;24(1):35–42. doi:10.1177/0273475302241005
- Donnelly R. Supporting teacher education through a combined model of philosophical, collaborative and experiential learning. *J Scholarsh Teach Learn*. 2009;9(1):35–63.
- Browne M. Developing a Teaching Philosophy. *J Eff Teach High Ed*. 2017;17(3):59–63.
- Hinchliffe LJ, Woodard BS. The Teaching Philosophy Framework: learning, Leading, and Growing; 2011. Available from: <https://commons.emich.edu/loexconf2009/2/>. Accessed June 21, 2022.
- Saritas E. Relationship between philosophical preferences of classroom teachers and their teaching styles. *Educ Res Rev*. 2016;11(16):1533–1541. doi:10.5897/ERR2016.2787
- Tan C, et al. Philosophical perspectives on education. In: Tan C, Wong B, Chua JSM, editors. *Critical Perspectives on Education: An Introduction*. Prentice Hall: Singapore; 2006:21–40.
- Kirch SA, Sadofsky MJ. Medical Education From a Theory-Practice-Philosophy Perspective. *Acad Pathol*. 2021;8:23742895211010236. doi:10.1177/23742895211010236
- Yeom Y, Miller MA, Delp R. Constructing a teaching philosophy: aligning beliefs, theories, and practice. *Teach Learn Nurs*. 2018;13(3):131–134. doi:10.1016/j.teln.2018.01.004
- University of Stellenbosch South Africa. What is a teaching philosophy statement? 2013. Available from: <https://www0.sun.ac.za/ctlresources/teaching-portfolios/>. Accessed February 24, 2023.
- Goodyear GE, Allchin D. Statements of Teaching Philosophy. In: Kaplan M, editor. *To Improve the Academy*. Stillwater, OK: New Fonnns Press and the Professional and Organizational Deveopment Network in Higher Education; 1998:103–122.
- Grundman HG. Writing a Teaching Philosophy Statement Helen; 2006. Available from: <https://www.ams.org/notices/200611/comm-grundman.pdf>. Accessed May 17, 2023.
- Laundon M, Cathcart A, Greer DA. Teaching Philosophy Statements. *J Manag Educ*. 2020;44(5):577–587. doi:10.1177/1052562920942289
- Sayani AH. My Philosophy of Teaching and Learning. *Open Access Libr J*. 2015;2:e2109. doi:10.4236/oalib.1102109
- Thien SJ. A Teaching–Learning Trinity: foundation to My Teaching Philosophy. *J Nat Resour Life Sci Educ*. 2003;32(1):87–92. doi:10.2134/jnrse.2003.0087
- van der Berg C. Teaching Innovation to Strengthen Knowledge Creation in a Digital World. *Electron J Knowl Manag*. 2019;17:144–157. doi:10.34190/EJKM.17.02.004
- Bansal A, Jain S, Sharma L, et al. Students’ perception regarding pedagogy, andragogy, and heutagogy as teaching-learning methods in undergraduate medical education. *J Educ Health Promot*. 2020;9(301). doi:10.4103/jehp.jehp_221_20
- Grant MJ, Booth A. A typology of reviews: an analysis of 14 review types and associated methodologies. *Health Info Libr J*. 2009;26(2):91–108. doi:10.1111/j.1471-1842.2009.00848.x
- Paré G, Kitsiou S. Chapter 9 Methods for Literature Reviews. In: *Handbook of eHealth Evaluation: An Evidence-Based Approach*. Victoria (BC); 2016.
- Green BN, Johnson CD, Adams A. Writing narrative literature reviews for peer-reviewed journals: secrets of the trade. *J Chiropr Med*. 2006;5(3):101–117. doi:10.1016/s0899-3467(07)60142-6
- Gasparyan AY, Ayvazyan L, Blackmore H, et al. Writing a narrative biomedical review: considerations for authors, peer reviewers, and editors. *Rheumatol Int*. 2011;31(11):1409–1417. doi:10.1007/s00296-011-1999-3
- Bramer WM, de Jonge GB, Rethlefsen ML, et al. A systematic approach to searching: an efficient and complete method to develop literature searches. *J Med Libr Assoc*. 2018;106(4):531–541. doi:10.5195/jmla.2018.283
- Kraus S, Breier M, Lim WM, et al. Literature reviews as independent studies: guidelines for academic practice. *Rev Manag Sci*. 2022;16:2577–2595. doi:10.1007/s11846-022-00588-8
- CQUniversity Australia (Central Queensland University). Database Searching; 2023. Available from: <https://libguides.library.cqu.edu.au/c.php?g=760913&p=5456502>. Accessed September 9, 2023.
- Madsen SR, Wilson IK. Humanistic Theory of Learning: maslow. In: Seel NM, editor. *Encyclopedia of the Sciences of Learning*. Boston, MA: Springer US; 2012:1471–1474.
- Knowles M, Holton EF, Swanson RA. *The Adult Learner: The Definitive Classic in Adult Education and Human Resource Development*. Elsevier: USA; 2005.
- Taylor DCM, Hamdy H. Adult learning theories: implications for learning and teaching in medical education: AMEE Guide No. 83. *Med Teach*. 2013;35(11):e1561–e1572. doi:10.3109/0142159X.2013.828153
- Kyndt E, Gijbels D, Groseman I, et al. Teachers’ Everyday Professional Development: mapping Informal Learning Activities, Antecedents, and Learning Outcomes. *Rev Educ Res*. 2016;86(4):1111–1150. doi:10.3102/0034654315627864
- Wang H-Y, Liu T-C, Chou C-Y, et al. A framework of three learning activity levels for enhancing the usability and feasibility of wireless learning environments. *J Educational Computing Res*. 2004;30(4):331–351.
- Armstrong KJ, Weidner TG. Formal and Informal Continuing Education Activities and Athletic Training Professional Practice. *J Athl Train*. 2010;45(3):279–286. doi:10.4085/1062-6050-45.3.279

32. Andreasen EM, Slettebø A, Opsal A. Learning activities in bachelor nursing education to learn pre- and postoperative nursing care—A scoping review. *Int J Educ Res.* 2022;115:102033. doi:10.1016/j.ijer.2022.102033
33. Boise State University. Types of Learning Activities: advantages and Disadvantages; 2013. Available from: <https://sites.google.com/a/boises-tate.edu/si2013/schedule/introduction-to-day-2/types-of-learning-activities-advantages-and-disadvantages>. Accessed December 14, 2022.
34. Goh P-S. Medical educator roles of the future. *Med Sc Educ.* 2020;30(Suppl 1):5–7. doi:10.1007/s40670-020-01086-w
35. Hudson K. *Introducing CAL: A Practical Guide to Writing Computer-Assisted Learning Programs*. Chapman and Hall London; 1984.
36. Verde A, Valero JM. Teaching and Learning Modalities in Higher Education During the Pandemic: responses to Coronavirus Disease 2019 From Spain. *Front Psychol.* 2021;12:648592. doi:10.3389/fpsyg.2021.648592
37. Jongmuanwai B, Simmatun P, Teemueangsa S, et al. Factors and Needs Assessment of Hyflex Learning with Science Activity Base For Strengthen Critical Thinking. *J Phys.* 2021;1835:012095. doi:10.1088/1742-6596/1835/1/012095
38. Abuzaid MM, Elshami W, Issa B, et al. Effectiveness of HyFlex Simulation-Based Clinical Learning in Comparison to Traditional Learning in Undergraduate Clinical Education. Al Naimiy HMK, Bettayeb M, Elmehdi HM, et al. editors. *Future Trends in Education Post COVID-19: Teaching, Learning and Skills Driven Curriculum*. Springer: Singaporre; 2023.
39. Hofer S, Nistor N, Sceibenzuber C. Online teaching and learning in higher education: lessons learned in crisis situations. *Comput Human Behav.* 2021;121:106789. doi:10.1016/j.chb.2021.106789
40. Car LT, Kyaw BM, Dunleavy G, et al. Digital Problem-Based Learning in Health Professions: systematic Review and Meta-Analysis by the Digital Health Education Collaboration. *J Med Internet Res.* 2019;21(2):e12945. doi:10.2196/12945
41. Frenk J, Chen LC, Chandran L, et al. Challenges and opportunities for educating health professionals after the COVID-19 pandemic. *Lancet.* 2022;10362:1539–1556. doi:10.1016/S0140-6736(22)02092-X
42. Gardner G, Feldman M, Santen SA, et al. Determinants and Outcomes of In-person Lecture Attendance in Medical School. *Med Sci Educ.* 2022;32(4):1–8. doi:10.1007/s40670-022-01581-2
43. Mundelsee L, Jurkowski S. Think and pair before share: effects of collaboration on students' in-class participation. *Learn Individ Differ.* 2021;88:102015.
44. Romli MH, Yunus FW, Cheema MS, et al. A Meta-synthesis on Technology-Based Learning Among Healthcare Students in Southeast Asia. *Med Sci Educ.* 2022;32:657–677. doi:10.1007/s40670-022-01564-3
45. Gross CD. Strengthen Your Teaching Skills to Enhance Student Learning. *CSA News.* 2019;64(2):26–28. doi:10.2134/csa2019.64.0222
46. Mourad A, Jurjus A, Hussein IH. The What or the How: a Review of Teaching Tools and Methods in Medical Education. *Med Sci Educ.* 2016;26:723–728. doi:10.1007/s40670-016-0323-y
47. National Tertiary Education Union Australia. Preparing and Presenting a Teaching Portfolio: philosophy, Practice and Performance; 2005. Available from: https://issuu.com/nteu/docs/teaching_portfolio. Accessed May 17, 2023.
48. Bransford JD, Pellegrino JW, Berliner D, et al. How People Learn: brain, Mind, Experience, and School. In: Shonkoff JP, Phillips DA, editors. *Early Childhood Development and Learning: New Knowledge for Policy*. Washington, D C: National Academy of Sciences; 2001:57–86.
49. Kelly J. Learning Theories; 2012. Available from: <https://thepeakperformancecenter.com/educational-learning/learning/theories/>. Accessed February 24, 2023.
50. Kay D, Kibble J. Learning theories 101: application to everyday teaching and scholarship. *Adv Physiol Educ.* 2016;40:17–25. doi:10.1152/advan.00132.2015
51. Morales A. Cognitivism; 2012. Available from: <https://study.com/learn/lesson/cognitivism-education-learning-theory.html>. Accessed February 23, 2023.
52. Williams WA. Instrumental Learning. In: Vonk J, Shackelford T, editors. *Encyclopedia of Animal Cognition and Behavior*. Cham: Springer; 2018.
53. Park SW. Motivation Theories and Instructional Design; 2018. Available from: <https://edtechbooks.org/lidtfoundations>. Accessed July 30, 2023.
54. Urhahne D, Wijnia L. Theories of Motivation in Education: an Integrative Framework. *Educ Psychol Rev.* 2023;35:45. doi:10.1007/s10648-023-09767-9
55. Alanoglu M, Aslan S, Karabatak S. Do teachers' educational philosophies affect their digital literacy? The mediating effect of resistance to change. *Educ Inf Technol.* 2022;27(3):3447–3466. doi:10.1007/s10639-021-10753-3
56. Fries CH. *Teaching Style Preferences and Educational Philosophy of Teacher Education Faculty at a State University*. Doctor of Education Thesis. Oklahoma, USA: Oklahoma State University; 2012.
57. Siraj KK, Hamdan BK, Pandurengan V, et al. A Study on Dominant Education Philosophy in Classrooms: the Case of Colleges of Technology (CoT) in the Sultanate of Oman. *Univ J Educ Res.* 2020;8(12A):8771. doi:10.13189/ujer.2020.082577
58. Sadideen H, Kneebone R. Practical skills teaching in contemporary surgical education: how can educational theory be applied to promote effective learning? *Am J Surg.* 2012;204(396–401):396. doi:10.1016/j.amjsurg.2011.12.020
59. Juste MP, López BR. Learning Strategies in Higher Education. *Int J Learning Ann Rev.* 2010;17(1):259–274. doi:10.18848/1447-9494/CGP/v17i01/46813
60. Kreber C. Developing the Scholarship of Teaching Through Transformative Learning. *J Scholarsh Teach Learn.* 2006;6(1):88–109.
61. Coakley LA, Sousa KJ. The effect of contemporary learning approaches on student perceptions in an introductory business course. *J Scholarsh Teach Learn.* 2013;13(3):1–22.
62. Ramani S, Leinster S. AMEE Guide no. 34: teaching in the clinical environment. *Med Teach.* 2008;30(4):347–364. doi:10.1080/01421590802061613
63. Spencer J. Learning and teaching in the clinical environment. *BMJ.* 2003;326(591). doi:10.1136/bmj.326.7389.591
64. Burgess A, van Diggele C, Roberts C, et al. Key tips for teaching in the clinical setting. *BMC Med Educ.* 2020;20(Suppl 2):463. doi:10.1186/s12909-020-02283-2
65. Friedlander MJ, Andrews L, Armstrong EG, et al. What can medical education learn from the neurobiology of learning? *Acad Med.* 2011;86(4):415–420. doi:10.1097/ACM.0b013e31820dc197
66. Academy of Medical Educators. Professional Standards for medical, dental and veterinary educators. 2021. Available from: [https://www.medicaleducators.org/write/MediaManager/Documents/AoME_Professional_Standards_4th_edition_1.0_\(web_full_single_page_spreads\).pdf](https://www.medicaleducators.org/write/MediaManager/Documents/AoME_Professional_Standards_4th_edition_1.0_(web_full_single_page_spreads).pdf). Accessed March 3, 2023.

67. Gaddy VT, Medlock AE. Just-in-Time Teaching (JiTT): an Active Learning Pedagogy to Study Concepts in Cell Biology. *Med Sci Educ.* 2013;23(4S):664–665. doi:10.1007/BF03341698
68. Pellegrino JW. Assessment as a positive influence on 21st century teaching and learning: a systems approach to progress. *Psicol Educ.* 2014;20(2):65–77. doi:10.1016/j.pse.2014.11.002
69. University of Rochester Medical centre. Tips for Planning and Writing Your Educator Portfolio I; 2017. Available from: <https://www.urmc.rochester.edu/MediaLibraries/URMCMedia/smd/academic-affairs/documents/educator-portfolio-instructions.pdf>. Accessed May 17, 2023.
70. Fisher MR. Student Assessment in Teaching and Learning; 2023. Available from: <https://cft.vanderbilt.edu/student-assessment-in-teaching-and-learning/>. Accessed February 23, 2023.
71. North Island College's Centre for Teaching and Learning Innovation. Ungrading; 2022. Available from: <https://teachanywhere.opened.ca/practices/ungrading/>. Accessed August 31, 2021.
72. Bellaera L, Weinstein-Jones Y, Ilie S, et al. Critical thinking in practice: the priorities and practices of instructors teaching in higher education. *Thinking Skills Creat.* 2021;41(4):100856. doi:10.1016/j.tsc.2021.100856
73. Columbia University in the city of New York. Ungrading: reimagining Assessment of Student Learning; 2023. Available from: <https://ctl.columbia.edu/faculty/sapp/ungrading/>. Accessed September 1, 2023.
74. von Renesse C, Wenger SA. Two Examples of Ungrading in Higher Education in the United States and Germany. *PRIMUS.* 2023;33(9):1035–1054. doi:10.1080/10511970.2023.2229819
75. Guberman D. Student Perceptions of an Online Ungraded Course. *TLI.* 2021;9(1):86–97. doi:10.20343/teachlearninqu.9.1.8
76. Kohn A. Foreward. In: Blum SD, editor. *In: Ungrading Why Rating Students Undermines Learning (and What to Do Instead)*. USA: West Virginia University Press; 2020.
77. McArthur J. Rethinking authentic assessment: work, well-being, and society. *High Educ.* 2023;85(1):85–101. doi:10.1007/s10734-022-00822-y
78. Nel D, Burch V, Adam S, et al. The introduction of competency-based medical education for postgraduate training in South Africa. *S Afr Med J.* 2022;112(9):742–743. doi:10.7196/SAMJ.2022.v112i9.16717
79. Curry L, Docherty M. Implementing competency-based education. *Collected Essays Learning Teaching.* 2017;10:61–74. doi:10.22329/celt.v10i0.4716
80. Prakash J, Chatterjee K, Srivastava K, et al. Workplace based assessment: a review of available tools and their relevance. *Ind Psychiatry J.* 2020;29(2):200–204. doi:10.4103/ipj.ipj_225_20
81. Norcini JJ. ABC Of Learning And Teaching In Medicine: work Based Assessment. *BMJ.* 2003;326(7392):753–755.
82. Frank JR, Snell L, Sherbino J. CanMEDS 2015 Physician Competency Framework.; 2015. Available from: https://canmeds.royalcollege.ca/uploads/en/framework/CanMEDS%202015%20Framework_EN_Reduced.pdf. Accessed February 23, 2023.
83. Valding B, Monti M, Perron NJ, et al. Entrustable professional activities for residency in general internal medicine: a systematic review. *Swiss Med Wkly.* 2022;152:40002. doi:10.57187/smw.2022.40002
84. Cate OT, Taylor DR. The recommended description of an entrustable professional activity. *Med Teach.* 2021;43(10). doi:10.1080/0142159X.2020.1838465
85. Tripartite Alliance (RACP; RACS; RCPSC). Work-based assessment: a practical guide. Building an assessment system around work; 2014. Available from: <https://www.surgeons.org/-/media/Project/RACS/surgeons-org/files/becoming-A-surgeon-trainees/work-based-assessment-A-practical-guide.pdf?rev=64c62242e777411eb43be8ac781dfa4a&hash=DCEE633AC11B7EE63975DF1A6948C99A>. Accessed August 30, 2023.
86. Chatterjee D, Corral J. How to write well-defined learning objectives. *J Educ Perioper Med.* 2017;19(4):E610.
87. Tabish SA. Assessment Methods in Medical Education. *Int J Health Sci.* 2008;2(2):3–7.
88. TeachThought Staff. 22 Simple assessment strategies you can use every day; 2023. Available from: <https://www.teachthought.com/pedagogy/simple-assessment-strategies/>. Accessed August 31, 2023.
89. Stellenbosch U. Assessment in Higher Education; 2023. Available from: <https://www0.sun.ac.za/ctlresources/assessment/>. Accessed September 11, 2023.
90. Shahzad A, Saeed MHB, Paiker S. Dental students' concerns regarding OSPE and OSCE: a qualitative feedback for process improvement. *BDJ Open.* 2017;3(17009). doi:10.1038/bdjopen.2017.9
91. Omonigho AJ Continuous assessment: scope and relevance. Available from: <https://chrome-extension://efaidnbmninnpocajpgcllefndmkaj/https://www.globalacademicgroup.com/journals/teacher%20perspective/CONTINUOUS%20ASSESSMENT%20SCOPE%20AND%20RELEVANCE.pdf>. Accessed August 23, 2023.
92. Obi JSC, Obineli SU. *Continuous Assessment in Counselling*. Enugu, Nigeria: Hugotez Publications; 2019.
93. University of South Africa. Assessment policy; 2005. Available from: <https://www.unisa.ac.za/static/myunisa/Content/Student%20affairs%20%20SRC/Documents/SRC%20Important%20Policy%20Documents/Assessment%20Policy%20-%20rev%20appr%20Council%20-%202019.06.2019.pdf>. Accessed September 11, 2023.
94. den Boer AW, Verkoeijen PP, Heijltjes AE. Comparing Formative and Summative Cumulative Assessment: two Field Experiments in an Applied University Engineering Course. *Psychol Learn Teach.* 2021;20:128–143. doi:10.1177/1475725720971946
95. Hamilton NW, Bilonis LD. Ten principles to Inform curriculum development. In: Hamilton NW, Bilonis LD, editors. *Law Students Professional Development and Formation: Bridging Law School, Student, and Employer Goals*. Cambridge, UK: Cambridge University Press; 2022.
96. Future Classroom Lab. Tool 5.2 – rubrics for 21st Century Learning Activity Design; 2018. Available from: <https://fcl.eun.org/tool5p2>. Accessed February 24, 2023.
97. Innovative Teaching and Learning Research. 21CLD learning activity rubrics; s2012. Available from: <https://fcl.eun.org/documents/10180/14691/5.3x++21cld+learning+activity+rubrics+2012.pdf/e240da11-07c2-4633-a86e-06c12f00d8ad?version=1.0>. Accessed March 3, 2023.
98. Smith MA, Nigro S. Applying design-thinking principles to practice-based pharmacy research. *Ann Pharmacother.* 2023. doi:10.1177/10600280221147014
99. Durski KN, Singaravelu S, Naidoo D, et al. Design thinking during a health emergency: building a national data collection and reporting system. *BMC Public Health.* 2020;20(1):1896. doi:10.1186/s12889-020-10006-x
100. Interaction Design Foundation. Design Thinking; 2023. Available from: <https://www.interaction-design.org/literature/topics/design-thinking>. Accessed February 25, 2023.
101. Parse RR. Interdisciplinary and interprofessional: what are the differences? *Nurs Sci Q.* 2015;28(1):5–6. doi:10.1177/0894318414558624

102. Rizzo Parse R. Interdisciplinary and interprofessional: what are the differences? *Nurs Sci Q.* 2015;28(1):5–6. doi:10.1177/0894318414558624
103. Cohen SS. Interprofessional and interdisciplinary collaboration: moving forward. *Policy Polit Nurs Pract.* 2013;14(3–4):115–116. doi:10.1177/1527154414533616
104. Olenick M, Allen LR, Smego RA. Interprofessional education: a concept analysis. *Adv Med Educ Pract.* 2010;1:75–84. doi:10.2147/amep.S13207
105. Kereluik K, Mishra P, Fahnoe C, et al. What Knowledge Is of Most Worth: teacher Knowledge for 21st Century Learning. *J Digit Learn Teach Educ.* 2013;29(4):127–140. doi:10.1080/21532974.2013.10784716
106. Archambault L, Wetzel K, Foulger TS, et al. Professional Development 2.0: transforming Teacher Education Pedagogy with 21st Century Tools. *J Digit Learn Teach Educ.* 2014;27(1):4–11. doi:10.1080/21532974.2010.10784651
107. Bansal S, Mahendiratta S, Kumar S, et al. Collaborative research in modern era: need and challenges. *Indian J Pharmacol.* 2019;51(3):137–139. doi:10.4103/ijp.IJP_394_19
108. Bajer D Ecological Education: what if Schools Were Ecosystems? 2023. Available from: <https://www.dustinbajer.com/ecological-education/>. Accessed February 25, 2023.
109. Shariffuddin SA, Razli JR. Transformation of higher education institutions in Malaysia: a review. *J Global Business Social Entrepreneurship.* 2017;1(2):126–136.
110. Akhtar VL, Kotter JP Charting the Course – the Path to Transformation in Education; s2019. Available from: <https://www.kotterinc.com/wp-content/uploads/2019/03/Transformation-in-Education-web-version.pdf>. Accessed February 24, 2023.
111. Seepe S. Higher education transformation in South Africa. In: Cross M, Ndofirepi A, editors. *Knowledge and Change in African Universities: Volume 1 - Current Debates.* Rotterdam, The Netherlands: Sense Publishers; 2017.
112. C21 Canada. Shifting Minds 3.0. Redefining the Learning Landscape in Canada; 2015. Available from: <https://www.c21canada.org/wp-content/uploads/2015/05/C21-ShiftingMinds-3.pdf>. Accessed February 26, 2023.
113. C21 Canada. Shifting minds 4.0: 7Cs Competencies for learning and leading; 2017. Available from: <https://c21canada.org/wp-content/uploads/2020/03/CEMC-C21-Canada-7Cs-Shifting-Minds-and-Systems-Drivers-Inventory.pdf>. Accessed February 26, 2023.
114. McMahon T, Thakore H. Achieving constructive alignment: putting outcomes first. *Quality Higher Educ.* 2006;3:10–19.
115. University of Toronto Centre for Teaching Support & Innovation. Developing Learning Outcomes: a Guide for University of Toronto Faculty; 2008. Available from: <https://teaching.utoronto.ca/wp-content/uploads/2015/08/Developing-Learning-Outcomes-Guide-Aug-2014.pdf>. Accessed March 2, 2023.
116. Iowa State University. Revised Bloom’s taxonomy; 2022. Available from: <https://www.celt.iastate.edu/instructional-strategies/effective-teaching-practices/revised-blooms-taxonomy/>. Accessed April 17, 2023.
117. Hoque ME. Three Domains of Learning: cognitive, Affective and Psychomotor. *J EFL Edu Res.* 2017;2(2):56.
118. Zhang A, Feng X. The concept analysis of smart teaching. *Nurse Educ Today.* 2022;112:105329. doi:10.1016/j.nedt.2022.105329
119. Penner R. Mentoring in Higher Education. *Direction Spring.* 2001;30(1):45–52.
120. Dallaghan GLB, Coe CL, Wright ST, et al. Mentoring Medical Education Research: guidelines from a Narrative Review. *Med Sci Educ.* 2022;32(3):723–731. doi:10.1007/s40670-022-01565-2
121. Hamer DH, Hansoti B, Prabhakaran D, et al. Global Health Research Mentoring Competencies for Individuals and Institutions in Low- and Middle-Income Countries. *Am J Trop Med Hyg.* 2019;100(1 Suppl):15–19. doi:10.4269/ajtmh.18-0558
122. Carmel RG, Paul MW. Mentoring and coaching in academia: reflections on a mentoring/coaching relationship. *Policy Futures Educ.* 2015;13(4):479–491. doi:10.1177/1478210315578562
123. Hansoti B, Kalbarczyk A, Hosseinipour MC, et al. Global Health Mentoring Toolkits: a Scoping Review Relevant for Low- and Middle-Income Country Institutions. *Am J Trop Med Hyg.* 2019;100(1 Suppl):48–53. doi:10.4269/ajtmh.18-0563
124. Orsini JM, Bengue MP, Carter HS. Developing a Mentorship Program in Higher Education Institutions. *UF/IFAS Ext Univ Florida.* 2019;2019(2):wc328. doi:10.32473/edis-wc328-2019
125. Kehoe A, Crampton P, Buchanan J, et al. Tips to Support the Recruitment, Retention, and Progression of Clinical Academics. *Med Sci Educ.* 2022;32(2):503–509. doi:10.1007/s40670-022-01512-1
126. Netshitangani T, Machaisa PR. Supervision experiences of postgraduate students at an ODL institution in South Africa. *Cogent Social Sci.* 2001;7:1970442. doi:10.1080/23311886.2021.1970442
127. James R, Baldwin G. *Eleven Practices of Effective Postgraduate Supervisors.* Australia: Centre for the Study of Higher Education and the school of Graduate Studies, University of Melbourne; 1999.
128. Beck Dallaghan GL, Coe CL, Wright ST, et al. Mentoring Medical Education Research: guidelines from a Narrative Review. *Med Sci Educ.* 2022;32(3):723–731. doi:10.1007/s40670-022-01565-2
129. University of Phoenix. Scholarship of Teaching and Learning; 2022. Available from: <https://research.phoenix.edu/content/scholarship-teaching-and-learning>. Accessed March 7, 2023.
130. Register SJ, King KM. Promotion and Tenure: application of Scholarship of Teaching and Learning, and Scholarship of Engagement Criteria to Health Professions Educ. *Health Professions Educ.* 2018;4:39–47. doi:10.1016/j.hpe.2017.02.002
131. Boyer EL. *The Carnegie Foundation for the Advancement of Teaching. Scholarship Reconsidered: Priority of the Professoriate.* New York: Jossey-Bass, John Wiley & Sons; 1990.
132. Streveler R, Moskal B, Miller R. Using Boyer’s Four Forms of Scholarship to Advance Engineering Education. *J Scholarsh Teach Learn.* 2012;3(2):41–50.
133. Fincher RM, Simpson DE, Mennin SP, et al. Scholarship in teaching: an imperative for the 21st century. *Acad Med.* 2000;75(9):887–894. doi:10.1097/00001888-200009000-00009
134. Glassick CE. Boyer’s expanded definitions of scholarship, the standards for assessing scholarship, and the elusiveness of the scholarship of teaching. *Acad Med.* 2000;75(9):877–880. doi:10.1097/00001888-200009000-00007
135. Marcketti SB, Freeman S. SoTL Evidence on Promotion and Tenure Vitas at a Research University. *J Scholarsh Teach Learn.* 2016;16(5):19–31. doi:10.14434/josotl.v16i5.21152
136. Milner RJ, Flotte TR, Thorndyke LE. Defining Scholarship for Today and Tomorrow. *J Contin Educ Health Prof.* 2023;43(2):133–138. doi:10.1097/ceh.0000000000000473

137. Canning J, Masika R. The scholarship of teaching and learning (SoTL): the thorn in the flesh of educational research. *Studies Higher Educ.* 2020;47(6):1084–1096. doi:10.1080/03075079.2020.1836485
138. Secret M, Leisey M, Lanning S, et al. Faculty perceptions of the scholarship of teaching and learning: definition, activity level and merit considerations at one university. *J Scholarsh Teach Learn.* 2011;11(3):1–20.
139. Chen CY. A Study Showing Research has been Valued over Teaching in Higher Education. *J Scholarsh Teach Learn.* 2015;15(3):15–32.
140. South African Department of Higher Education and Training. University Research Support and Policy Development; 2022. Available from: <https://www.dhet.gov.za/SitePages/University%20Research%20Support%20and%20Policy%20Development.aspx>. Accessed February 26, 2023.
141. Tschamtko T, Hochberg ME, Rand TA, et al. Author sequence and credit for contributions in multiauthored publications. *PLoS Biol.* 2007;5(1):e18. doi:10.1371/journal.pbio.0050018
142. Sundling P. Author contributions and allocation of authorship credit: testing the validity of different counting methods in the field of chemical biology. *Scientometrics.* 2023;128:2737–2762. doi:10.1007/s11192-023-04680-y
143. American Psychological Association. *Publication Manual of the American Psychological Association*. Washington DC: American Psychological Association; 2020.
144. National Information Standards Organization. Contributor Roles Taxonomy; 2023. Available from: <https://credit.niso.org/>. Accessed August 26, 2023.
145. Alpi KM, Akers KG. CRediT for authors of articles published in the Journal of the Medical Library Association. *J Med Libr Assoc.* 2021;109(3):362–364. doi:10.5195/jmla.2021.1294
146. American Psychological Association. Authorship: giving credit where it's due; 2023. Available from: <https://www.apa.org/pubs/journals/resources/publishing-tips/giving-credit>. Accessed August 26, 2023.
147. Harvard Medical School. 7.2.1. Promotion to Professor; 2023. Available from: <https://facultyhandbook.hms.harvard.edu/7prof-titles/prof-promo-2/>. Accessed August 26, 2023.
148. University of Cape Town. Academic staff promotion; 2023. Available from: <https://hr.uct.ac.za/performance-promotion-promotion/academic-staff-promotion>. Accessed August 26, 2023.
149. Mbuagbaw L, Anderson LN, Lokker C, et al. Advice for Junior Faculty Regarding Academic Promotion: what Not to Worry About, and What to Worry About. *J Multidiscip Healthc.* 2020;13:117–122. doi:10.2147/jmdh.S240056
150. University of San Diego. What Is a Teaching Philosophy? Examples and Prompts; 2023. Available from: <https://pce.sandiego.edu/teaching-philosophy-examples/>. Accessed March 3, 2023.
151. Ruge G, Schönwetter DJ, McCormack C, et al. Teaching philosophies revalued: beyond personal development to academic and institutional capacity building. *Int J Acad Dev.* 2021. doi:10.1080/1360144X.2021.1963735
152. Payant C. Teaching philosophy statements: in-service ESL teachers' practices and beliefs. *TESOL J.* 2017;8(3):636–656. doi:10.1002/tesj.290
153. Hayden S Developing a Teaching Philosophy Statement. UNLV Best Teaching Practices Expo 2018. University of Nevada, Las Vegas; 2018. Available from: https://digitalscholarship.unlv.edu/cgi/viewcontent.cgi?article=1005&context=btp_expo. Accessed February 23, 2023.
154. Kaplan M, Meizlish DS, O'Neal C, et al. 16: a Research-Based Rubric for Developing Statements of Teaching Philosophy. *Improve Acad.* 2008;26(1):242–656. doi:10.1002/j.2334-4822.2008.tb00512.x
155. World Health Organization. Patient engagement; 2016. Available from: <https://apps.who.int/iris/bitstream/handle/10665/252269/9789241511629-eng.pdf;sequence=1>. Accessed February 19, 2023.
156. University of Free State. Teaching portfolio template; 2022. Available from: <https://www.ufs.ac.za/ctl/home-page/divisions/academic-staff-and-leadership-development/teaching-portfolios>. Accessed March 7, 2023.
157. Abuzaid MM, Elshami E, David L, et al. Perceptions of E-portfolio Use in Lifelong Learning and Professional Development Among Radiology Professionals. *Curr Med Imaging.* 2017;13(4):495–501. doi:10.2174/1573405613666170105153425
158. University of Calgary. Sample Philosophy Statements and Dossiers; 2023. Available from: <https://taylorinstitute.ucalgary.ca/resources/sample-teaching-philosophy-statements>. Accessed June 14, 2023.

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