BIBILE MEMORIAL ORATION 2016

TEACHING BEYOND KNOWLEDGE AND SKILLS FOR THE NEEDS OF THE SOCIETY

R.M. Mudiyanse

Department of Paediatrics, Faculty of Medicine, University of Peradeniya, Sri Lanka
Correspondence: rasnayakamudiyanse@gmail.com

Doi: http://dx.doi.org/10.4038/sljm.v25i2.21

Prof. Senaka Bibile

Abstract

Professor Senaka Bibile's character has many virtues that doctors, medical students, other health professionals as well as administrators can learn from. Furthermore, he championed concepts that are currently accepted as benchmarks in medical education. Therefore, the Bibile memorial oration is an excellent platform to discuss concepts that would facilitate the training of many such doctors through new approaches in medical education.

If education is to have a significant impact in changing the lives of learners, it needs to embrace the depths of cognitive, psychomotor and affective domains (Blooms taxonomy) and expand the horizon of learning to include the complexity of human relationships, computer literacy and information technology. University teachers are challenged by the needs of the society as well as the needs of adult learners that they deal with Maslow's hierarchy. The ever-expanding knowledge-base in medicine makes it impossible to learn or teach everything. Encompassing the paradigm of teaching in a wider spectrum of competencies along with patient-centered attitudes such as empathy would be an achievable but a difficult task. Therefore innovative curricular design, assessments and programme evaluations are vital for successful results. Integrating a spirally evolving communication curriculum could enhance professional development while building attitudes and empathy. Assessments should expand from assessment of recall knowledge to assessment of performing tasks and changing behavior (Miller's pyramid).While focusing on the validity, reliability, objectivity and feasibility of assessment, value of educational impact and catalytic effect of assessment should be exploited for better educational outcomes. Evaluation of student's perceptions and educational impact has revealed that they do not master and internalize the skills taught in the classroom. Patient Practitioner Orientation Scale (PPOS) is a self-reporting tool developed at the Harvard University to evaluate the patient-centered attitudes among students. This could be utilized to demonstrate the impact of our curriculum and other teaching programmes on learner's attitudes. Jefferson Scale of Empathy (JSE) is a self-reporting tool to assess empathy. A translation and validation of this tool will

contribute to evaluate student's empathy. As assessed by JSE, our students seem to deteriorate in their empathy during the second year and recover during clinical training but never recover to the level of empathy at the point of entrance to the course. Educational environment has a major impact on learning outcomes. Dundee Ready Education Environment Measure (DREEM) is a tool that can assess education environments in medical schools. A survey conducted using DREEM tool has high-lighted many strengths but has high-lighted further potential for improvement at the Faculty of Medicine, Peradeniya (FoMP). Students' perception of teachers' feedback has revealed a need for faculty development. Impact of the hidden curriculum on learners' development is a well-known fact. A tool to evaluate hidden curriculum with regards to Culture Communication and Curriculum (C3) was used to assess and compare two medical faculties in Sri Lanka. According to student's perception teachers in FoMP performed better with regard to professionalism. However workplace based assessment is the ultimate test and perhaps the Gold Standard of learning/teaching outcome and the indicator of the success of any education program.

Article

Professor Senaka Bible was born on 13th February 1920. His father was Charles William Bibile who was a 'Rate Mahaththaya', well known for his dedication to fulfil the needs of poor people in Uwa Wellassa. Senaka as a schoolboy excelled in arts, music, drama, dancing and sports. He entered medical school winning the Frazer memorial scholarship. He achieved first class honours at 2nd MBBS as well as in the final MBBS examinations obtaining distinctions in Medicine and Surgery, and winning the Rockwood and Dadabhoy gold medals. Evan as a medical student he demonstrated his passion for helping people by conducting a clinic in his village, Bibile. and providing medicine whenever he returned home for vacation. During his tenure in medical school he studied Marxist ideology, that he went on to impart on many renowned clinicians like Tissa Vithana and Carlo Fonseka. His work as the Regional Director of Health Services at Bingiriya demonstrated his altruism as he provided free after hours service in his quarters with free medicine and food. He fought hard to convince owners of coconut estates in the area to provide a free meal for their workers. He joined the University of Colombo in 1947 and went on to complete a PhD at the University of Edinburgh. He was the first Professor of Pharmacology in Sri Lanka. He was a founding member of the Faculty of Medicine, University of Peradeniya and became the first Dean of the faculty. He was instrumental in establishing the Medical Education Unit at Faculty of Medicine as well as the Kandy Society Medicine; an organization that harnesses collaboration. Prof Bibile extended his services nationally by developing the national formulary committee and establishing the State Pharmaceutical Corporation and served as its founder chairman. His political career was also remarkable. As a treasurer of the Lanka Sama Samaja Pakshaya, he opted to contest an obviously losing battle just to promote the party idealism against racism. Prof Bibile promoted ethnic harmony. However his opponents purported misleading information among the public leading to him losing the election. Now it may be too late to consider what Prof Bibile has to say about ethnic harmony.

Professor Bibile is recognized for his extremely successful drug policy, accepted by the WHO and the non-aligned movement. He was appointed as the senior advisor to UNCTAD. His drug policy is

recognized and implemented better in many other countries than in Sri Lanka.

Professor Senaka Bibile is a memorable and an exemplarily character of the era who has set many examples for doctors, medical students and other health professionals as well as politicians to follow. As an empathetic and patient centered doctor he was an expert communicator, collaborator, advocate, professional and a manager. As a teacher he was a learner centered expert teacher who engaged in collaborative learning and research, relevant and beneficial to society. As a politician he exhibited his genuineness and empathetic human feeling extending universally. Therefore exploration of the life of Bibile creates ample opportunities to learn for those who wish to be better. Therefore, the Bibile memorial oration is an ideal occasion to explore possibilities of teaching beyond knowledge and skills in undergraduate teaching.

Nelson Mandela has stated that education is the most powerful weapon, which can be used to change the world; probably highlighting the role of education in changing the behavior of learners that will contribute to changing the world. Teachers are striving to achieve just that by creating planned and efficient experiences to facilitate learning. Teaching goes beyond imparting knowledge and skills. Affective domain that deals with attitudes, emotions and feeling is vital for the changes of behaviour within the learner. Medical educationists now recognise interpersonal skills, responsibility, communication, information technology and numerical skills as other essential additional domains of learning. The cognitive domain involves not only the acquisition of basic recall knowledge that is useful in responding to teachers' questions at examinations. It also involves comprehension and application of the knowledge that is useful for clinical practice. Students should be able to engage in analysis and synthesis of new knowledge to expand their horizon of knowledge and should be able to evaluate situations to generate new concepts to the world. Coaching students to face examinations does not support the development of cognitive domain.

Learning psychomotor skills involves perception of the skill by the learner by observations enabling them to provide a guided response. As they practice under supervision they will master the skills needed to achieve the stage of autonomy of many skills that is required for a practicing doctor. Affective domains that change the behaviour of the learner involve initial perception of attitudes and compliance without analysis at the onset. This is achieved by role modelling and explicit rules and regulations. Acceptance will follow, probably when the values of such behaviour are demonstrated and perceived by the learner. Finally such behaviours will be internalized and become autonomic resulting in sub conscious practice. Considering relationships as a domain of learning is helpful in teaching clinical skills, especially communication skills. Perhaps the initial relationship between two persons or two parties is a matter of being friendly or not, developing to a stage of giving information and receiving information and becoming supportive. Finally relationships will develop on to a stage of sharing facts as well as opinion. Students are expected to develop doctor patient relationships as well as relationships with colleagues and teachers which will facilitate collaborative planning of patient care as well as learning.

Medical teachers have an obligation to provide for the needs of our learners as well as stakeholders. They have to decide on what to teach and how to teach effectively to produce the doctor required by society. However medical educators need to

understand that we are dealing with adult learners and their autonomy, self-determination, and goal orientation need to be taken in to consideration in teaching programmes. They would like the relevance, practical involvement, sense of direction regarding outcomes, reflection and feedback in teaching. Maslow's hierarchy of needs elaborates physiological necessities that include food, shelter, comfort, security, their safety and a sense of belonging that they are part of the group. Their self-esteem is vital. Achieving self-actualization and transcendence indicating realising their greatness should be assured by the teachers and the teaching environment.

Medical teachers have a social responsibility of producing good doctors in return for the huge investment by the public on education, and the trust and respect bestowed on medical teachers. According to Murtagh (WHO) competencies of a good doctor includes developing rapport and good communication skills, asking the right question, being astute and observant, developing optimal ethical and professional standards, having a fail-safe diagnostic strategy, developing a supportive network, knowing essential therapeutics, developing basic procedural skills, being well prepared for emergencies in addition to knowing one's self and one's limitations[1]. A study done in Australia to evaluate the perception of the public regarding attributes of a good doctor has ranked caring, responsibility, empathy, interest and concern at a higher level than competence, knowledge, and confidence. Sensitivity, perceptiveness, diligence, availability and manual skills were also recognized as important attributes[1].

A questionnaire survey done on "patients' expectations during doctor patient communication and doctors' perception about patients' expectations" has revealed interesting information. The questionnaire survey which involved 700 patients and 91 doctors revealed that the majority of our patients expect social niceties in communication like greeting, offering a seat but not so much in evaluating their perspectives and engaging in a non-committal chat with the doctor. However they wanted doctors to decide the treatment strategies but the majority wanted to be a part in decision-making. The majority of our doctors believe that patients expect directions rather than information regarding illness and such attitudes are not conducive for patient empowerment in society [2].

Evaluating patients perceptions about communication need validated tools; Medical Interview Satisfaction Scale (MISS), Consultation Specific Questionnaire (CSQ), Patient Perception of Patient Centeredness (PPPC) and Patient Empowerment (PE) are some of the internationally well-known questionnaires. Steps for developing a questionnaire to measure patient's perceptions about health care providers' communication was undertaken by involving 81 health care workers who wrote 185 items leading to the development of 85 items by removing repetitions etc. This study demonstrated that health care workers in our sample did not consider patient empowerment as a part of communication outcome. And there are 17 new items not found in international literature. This work has given us some useful information to develop a questionnaire acceptable to our culture [3].

Understanding public opinion is a necessity in population interventions. A public opinion survey involving 240 people in Badulla, Sri Lanka regarding thalassemia prevention revealed that a majority were of the view that carrier screening should be made compulsory, at risk marriages should be counseled and abortions be legalized and the safe marriage concept should be implemented [4]. However in another study in

North Western Province involving evaluation of opinion among 425 couples (850 respondents) only 17% had under gone carrier screening, while 70% were aware of the disease. Eighteen per cent were unaware of the disease and 50% said that they like to learn about thalassemia[5]. This study demonstrates that giving knowledge alone may not be enough for a change in behaviour of the public. A Study involving first year and final year medical students has illustrated that even with the level of final year medical students knowledge they do not adopt the concept of safe marriage further highlighting that imparting knowledge alone is not sufficient. Among medical students with affairs, over 80% did not know their thalassaemia status. However 87.4% of them recommend compulsory screening, and 73.7% recommended ending an affair with at-risk potential. Advice regarding at risk affairs was considered inhuman by 45.5% and 16.4% recommended avoiding bearing children by at risk couples[6].

Our social responsibility also extended to looking at cost of care. Out of pocket spending for febrile illnesses among patients admitted to two teaching hospitals was evaluated using mix method quantitative and qualitative data collection done by a trained interviewer. Results indicated that the poor income group seemed to spend 200% of their monthly income for febrile illnesses in spite of the economic strain while those who have money spent only 10% of their monthly income. The qualitative part of the study highlighted that this behaviour of the public could be partly attributed to their behaviour as a result of lack of a target population to a doctor and poor communication skills of doctors [7].

In Sri Lanka there is no target population for the delivery of healthcare per physician. Family physicians without a defined target population in Sri Lanka allow our patients to enjoy the freedom of accessing treatment in any part of the country but this freedom is not without drawbacks. Almost all of our doctors function as first contact doctors. Therefore doctor shopping by patients, overcrowding in major hospitals, strain on specialists' services, cost of investigations, escalation of out of pocket spending and lack of comprehensive care has become unavoidable[8].

A similar background prevails in many other countries in the region without a system of family medicine. The need to teach family medicine concepts even before establishing such systems in a country has been highlighted. The Faculty of Medicine, Peradeniya is an example of a Medical Faculty trying to teach family medicine without a Department of Family Medicine. However lack of a target population and referral system in a country mandates training everybody with all the skills of a family physician [9].

Having recognized the responsibilities of teaching, it is important to focus on what to teach. The task for the medical teacher is not simple, especially with rapid accumulation of new knowledge. In 1950 doubling time of knowledge was 50 years, in 1980 knowledge doubled in 7 years, in 2010 it took only 3.5 years and by 2020 the knowledge will double in just 73 days. Students in 2020 will experience trebling of knowledge in 7 years [10]. We will have to guide our students on how to learn what they want to learn in the way they want to learn rather than teachers deciding on what they should learn.

With all these challenges medical teachers' social responsibility prevails. Many medical schools express a commitment to social accountability. However there are significant shortcomings. Health needs of the people served should be the priority. Therefore teaching competencies has become mandatory[11]. Common taxonomy of competency domains recommends providing

patient care, commitment, patient-centeredness, knowledge for practice and practice-based learning as important components for an undergraduate curriculum. In this scenario, communication and interpretation skills as well as interpersonal and collaborative skills, are vital. Their capability to adapt to the system-based practice and their personal and professional development are essential competencies[12]. The Faculty of Medicine Peradeniya while following the above competency framework has incorporated competencies such as 'medico-legal expert' and 'administrator in the society' as additional competencies.

Can learning competencies alone change behaviour? We believe that inculcating attributes like patient-centeredness and empathy are valuable to achieve the very desirable changes in behaviour of our graduates. Patient-centeredness is the focus of medical practice in the 21st century. Starting from the Hippocratic era when the noble identity of the profession was highlighted, the vocation has gone through a transition due to advancements of science in the 19th century and commercialization in the 20th century. However patient-centeredness is the highlight of the 21st century.

The concept of patient centeredness has evolved. In the earliest era of medical practice doctors were generalists. Specialisation became a necessity with scientific advances and expansion of knowledge, thereby leading to an era of super-specialization where a biomedical model or a factor analytic model was used in patient care, thereby marginalising the holistic approach in patient care. The public has realized this and have demanded that they need doctors to look after them as whole persons. The public has started demanding patient centred holistic care with bio-psycho-social approaches by family physicians or any other first contact doctors.

Patient-centered care could be taught to doctors and medical students. Cognitive input, role modelling and experiential learning should be promoted. However assessment is not easy. Direct observation may be necessary but is not always practical. Some of the internationally recognized tools include, Patient Reaction Assessment (PRA), Perceived Involvement in Care Scale PICS - Lerman 1995, Component of Primary Care Instrument CPCI– Flocke US 1998, Patient Perception of Patient Centeredness (PPPC), Consultation Care Measure (CCM), and Patient Practitioner Orientation Scale PPOS (Krupat 2005). Patient Practitioner Orientation Scale (PPOS) developed by Edward Krupat from Harvard is a self-reporting 18 itemed tool with 6 point Likert scale; Strongly agree to Strongly disagree score 6-1 respectively but 3 items are reverse scored. Nine items each assess sharing and caring attitudes. Maximum score is 6 [13]. The PPOS has been translated to sinhala and validated [14]. The first sinhala translation by a panel of 4 members was followed by the synthesis of the final version with cultural adaptation. Face validity was assessed by obtaining expert opinion and the original author reviewed back translation done by a bilingual expert and the tool was field-tested involving 1465 students. Total PPOS scores of our students were 3.9 – 4.8, which is lower than what is reported from the Western world which is above 5.2 but slightly higher than other countries in the region (3.8) like India, Nepal and Pakistan [14].

Empathy is an essential attribute for doctors. Females are known to be more empathetic due to their biological make-up. Professional (neutral) empathy (1950 -1960) described by Blumgart expects a neutral empathetic physician with detached reasoning and to do

what needs to be done without feeling grief, regret or other difficult emotions [15,16]. However patients perceive the emotional neutrality of physicians negatively and they value emotionally attuned physicians. Patients perceive experiencing emotions by physicians in parallel with patients, as a valuable attribute of a doctor. Hojat defined empathy as a cognitive understanding mixed with feeling and communicating this understanding and feeling while demonstrating an intention to help[17]. Empathy could be better understood by comparison with sympathy. Empathy is an intellectual, advanced, non-spontaneous, effortful appraisal and understanding. Sympathy is a spontaneous, emotional, primitive and effortless arousal. Empathy demonstrates altruistic cognitive behaviour, while sympathy demonstrates egoistic and affective behaviour. Empathy creates separateness and professional satisfaction while sympathy creates attachments and causes vicarious trauma [18]. Empathy is built-in in the neuronal system in the body, but still amicable for modifications. Empathy is a learnt behaviour with neurones embedded in the neocortex that stimulates the parasympathetic system causing inhibition and energy saving and therefore burnout is less likely, while sympathy is a wildly stimulating component involving the sympathetic system relating to the limbic system and therefore burnout is more likely. (18) Hojat described 10 methods of teaching empathy that includes analysing audio or video taped encounters with patients, shadowing a patient (patient navigator), experiencing hospitalization (getting hospitalized with fabricated symptoms), engaging in small group discussion of difficult patients (Balint, 1957) and improving interpersonal skills, being exposed to role models, role-playing (ageing games), studying literature and the arts, improving narrative skills, and watching theatrical performances [18].

Senaka Bibile had inculcated attitudes of empathy since his childhood. He was born and brought up in an environment conducive for empathy. In his early infancy, he was breast-fed by several women from the village because his mother did not have sufficient milk. He visited the village temple regularly. He got opportunities to watch his father-investigating calamities of villagers. He was stunned to see a dead body of a man attacked by an elephant. Once in the preschool he had very willingly washed his little sister's uniform as she had soiled it. His mother had appreciated this act and had admired the greatness of her son with deep emotions and eyes filled with tears. His private practice after working hours in Bingiriya was a free service and he had frequently offered food and financial support to his patients. He fought hard with owners of coconut estates for a free lunch for poor coconut estate labourers but failed. He returned his scholarship money so that the next student could use it. And his work for the global community in his drug policy is entirely driven by his empathy which was practical empathy; understanding culminating in action.

The environment of the University of Peradeniya has the attributes to create these opportunities. Getting closer to nature could help us to achieve this daunting task of changing behaviour in a pleasant way. Nature can create peace of mind.

Measurement of empathy is vital for any form of educational intervention. Direct observations and self-reporting tools also could measure empathy. Professor Mohammedreza Hojat of Jefferson's Medical College has developed the Jefferson Scale of Empathy (JSE) and he has presented a valuable account on empathy in his illustrious book on empathy. Jefferson Scale of Empathy (JSE) assesses empathy in

health care professionals, health care students and medical students. JSE score among our medical students was 114 at the onset and deteriorated to 109 during the second year and by the time they reached the final year showed some improvement but did not reach the original values of the first year. Females have higher scores which remained higher through the course, but the drop in the score during the second year was more significant than that in boys [19]. There are reports in the literature to support that erosion of positive attitudes between entry and graduation, especially during the third year, can happen due to the curriculum. Hojat is of opinion that the devil that erodes empathy is in the third year of medical studies [20,21].

Teaching is an art that demands knowledge skills and devoted effort. The Hippocratic Oath states " I will impart a knowledge of the art to my own sons, and those of my teachers, and to students bound by this contract and having sworn this oath to the law of medicine, but to no others" The statement by Hippocrates (480 – 370 BC) "Observe all and study the patient rather than the disease' highlights the value of clinical teaching. Sylvius (1614-1672) also highlighted the value of clinical teaching when he said "My method is to lead my students by hand to the practice of medicine; hear from patients and see physical signs"

Scholarship is an essential competency for a doctor. Scholarship includes generation and dissemination of knowledge. Professor Bibile was a great researcher. His first research was on diet and malnutrition. It was truly a national survey and highlighted the realities and the depth of the problem. He challenged the myth about Vitamin C on common cold by a cohort study using medical students. He did a case control trial and disproved the myth about benefits of injecting Penta-thion for body pain. If not for his study many poor people would be getting painful injections for musculoskeletal pain even now. His work on drug policy was the best outcome of his research. The focus of Prof Bibile's teaching and research was on social needs rather than personal benefits. He promoted collaboration rather than competition.

Prof Bibile was an educationist. Some of our faculty members who were students of Prof Bibile still remember how the bush coat attired expert lectured without notes. Prof Tissa Vitarana who was a former minister of science and technology says that "he was my friend, role model, leader and mentor". He was learner centered, reflected on his practice, designed and evaluated education programs and introduced collaborative learning. Prof Varagunum, former professor of Medicine has written how they enjoyed evening sessions reading George Millers book on medical education in Senaka's house. Prof Herbert Aponso emirates professor of Paediatrics says "each one of us had to read a chapter from Millers book" indicating how Senaka had imparted concepts of collaborative learning and medical education in this country.

Current trends in medical education that promotes Competency Based Medical Education (CBME) focuses on outcomes and learner achievement using multifaceted assessment while expecting accountability to stakeholders [22]. However there are concerns and challenges of CBME. Increased administrative requirements, lack of good assessments (competencies) and the need for faculty development are some of them. It is interesting to note that teacher's competency has been a topic as early as 500 BC. Charaka the great healer in India (500 BC) has recommended medical students to select a good teacher whose precepts are sound, practical skill is widely approved, who is clever, dextrous, upright, and blameless; one who knows also how to use his hands, has the requisite instruments and all his senses

about him, is confident with simple cases and sure of his treatment in those which are difficult; of genuine learning, unaffected, not morose or passionate, and who is likewise to patientand kind to his pupils [23].

Malathi Sirinivasan and others proposed a comprehensive list of competencies for clinical teachers, that includes medical knowledge, learner-centeredness, interpersonal and communication skills, professionalism, role modelling, practice-based reflection and system based practice and learning However, competencies expected from an academic clinical teacher extend to competencies in programme designing, implementation, programme evaluation, scholarship, leadership and mentorship [24].

Teaching should be evidence based. All methods of teaching are not equally effective. The retention rate for an average student is very poor with lectures or reading whereas students undertaking to teach others have a very high impact. William Osler the father of clinical teaching stated "To study the phenomena of disease without books is to sail an unchartered sea, while to study books without patients is not to go to sea at all". Similarly if someone tries to learn driving in the middle of a playground without sign posting and guidance or teacher's feedback, it is a futile exercise. Practicing clinical skills in the middle of a hospital ward without a checklist and guidelines and teacher's feedback is a similarly futile exercise. That is where Mini Clinical Examination (mini-CEX) exercises become important. Implementation of the mini-CEX to evaluate medical students' clinical skills involves observing and assessing students on interviewing, physical examination, professionalism, clinical judgment, counselling, organization and overall clinical competence. An immediate feedback is given, and the whole process will take 20 minutes per student. Ten MiniCEX tools were developed and students were encouraged to practice clinical skills using them. MiniCEX exercise creates opportunities for students to teach their colleagues.This is important as teaching is recognized as the best way of learning [25].

The good physician treats the disease; the great physician treats the patient who has the disease" -William Osler. Treating patients needs skilful communication. Teaching communication skills should start early in the undergraduate curriculum and be integrated with other subjects. Experiential learning with feedback from actual patients or simulated patients should be promoted. The assessment should be based on Objectively Structured Clinical Examinations (OSCE). It is important to have uniformity in teaching which necessitates following a model. Attention to content, process and perceptions of communication is important [26].

Communication curricula in a faculty should start from the beginning of the course. Faculty of Medicine, Peradeniya conducts an interactive lecture on 'patients life and medical profession' to promote students to reflect on their future life as doctors in the first year. Providing opportunities for students to talk to patients and to write a narrative based on that experience is a valuable beginning to becoming a good communicator. Students reciting the story of their patients in small groups and sharing feelings with no interruptions from teachers mimicking the Balint approach will contribute to build empathy. The curriculum at Peradeniya has now included formal teaching of communication skills. Ideally during the basic science programme students should experience giving information while practicing self-introduction, and evaluation of perspectives and giving information in manageable chunks and checking for understanding. During the second year the communication, learning and research

(CLR) module expands the horizons of communication skills and introduces the Calgary Cambridge model, skills of communication and interpersonal skills in other settings as well as skills in teaching and health education.

Teaching communication skills continues with the introduction to clinical practice in the 3rd year. Agreeing on a common model of communication will minimise confusion for students. Lectures by all the departments and guided clinical experience with patients and assessment by OSCE using simulated patients under different disciplines would further strengthen communication skills. During the 3 years of clinical practice students should be promoted to gain experiential learning which could be enhanced by peer feedback and patient feedback. Reflective learning could be facilitated by promoting the development of a portfolio. Short exposure to family medicine creates opportunities to communicate in a first contact setting; video recording of their own communication skills and discussions in small groups will also provide valuable experiential learning.

Portfolio has many benefits such as improvements in knowledge and understanding, increased self-awareness, student's engagement in reflection and improved student-tutor relationships. However the quality of the reflections written by students and the required time commitment are major concerns. [27]. However, keeping minimal essentials to reflect mandatory learning activities like Mini-CEX and communication feedback and writing reflections could be introduced as the first step in our setting. Collaborative learning and experience in giving feedback to a colleague is expected to facilitate learning. A senior teacher should assess the portfolio at the final viva.

William Osler stated medicine is a science of uncertainty and an art of probability. The outcome of an innovative multi-disciplinary teaching session conducted with a group of doctors, nurses and other health care professionals was encouraging. The workshop was conducted as a common forum to facilitate interaction with each other. In spite of well-known conflicts among these categories of professionals, feedback observations were encouraging; "Very successful workshop" "Maximum enthusiasm and group participation" "Interesting to see that people can work together. Hope it will last forever" "best interactions" "Should do similar workshops for everybody" [28].

Assessment being the tail that wags the dog is an important feature that needs to be recognized in education. GE Miller stated "to change curricula or instructional methods without changing examination will achieve nothing". For assessment the right instrument should be selected. The right instrument for assessment should be valid; measure what it really intends to measure, reliable - gives the same measurement of the same performance on different occasions, objective; different markers or examiners should score similarly and practical; However consensus statement and recommendations from the Ottawa 2010 conference considered educational effects and catalytic effect meaning that assessment should be educational and promote further learning as additional advantages of assessment [29].

The Millers pyramid of clinical competencies included different levels of assessment "knows", "knows how", "shows" and "does" in all 3 domains of learning; knowledge, skills and attitudes. Higher levels of assessments are more favourable for professional development. Comparison of extended matching items, true/false and single best answer questions have demonstrated that the discriminating value of a question deteriorates as they are

either too easy or too difficult with the exception of SBA questions. Medical students of the Faculty of Medicine Peradeniya seemed to have found SBA questions more difficult than true/false type questions[30]. Coordinating an OSCE examination at the end of the introductory clinical appointment was a challenge and yet for all, a valuable experience. Two hundred and ten students were expected to be assessed within 6 hours. Innovative methods were adopted to overcome the difficulty. This was achieved by involving 100 students and 32 simulated patients. We had 8 clinical skills stations, 8 procedural skills stations, 2 communication skill stations and a picture station with 50 pictures. The educational impact of OSCE was evaluated by medical student's self- perceptions and practice of communication skills several months after the given OSCE. Some students were noted to be highly confident in building rapport, asking opening questions and evaluating patient's perspectives, but the confidence was average in developing an agenda, internal summarisation, giving information and collaborative planning. Almost 60% of the students either rarely or never practised the above skills indicating that they had not internalized the practice. However 75% of students were found to be using OSCE checklist to practice clinical skills [31].

The reasons for medical students not practicing communication skills by was evaluated by a survey. Student confidence and the knowledge was a problem in 50% of the students. However 63% said lack of encouragement was the reason. Non-practice of those skills by teachers, senior doctors, interns and colleagues and not having opportunities to observe skills were the reasons for 50% of students. Students claimed that they do not get opportunities to observe practice of asking opening question, open to close cone of questioning, developing an agenda for consultation, evaluation of patients perspectives, using chunk and check method in giving information, involving patients in planning care and giving due respect to patients. This highlights the impact of the education environment on student behaviour [32].

Evaluation of the education program is a vital component in any curriculum. The Kirkpatrick model of evaluation of education programmes recognizes the bottom line of evaluation as learner satisfaction which is simple but provides valuable feedback. The next level of evaluation it is to check whether the learner has learnt the content. Whether the learning has changed the learners practice and whether there are results in terms of patient's outcomes are the final stages of outcomes. Finally and ideally whether investment in training is cost effective would be a rational question. Evaluation of student's perceptions was done by a questionnaire survey involving an entire batch of students. Majority of the students commented that OSCE was fair (87.5%), comprehensive (78%), motivating to learn (88%) and helped to identify weaknesses (72%). However it was found to be stressful for 38% of the students participating in the feedback exercise. This was lower than the 78% reported in a similar Jamaican study [33]. Difficulty index for the OSCE questions was between 53 and 83 and discrimination index was between 12 and 38, both within an acceptable range [33].

Moving up on the Kirkpatrick pyramid of evaluation of the impact of a curriculum on student's attitudes was identified to be important. Comparison of patient centered attitudes among 1st, 3rd and 5th year medical students was done using the validated Sinhala version of the PPOS mentioned earlier. The study revealed that both male and female students were improving their sharing attitudes and caring attitudes over the years, but progress among

females was not so marked in the final year [34]. This observation was encouraging, as many international surveys have demonstrated deteriorating attitudes, however the issue with regards to female students' poor progress compared to males needs careful attention.

Impact of training courses on participant's patient centered attitudes was evaluated using the Sinhala version of the PPOS in a parallel teaching programme in advanced paediatric life support (APLS), neonatal life support (NLS) and communication [35]. Deterioration of sharing attitudes was seen in APLS and NLS courses, compared to communication teaching. Learners of the NLS course had more deterioration than improvements [35]. Caring attitudes also has deteriorated in APLS and NLS courses than communication teaching programmes [35].

Impact of hidden curriculum on student's attitudes has been demonstrated in many studies. Therefore evaluation of the education environment was needed. Dundee ready education environment measure (DREEM) developed by Roff in 1997 measures the education environment [36].

DREEM measures student perception on 5 aspects; perception of learning, perception of teachers, academic self-perception, perception of atmosphere, and social self-perception. Total score for the Faculty of Medicine Peradeniya was 63%, which is higher than that reported in some other countries like Saudi Arabia and Greece, but much lower than what is recorded from Dundee, Australia, UK and Nepal where scores above 69% are recorded [37]. Faculty of Medicine Peradeniya had a better total DREEM score and scores in all 5 dimensions compared to what had been reported by other medical faculties in our country. Compared with the previous study done by Marambe et al in 2008 the Faculty of Medicine seems to have improved its educational environment. Further analysis of the subscale 4 'students' perception of teachers" revealed valuable feedback to the teachers. Items related to teachers being strict, ridiculing students, getting angry and students irritating teachers scored low indicating deficiencies in teacher's attitudes. However they thought that teachers were well prepared and knowledgeable [37].

Teacher's feedback has major impact on student teacher relationships. Evaluation of students' perceptions of teacher's feedback was a useful exercise. Nearly fifty per cent of students stated that teachers appreciated good things about their performance only sometimes or rarely. [37] Similarly 50% of students stated that they were confused about what is expected from them, at least some of the time. Nearly 50% students stated that they felt humiliated or ashamed at some time or other quite often.

Evaluating the education environment with regard to patient- centeredness and communication become relevant and important in the context of current practice of medicine. Institutional professionalism culture of patient-centeredness in Medical faculties Ragama and Peradeniya was compared using the Culture, Curriculum and communication (C3) instrument developed by Edwrad Krupat that helped to characterize and understand the institutional hidden curriculum on patient-centeredness [38]. Faculty of Medicine Peradeniya scored higher indicating better performance in all three aspects; role modelling, student experience and support for students. But only the difference in role modelling was statistically significant [39]. Evaluation of graduate's competencies and attitudes at the beginning of internship and at the end of each appointment will give us valuable comparison regarding the performance of medical faculties and training during the internship [40].

Teaching learning should extend beyond imparting knowledge and skills for recalling

and performing under observation to a level of change in behaviour. Student centered teaching, patient centered clinical practices and role modelling will create an educational environment that is conducive for such development in teaching learning programs in medical education. Professor Senaka Bibile has not only advocated such teaching but also set an example through his life.

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