

ABSTRACT SUBMITTED FOR IMU-RHIME AWARD

Making Medicine Humane Through Literary Appreciation

Sheba Sumalani DMani

International Medical University

Making Medicine Humane Through Literary Appreciation

The Medical Humanities curriculum as suggested by Gordon and Evans (2007) includes Philosophy, History of Medicine and Literature as its core in initiating disciplinary openness, humility in enquiry and respect for subjectivity. The pioneer *Literary Appreciation: Making Medicine Humane* module was offered to second year undergraduate medical students in December 2007. The general aim of this educational initiative was to enhance students' understanding of medical practice through the arts. The selective was designed and run by an academic staff with expertise in literature. Collaboration was fostered with academicians from the medical sciences and a guest senior literature lecturer. As its premise, seven texts of various genres, containing themes encompassing values and beliefs attached to death, suffering and disabilities were discussed. A vital delivery approach using interactive sessions was planned to provide highly conducive platforms for students to think independently and present on or respond to various issues. A webpage was designed on the in house e-learning portal and students posted reflections and creative pieces on the forums. Learning outcomes were directed towards achieving critical, creative thinking and emotional intelligences. In order to do so, student autonomy was exercised within structured assessments. A pre and post evaluation of the module was conducted. Students offered feedback anonymously through written responses to open ended questions. The pre evaluation elicited reasons for selecting the module, the expectations and concerns. The post evaluation drew the perceptions of students in the education value of the module, the fulfillment of expectations and its strengths and weaknesses. The first step towards constructing grounded theory was employed by coding responses for emerging themes. The results indicate that among the key motives for choosing this selective is to specifically explore the humane side of medicine and to receive a wholesome education. The post evaluation revealed students' perception of benefits gained in increased self awareness, enhanced doctor-patient relationship and a better understanding of the values and beliefs of people from different backgrounds. Majority (89%) of the responses stated that the selective far surpassed expectations and had a significant impact. This paper will provide a detailed description of the course and the procedures emplaced in its delivery. It will also discuss and illustrate some of the outcomes based on student performance in tasks and coursework. Finally the paper will discuss data gathered about learner attitude and perceptions towards the course.

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Injecting Fun Into Lectures Through Cartoons, Everyday Examples & Stories

Hla Yee Yee

International Medical University, Kuala Lumpur, Malaysia

Background

Large group teaching is here to stay, but didactic lectures are viewed as boring, with knowledge 'shoved down the throats' of the learners. Many teachers find students skipping lectures, and even medical educationists tend to view didactic lectures as a poor mode of curriculum delivery. However, they can be turned into an enriching experience by injecting fun.

Description of the Innovation

Lectures are delivered by using everyday examples and cartoons. Two people pushing a load together or against each other is an everyday example of synergistic and antagonistic action of hormones. This strategy makes lengthy explanations unnecessary. Using a cartoon of an elephant on a weighing scale, with a surprised mouse reading the scale to illustrate the concept "Elephants are generally heavier than mice" always evokes laughter from the audience.

Difficult mechanisms like muscle contraction can be told as a story. The contractile protein 'actin' is double-stranded, and looks like a pearl necklace; 'myosin' is thicker, with heads resembling golf clubs. Interaction is prevented by the protein 'tropomyosin' which is interwoven amongst the two strands of actin. When the impulse from the nerve reaches the muscle, calcium molecules are released; they bind to the protein 'troponin' to change its configuration. Troponin binds with tropomyosin, so that actin & myosin can now bind, using energy liberated by breaking down of ATP by ATPase from the myosin heads. This is presented as: "Once upon a time, in a land called 'Myonesia' lived a beautiful girl called 'Actin' who was in love with a handsome man called 'Myosin' (M for Man), but they were prevented from meeting by her mother Mrs. Tropomyosin. One day, Myosin's friend Mr. Action Potential arrived from overseas; he persuaded their friends Mr. Calcium 1,2,3,4 to accompany him to talk to Mr. Troponin, a close friend of Mrs. Tropomyosin. He was not convinced at first, but changed his mind (configuration changed), and took Mrs. Tropomyosin out for lunch. Actin and Myosin can now meet But Myosin had no money, so went to the ATM (ATPase) to get money (energy) for their date (contraction).

Evaluation

Obviously, no hard evidence can be obtained on each lecture, but the success of this mode of teaching is reflected in the Lecturer Evaluation by students (scores maintained at 8-9 out of 10). This usage of cartoons is considered my 'signature' by students.

The Myonesia story is famous amongst students (and mentioned in Convocation Magazines as 'classic'). Colleagues also reported that students could never explain the mechanism very well, but could now do so.

ABSTRACT SUBMITTED FOR IMU-RHIME AWARD

Paracurricular Task-Based, Community-Oriented, Student-Active Learning Paradigm: The Creation Of Special Interest Groups That Cut Across Pedagogic Divides

Nyunt Wai

Department of Human Biology, Faculty of Medical Sciences, International Medical University, Kuala Lumpur

Introduction/Background

The idea to form with student volunteers the three special interest groups – obesity, diabetes mellitus and hypertension – was conceived when the need to mobilize medical students as early combatants of these public health scourges was realized. The plan, as it was being executed, evolved into a paracurricular task-based, community-orientated, staff-guided, student-active learning paradigm that cut across pedagogic divides.

Description of innovation

Imagine a scenario in which second year medical students volunteer (even without the lure of credit points) to take part in the assault against the killer/crippler trio, forming three regiments- the obesity, diabetes mellitus and hypertension groups, allocating 50% of one-hour lunch breaks for group meetings- in which, under staff guidance, the pathophysiology, epidemiology and preventive aspects of these lifestyle-related diseases are discussed, strategies for case detection and health education planned, psychomotor skills for measurement of blood pressure, blood glucose and anthropometric parameters mastered, pro forma for data collection developed, and statistics for data analysis learned. When summer holidays come, they go home, armed with sphygmomanometers, glucometers, weighing scales and other paraphernalia. After returning with the hard data of their respective communities (family, friends, and neighbours), the data are analysed, reports written and submitted.

Results of Evaluation

Although 146 students registered for the group activity, only 45 remained when it came to data collection stage. This could be due to the fact that the activity was voluntary and extracurricular, though the reasons for dropping out were not explored. Those who participated (n=45) significantly outperformed ($p < 0.05$, Student's t test) those in the control group (n= 52) in the final examination. Eighty percent of respondents perceived the programme to be beneficial; 65% expressed the desire to continue participating in similar programmes in subsequent years; 70% joined the programme to learn more about lifestyle diseases, 60% to participate in group activities, and 50% to learn to do research.

Conclusions / Prospects

This innovative learning paradigm has made certain impact in a setting where (i) traditional curriculum prevails; (ii) no student bodies, groups or hostel facilities exist; (iii) the campus is out of bounds to students after school hours. In much more open and educationally-inducive environments, why shouldn't it make far greater impact in terms of personal and professional development, self-directed learning, disease prevention and health promotion, and community service?

ABSTRACT SUBMITTED FOR IMU-RHIME AWARD

Meet DietPLUS – A “2 In 1” Food Composition Database And Calculator Of Nutrient Intakes For Use By The Layman, The Student, The Teacher And The Healthcare Professional

Tony Ng Kock Wai

International Medical University, Kuala Lumpur, Malaysia

Introduction

The last published edition of the Malaysian Food Composition Database Programme (MFCDP) led by the Institute for Medical Research (IMR) was in 1997. Despite its usefulness and wide usage in the country, the publication had no information on dietary fibre, added sugar, omega-3 fatty acids, and trans fatty acids. Due to a change in research priorities and compulsory retirement of key members in the MFCDP, it is unlikely that there will be another update of the MFCDP. This is most unfortunate, for an updated food composition of Malaysian foods is very important not only for students and teachers of higher education, but also for nutrition and dietetics professionals and the health-conscious layman public.

The IMR also developed a Windows-based nutrient calculator software called “Nutrical” in year 2000 which was based almost entirely on the 1997 food composition database of the MFCDP and not surprisingly, lacked the nutrients mentioned above. Therefore, there is a great need for developmental work on nutrient calculators which provide information on nutrients of current interest which impact on our health.

Now comes a a “2 in 1” computer programme called “DietPLUS” which serves as a food composition database as well as a nutrient calculator. It is low-cost, user-friendly, and solves to a large extent the lack of information on key nutrients mentioned earlier.

Description of the Innovation

Given the name “DietPLUS”, this innovative computer programme is based on excel format and at present stage of its development, contains over 400 local food items, both in the raw and cooked form. Foods are divided into various categories in the following order: a) cereals and cereal products, b) starch roots & tubers, c) legumes and products, d) nuts & seeds, e) vegetables, f) fruits, g) meat, meat products & eggs, h) fish, seafood & products, i) fats & oils, j) milk & milk products, k) cakes, “kuih-muih” & snacks, l) beverages, drinks, juices, sugars & syrups, m) food supplements, and n) foods not listed.

Guides on serving size or household measure are given immediately to the right of each food item so that the user can mentally convert the amounts of food(s) eaten into gram (g) quantities. All the user has to do is to enter the amounts (g) eaten in one column, next to the respective foods concerned. DietPLUS does the rest and in a fraction of a second, the nutrient values corresponding to the amount of a particular food eaten appear in the same row on the right face. DietPLUS automatically adds up the nutrients calculated as you continue to enter gram quantities of other foods

consumed. For speed search, left click “edit” in the tool bar and select “find”. Type in what you wish to find and click “Find Next” and DietPLUS goes to work. When you wish to continue with another subject, just click the reset box and the gram quantities of food entered will automatically “zerorise”. It is that simple!

Breaking away from tradition, DietPLUS even have a small section each on alcoholic beverages and popular food supplements. The software programme is highly updated for it has added “nutrients” such as dietary fibre, omega-6 (linoleic acid) and omega-3 fatty acids (α -linolenic + eicosapentaenoic acid + docosahexaenoic acid), added sugar (sucrose) and even total trans fatty acids. Intakes of the macronutrients protein, fat and carbohydrate are expressed in grams (g) as well as a percentage of total energy intake (% kcal). Reference Nutrient Intakes (RNIs) for Malaysia are given close to the results for purposes of comparison.

Putting DietPLUS to the Test: DietPLUS was used to assess the 24-hour food intake of 50 healthcare personnel/professionals who participated in a recent Short Course in Diet Therapy held in August 2007. DietPLUS passed with flying colours and the results were presented to the participants during the course. The innovative programme has great flexibility- it can function both as a food composition database as well as a calculator of nutrient intakes and lend itself to “modular” updates. What this means is that DietPLUS can be updated in the future to accommodate new nutrients such as iodine, folate or zinc when information on these are more complete. Conversely, If information on a nutrient is considered obsolete or unimportant (eg. potassium or phosphorus), just remove these nutrients from the programme. When plans to market DietPLUS are realized, it would be probably be far useful than any other locally-developed nutrient calculator in the market.

Evaluation of DietPLUS

A formal evaluation of DietPLUS on user-friendliness, usefulness, and completeness of nutrient data information shall be conducted on university students and other stakeholders using a structured questionnaire in the first quarter of 2008.

ABSTRACT SUBMITTED FOR IMU-RHIME AWARD

Training Simulated Patients: An Innovative Approach Using Self-Assessment And Peer Feedback towards improving Performance

Jennifer Perera, Juriah Abdullah, Joachim Perera, Nagarajah Lee

International Medical University, Kuala Lumpur, Malaysia

Introduction: More than 80% of medical schools use simulated patients (SPs) for teaching and /or assessments¹. The SPs offer students the opportunity to practice communication and clinical skills and provide feedback to students on their performance. In the educational context, the authenticity of role play of SPs and quality of feedback are

of paramount importance². Further, It has been proposed, that self-assessment and peer feedback play an important role in enhancing learning^{3,4} and therefore was used in SP training and evaluated.

Description of the innovation: In our institute SPs are used in undergraduate teaching where role play and provision of feedback to medical students are main areas where training is provided. Currently, SPs undergo tutor-centred training as a group on above areas and case scenarios are used during training. The innovation introduced consisted of

- a) individually viewing self performance using their videotapes and assessing the authenticity of the role played and the quality of feedback provided to students using a structured questionnaire
- b) viewing the performance as a group with feedback being provided by fellow SPs which included an input by the tutor at the end.

The innovation was conducted on 9 volunteer SPs who regularly participated in teaching

Results of evaluation: The videotapes of SPs before and after training were blindly assessed by students and tutors using a validated instrument designed by the Maastricht University (MaSP)⁵. In addition views of SPs on the training were sought using a structured questionnaire and a focus group discussion (FGD). There was a statistically significant improvement in attributes related to role play ($p < 0.01$) and quality of feedback ($p < 0.001$) following the training. The SPs responses to the questionnaire on the use of self assessment and peer feedback for training were very positive and highly rated. The FGD corroborated these findings. It also transpired that additional learning occurred by simply observing the performance of peers. What was most encouraging was the request by SPs to include self and peer assessment as a regular feature in their training after each system module.

Conclusions: Use of ongoing self-reflective and peer interactive method of SP training in addition to tutor based training, is recommended for future.

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ABSTRACT SUBMITTED FOR IMU-RHIME AWARD

Evaluation Of An Innovative Approach To Teaching And Learning Communication Skills: Use Of Objectively Structured Self-Assessment And Peer-Feedback (OSSP)

Jennifer Perera, Galy Mohamadou, Satpal Kaur

International Medical University, Kuala Lumpur, Malaysia

Introduction: Provision of feedback is required for guiding students towards expected performance goals in education.¹ The usefulness of teacher feedback on improving communication skills (CS) has been well documented². It has been proposed, that self-assessment and peer feedback has an equally important role to play in enhancing learning^{3,4} and may enable students to acquire generic skills on self-assessment and self-regulation of their learning and behaviour. Further, peer-feedback will provide students a proactive rather than a reactive role in generating and using feedback and encourage peer dialogue around learning in contrast to teacher centered feedback⁵. Based on these data it was decided to introduce *objectively structured self-assessment and peer feedback (OSSP)* into CS teaching/learning (CSTL) sessions

Description of the innovation: The innovation was introduced to semester one medical students who learn CS (history taking) for the first time in the undergraduate course to minimise influence of previous TL interventions. Structured self-assessment and peer-feedback with the aid of a questionnaire consisting of close and open ended questions, designed for the purpose was introduced to randomly divided one half of the cohort(experimental group) to enable parallel evaluation of the innovation. Facilitators and SPs in both groups provided feedback during CSTL as per routine practice. Subsequent CS learning sessions were done in the absence of facilitators and students in the experimental group were advised to follow the same procedure.

Results of evaluation: The CS were assessed 3 weeks after the CSTL and assessors were blinded. Mean total score and scores for certain specific skills were significantly higher in the experimental group as shown below.

Table: Comparison of mean scores obtained for different attributes between experimental (group 1)and control (group 2) groups

Specific Skill	Mean ±SD		p-value (95%CI range)
	Group 1 (n=96)	Group 2 (n=93)	
Building rapport (4)	3.82 (.41)	3.46 (.65)	0.0001* (.201-.521)
Listening (4)	3.71 (.53)	3.43 (.80)	0.006* (.081-.480)
Language (4)	3.94 (.28)	3.89 (.35)	0.285 (-.042-.142)
Interview style (1)	0.90 (.30)	0.62 (.51)	0.0001* (.153-.398)
Interview structure (1)	0.93 (.25)	0.86 (.38)	0.132 (-.022-.168)
Mean total score (14)	13.29 (1.03)	12.33 (1.47)	0.0001* (.593 - 1.323)

*Difference is statistically significant by two tailed student t test

Evaluation of the innovation using a questionnaire showed that students gained fresh insights into specific areas such as empathy (52%), addressing patients concerns (59%) and interview style (61.4%) which clearly corroborated the specific differences in assessment scores. The free text comments by students were highly encouraging with regard to acceptability of OSSP, in spite of 67% being never exposed to formal self and peer-assessment during pre-university studies.

Conclusions: Inclusion of OSSP is important for effective CSTL and should be incorporated into CSTL programmes in the institute, and possibly elsewhere.

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ABSTRACT SUBMITTED FOR IMU-RHIME AWARD

Behavioural Sciences Teaching And Learning As A Continuous Stream In The Undergraduate Medical Curriculum : An Evaluation Of An Innovative Programme

P Galappatthy, Amarasuriya S, Perera J, Jayasinghe S, Jayakody L

Faculty of Medicine, University of Colombo, Sri Lanka

Introduction

The Faculty of Medicine changed its discipline-based curriculum to a more integrated and modular system in 1995. A unique feature of the new curriculum was introduction of a Behavioural Sciences Stream (BSS), to address the societal concerns on communication skills and behaviour of doctors, requirements of local regulatory bodies and also in keeping with international trends.

Description of innovation

The BSS teaching and learning (T/L) was introduced throughout the five years of the course. The curriculum contents were based on the institutional objectives and identified by using interactions of a doctor with, self, patient, patient's family, health care team and community. The content was sequenced as 6 modules: personal development, basic behavioural sciences, communication skills, medical ethics, changing behaviour and health management. Teaching methods included large group lectures, small group discussions, role-plays, project presentations, seminars, student assignments and debates. Teaching, formative and summative in-course and end-course assessments were

conducted by the Stream in collaboration with clinical and pre-clinical disciplines

Results of evaluation

In 2002, a study using a rating scale 0-10, 196 final year medical undergraduates, rated BSS inputs as ranging between 6.1-7, for obtaining consent, maintaining confidentiality, terminal care, breaking bad news, giving information to patients/relatives, changing behaviour and team work while, scores were lower in managing crises(4.7) and resource allocation(5.5). Scores of students' confidence in handling 10 similar clinical problems was 6.7-8, except crises management (5.7).

In 2006 a study using a rating scale of 1-5, 91 practicing graduates rated the usefulness of BSS inputs, with mean scores of ≥ 3.0 for most areas but ≤ 3 for coping with work stress (2.9) scientific communication (2.9) and handling a crisis (2.8). The BSS was perceived as relevant (22.8%); useful (61.4%), important (9.6%) and a waste of time (5.9%). Using a scale of 0-5, the mean score of satisfaction about BSS curriculum was, for content areas covered (3.4), organization (3.2), teaching/learning methods (3.3), assessments (2.9) and adequacy of time spent (4).

Conclusions

Undergraduates and graduates perceive the BSS T/L to be useful in imparting several critical clinical and behavioural skills. The planned 360-degree evaluation of graduates is likely to provide more useful data on effectiveness and guidance for further improvement.

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ABSTRACT SUBMITTED FOR IMU-RHIME AWARD

A Concept For The Teaching Of Medical Ethics And Law For Medical Undergraduates In Malaysia

Harwant Singh

Clinical School, IMU

Background

The teaching of medical ethics and law as a branch of applied ethics for undergraduates has been a problem for which no good solution exists. The current methods of clinical teaching; apprenticeship, is very successful in the clinical situation; however remains conservative and is poor in encouraging critical ethical assessment by the student. There is no opportunity to criticise current practice.

While this may be because of the 'obedient culture' the students come from, and the fact they have been assailed by the paradox 'do not criticise your colleague'; the consequence is that there is no opportunity to formally reflect on ethical issues outside of the clinic.

Description

This paper describes a method that has been used for the past 18 months in Sem 8 to introduce a formal teaching of relevant Medical Ethics and Law with a lecture; followed by a PBL-like scenario in which total anonymity of the clinical materials allow the student to explore a myriad of possibilities in developing a desirable outcome which have carefully thought out ethical and legal solutions.

The principles that have been used in designing the scenarios are that they are; intellectually stimulating with current controversial ethical issues, allow awareness of the ethical and legal dimension, allow the opportunity to see how principles of Malaysian Medical Law relate to key areas of practice, and allow understanding of the specific guidelines issues by the Malaysian Medical Council. The case scenarios have been drawn largely from cases that have been deliberated at the Ethics Committee of the Malaysian Medical Association, and published already. Other case scenarios have been derived from the authors own clinical and legal experience.

Conclusion

Based on informal feedback from candidates, the author recommends that this method of teaching medical ethics and law be integrated in the clinical school curriculum.

ABSTRACT SUBMITTED FOR IMU-RHIME AWARD

How Integrated Are We In The Assessments In A Problem Based Undergraduate Medical Curriculum?

S Bhattacharya, S K Bhattacharya, B Khanal, M Lamsal, B Chapagain

B.P. Koirala Institute of Health Sciences, Dharan, 56700 Sunsari District, Nepal

The introduction/ background of why this innovation is necessary

The integrated assessment in integrated medical curriculum is an interdisciplinary process of structuring multidisciplinary knowledge elements simultaneously through complex medical problems relevant in mutual coherent benefit of decision making. This study is a critical appraisal regarding the practice of integrated teaching learning and assessments.

Description of the innovation

The 2nd year MBBS students, who have covered gastrointestinal-hepatobiliary and endocrine systems in basic medical sciences and the concerned faculty were included in the study for structured feedback questionnaire sessions. Confidentiality was assured. All participants were initially oriented to the concept, purpose and design of the study and written consent was obtained. Fourteen formative and summative assessment theory papers, (2000-2005) were also analyzed.

Focus was on the extent of interdisciplinary integration, comparison of recall, interpretation and problem solving questions, repetition, use of question bank, identification of appropriate marks, clarity of intention of tests, existence of students' self designed curriculum, accuracy of assessment tools, consistency of formative and summative assessments, extent of alignment of content, coverage, domain specificity, learning outcomes with the curricular objectives and scope of implementing integrated assessment. Statistical application of SPSS10.0 version, Standard deviation and percentage analysis were done for the data collected.

Results of evaluation (if already done)

The results of the feedback response and question paper analysis revealed significant difference (P<0.001) in the existence of various curricula, clarity of intention of tests and contribution of assessments towards developing problem solving approach. This study has also been successful in identifying absence of inter disciplinary integration in assessments in spite of the integrated teaching learning practices and building up strategies for implementing integrated assessment. All stakeholders have become aware of the gap in the accuracy of assessment tools and role of assessments as outcome based paradigm which guides the learners' progressive attainment of theoretical knowledge, skills, attitude, reflexive competencies, existence of students' self designed curriculum, need to bridge the gap in objective based assessment and teaching learning alignment thus encouraging a common understanding and implementation of integrated assessment in undergraduate problem based integrated medical curriculum .

ABSTRACT SUBMITTED FOR IMU-RHIME AWARD

Adopting An Innovative Method To Teach The Subject Of Biochemistry To Medical And Dental Students – Setting Up Of Biochemistry Teaching Laboratory (BioTeL)

Shakila Srikumar

AIMST University, FMHS, Semeling Campus, Bedong, 08100 Kedah

Introduction: Biochemistry as part of basic sciences acts like a receptor as the medical student enters through the gates and into the cell of a medical school and it is the duty of a medical teacher to ensure that this “signal transduction pathway” is functional in order to meet the standards of medical education.

It has been observed from the verbal feedbacks of the students joining professional courses of medicine and dentistry that crossing the path of the pathways in Biochemistry has become a herculean task and the future doctors' worse nightmare. Hence they put in a lot of effort to memorize the cycles and pathways using rote method to pass and enter their much awaited clinical years, and in the process their self esteem is jeopardized.

In this era of information technology, there is no dearth of information on the net with 3D-models and animations of various biochemical mechanisms and this visual stimulation

stops the moment the image disappears and there is a need to “DO” but not to just “SEE” and remember.

The students in their formative stage of professional education need to adopt an easy and accessible approach to assimilate the subject in order to alleviate their anxiety and simultaneously make the learning process simple and enjoyable.

Aim: To adopt a traditional method in a novel way to learn the subject of biochemistry by using flexible models

This project is designed to help the students in their preclinical period to understand the subject of biochemistry by using flexible models so that they can manipulate the model molecules accordingly which in turn can enhance their molecular cognitive and motor skills.

This can take the form of small group learning / problem based learning/special study module in the premises of a biochemistry teaching laboratory. A full fledged BioTeL can also provide the ground for conducting workshops in T/L methods in biochemistry as a part of CME for invited students from other medical and dental universities

Methods

1. Designing flexible models using small plastic or vinyl colored balls and sticks to build molecules to make the student understand remember and reproduce the pathways involved in basic metabolisms.
2. Flexible colored wires and colored balls can be used to understand the organization of Protein structure.
3. Building the model of a gene library or a gene map and identifying genetic disorders in the form of a gene puzzle.

More models will be incorporated as the work progresses

Evaluation of the project:

All the students from Yr 1 of MBBS program and yr1 of BDS program will be included in the study as two groups (M for MBBS and B for BDS). Each group will be further subdivided into three groups-‘A’, ‘B’ and ‘C’ and the study is explained in the table given below:

Student Group	Phase 1 CM		Phase 2 LM		Phase 3A CM		Phase 3B LM	
	Trad	BioTel	Trad	BioTel	Trad	BioTel	Trad	BioTel
A	No	Yes	Yes	No	Yes	No	No	Yes
B	Yes	No	No	Yes	No	Yes	Yes	No
C	Yes	No	Yes	No	No	Yes	No	Yes

[CM = Carbohydrate metabolism ; LM = Lipid metabolism ; Trad = Traditional teaching and BioTel = Biochemistry Teaching laboratory]

An evaluation is done for all the groups after each phase by a written test (MCQs) and at the end of phase 3, all the groups are exposed to both traditional and the novel method of teaching and evaluation done by a written test (MCQs). The results are compared between group A and group B who have been exposed VS group C who have not been exposed in phase 1 and phase 2.

The significance of this method is evaluated using relevant statistical methods

Conclusion: An innovative experimental method to make the learning experience easier and provide a solid foundation for the future doctors' diagnostic, prognostic and management skills.