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An insight of medical students on the use of lectures in the curriculum: A pilot study

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ABSTRACT

Introduction:
Many hours of a student's life are spent in a lecture hall, "the supposed place of education, growth, and understanding." Likewise, countless hours are spent by faculty and staff in preparation for these lectures. The objective of the study was to discover the perceptions of medical students on current trends in lecture delivery. The study also arises from the fact that there is a dearth of data in Mauritius.

Methods:
A cross-sectional observational analytic pilot study was conducted via the method of a semi-structured closed-ended questionnaire. A 5-point Likert scale (strongly disagree, disagree, neither agree nor disagree, agree, strongly agree) was used to record the responses. Two male and two female students were chosen via a convenience sampling technique from all the semesters viz. Semester one to semester ten.

Results:
Lectures reduced anxiety with regards to study material was "strongly agreed" by 46.4% Indians, whereas 62.5% of South Africans and 50% Mauritians opted the "agree" option. As far as faculty as role models were concerned, 15 (37.5%) of students [males 7 (35%); females 8 (40%)] strongly agreed with the option. Preference of structural approach and the correlation with gender was found to be statistically significant P <0.05.

Conclusion:
The data both suggest and prove that students are ultimately still in favor of lectures; however, duration, content, and lecture formats were critically appraised. Although the study is a pilot study, which was conducted on a small sample size, the findings can be utilized as baseline data for further investigations.

Keywords
Lecture, Mauritius, medical education, medical students, pilot study, SSR Medical College

Introduction

Many hours of a student's life are spent in a lecture hall, "the supposed place of education, growth, and understanding." Likewise, countless hours are spent by faculty and staff in preparation for these lectures. Often the aforementioned statement is not entirely accurate, and time is wasted as both the needs of the students and the aims of the lecturers have not been met. [1] As technology and methods of teaching have developed, so have the student and their interests. Over this period, many insights into how students learn and assimilate information and gain knowledge have been made.

In this modern-day and age, students have access to what seems like endless information and content with more captivating capability than a blackboard. Is the use of the old school blackboard method still viable and useful in this modern-day and age? Do students believe that lectures aid them in reducing the stress and fear that surrounds examinations? [2]

Every student is unique in their style of learning and content assimilation; likewise, each faculty has unique methods and styles of presenting the content. Can there be a lecture style that fulfils the needs of the majority without severely handicapping the minority?

Discipline and the expected nature of a student's conduct and how these values are upheld and maintained have been amending throughout the centuries. The majority of institutions have guidelines and rules to both regulate and ensure that discipline is maintained. Is the notion of discipline still valued by students in this modern-day and age? Does discipline within the lecture hall aid or hinder learning and understanding? [3]

In this fast-paced world, are lectures that take longer time, beneficial to modern medical students who prefer speed and ease of use over the duration? Are lectures in a traditional format still the best tool to optimize the education of students? Can an equipoise be struck between the needs of the students and the lecturers in order to decrease the time wasted and maximize the content understanding and uptake of students? The objective was to discover the perceptions of medical scholars on current trends in lecture delivery. The need for the study also arises from the fact that there is a dearth of data in Mauritius.

Methods

Study Period

The study commenced from the 15 August 2018 and was concluded on the 31 August 2018 at IOMIT'S SSR Medical College, Mauritius. SSRMC is the first medical school in Mauritius and was established in September 1999.[4]

Study design, participants, and the collection of data

A cross-sectional observational analytic pilot study was conducted via the method of a semi-structured closed-ended questionnaire. Forty medical students were identified after matching age, gender, and a semester of students (twenty males and twenty female students). Two male and two female students were chosen via a convenience sampling technique from all the semesters viz.

Semester one to semester ten. A quantitative method was implemented to determine the answer to the research question.

Questionnaire design

A semi-structured questionnaire was designed after an extensive literature survey so that they were relevant to meet the objectives highlighted above. The questionnaire was distributed to all the selected students of Sir Seewoosagur Ramgoolam Medical College. A 5-point Likert scale ("Strongly disagree", "disagree", "neither agree nor disagree", "agree", "strongly agree") was used to record responses, and all the responses were positively expressed. The questionnaire was divided into five parts: demographic details, the impact of faculty on lectures, characteristics/qualities of a lecture, product of lecture, and associated factors. The initial portion of the questionnaire comprised of various demographic details of age, gender, nationality, and a current semester of medical students. The second part of the questionnaire consisted of the impact of faculty: preference of dynamic teaching faculty, faculty as role models, faculty and student relationship, teaching style, and the role of discipline in the lecture. The third part encompassed the lecture's characteristics/ qualities: time efficiency, preference of structural approach, preference of examples with regards to discoveries and innovation, overview at the end of the lecture. The fourth part of the questionnaire contained the lecture's products: reduced anxiety, resolved complexities of the topic, and the ability to answer questions in examinations. The fifth part incorporated the associated factors: visual aids, loss of focus in mid-lecture, class involvement, longer lectures. Cronbach's alpha for reliability analysis found the internal consistency between the items to be 0.70.

Inclusion criteria

Two male and two female students were included from all the semesters (semester one to semester ten) of SSR Medical College.

Exclusion criteria

All other students were excluded from the study as it is a pilot study. Participation in the study was completely voluntary. Those who were unwilling to participate in the study were excluded. Incomplete questionnaires were expelled from the study.

Ethical committee approval

Ethical committee approval was taken from the institutional ethical and review board of Sir Seewoosagur Ramgoolam Medical College, Mauritius, before conducting the survey. The Research was conducted as per the latest version of the

Declaration of Helsinki, 64th World Medical Association, General Assembly, Fortaleza, Brazil, October 2013, Helsinki - Ethical Principles for Medical Research involving Human Subjects guidelines. [5]

Data management and statistical analysis

Data analysis was performed using IBM Statistical Package for the Social Sciences (SPSS) for Windows Version 24.0, EPI Info 7.1.5 Windows Version, Microsoft office professional plus Excel 2016. Descriptive statistics were used to analyze the demographic profile of the students. A Chi-square test was implemented and performed to elucidate correlations between the different variables. Confidence intervals of 95% (95% CI) were established, and p<0.05 was determined to be of statistical significance.

Results

Table 1: Demographic details of medical students (n=40)

		n	(%)
Gender	Male	20	(50)
	Female	20	(50)
Nationality	Indian	28	(70)
	Mauritian	4	(10)
	South African	8	(20)
Semester	1st Semester	4	(10)
	2nd Semester	4	(10)
	3rd Semester	4	(10)
	4th Semester	4	(10)
	5th Semester	4	(10)
	6th Semester	4	(10)
	7th Semester	4	(10)
	8th Semester	4	(10)
	9th Semester	4	(10)
	10th Semester	4	(10)

This pilot study was conducted on a total of 40 students. The mean age of the scholar was 20.80 ± 1.99 years SD. Table 1 depicts 20 (50%) of whom were male, and 20 (50%) were female; 28 (70%) were Indian; 4(10%) Mauritian and 8(20%) South African, respectively. Four students from each semester participated.

Table 2 depicts the correlation of impact of faculty on lectures, gender, and nationality of medical students. For a preference of dynamic teaching faculty majority of the Indian students and all Mauritians strongly agreed, whereas for South African students "strongly agree" option was chosen by half of the students followed by "agree." As far as faculty as role models were concerned, mixed reactions, mostly "agree" and strongly agree," perceived for the male cohort. None of the genders "strongly disagreed," and the least population disagreed. Most of the Indians and Mauritians were "strongly agree," followed by "Neither agree nor disagree," whereas South Africans "agreed." Male students were mostly neutral (60%) in faculty-student relationships, but females showed a mixed reaction with no

Table 2: Correlation of Impact of faculty on lectures, gender and nationality of medical students

Impact of Faculty		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	P value
Preference of dynamic teaching faculty							
Gender	Male	0(0)	0(0)	3(15)	7(35)	10(50)	0.247×
	Female	0(0)	0(0)	2(10)	3(15)	15(75)	
Nationality	Indian	0(0)	0(0)	2(7.1)	9(32.1)	17(60.7)	0.080×
	South African	0(0)	0(0)	3(37.5)	1(12.5)	4(50)	
	Mauritian	0(0)	0(0)	0(0)	0(0)	4(100)	
Faculty as role models							
Gender	Male	0(0)	2(10)	7(35)	4(20)	7(35)	0.343×
	Female	0(0)	1(5)	3(15)	8(40)	8(40)	
Nationality	Indian	0(0)	2(7.1)	7 (25)	8(28.6)	11(39.3)	0.456×
	South Africans	0(0)	1(12.5)	2 (25)	4 (50)	1 (12.5)	
	Mauritian	0(0)	0(0)	1(25)	0(0)	3(75)	
Faculty and student relationship							
Gender	Male	0(0)	4 (20)	12(60)	2(10)	2(10)	0.069×
	Female	1(5)	5(25)	6(30)	8(40)	0(0)	
Nationality	Indian	1(3.6)	6(21.4)	12(42.9)	7(25)	2(7.1)	0.878×
	South African	0(0)	2(25)	5(s 62.5))	1(12.5)	0(0)	
	Mauritian	0(0)	1(25)	1(25)	2(50)	0(0)	
Teaching style (Dictation is better than explanatory style)							
Gender	Male	3(15)	6 (30)	9 (45)	2 (10)	0 (0)	0.863×
	Female	4 (20)	4 (20)	9(45)	3(15)	0(0)	
Nationality	Indian	5(17.9)	7(25)	12(42.9)	4(14.3)	0(0)	0.778×
	South African	1(12.5)	3(37.5)	3(37.5)	1(12.5)	0(0)	
	Mauritian	1 (25)	0(0)	3(75)	0(0)	0(0)	
Role of Discipline and lecture							
Gender	Male	0(0)	1(5)	2(10)	6(30)	11(55)	0.791×
	Female	0(0)	0(0)	2(10)	6(30)	12(60)	
Nationality	Indian	0(0)	1(3.6)	3(10.7)	8(28.6)	16(57.1)	0.967×
	South African	0(0)	0(0)	1(12.5)	3(37.5)	4(50)	
	Mauritian	0(0)	0(0)	0(0)	1(25)	3(75)	

×p>0.05

response in "strongly agree" and least in "strongly disagree". The majority of Indian (42.9%) & South African students opted for "neither agree nor disagree." Both genders were mostly (45%) neutral regarding Teaching style. The same response reflected in the majority of all three nationalities. The majority of the students, irrespective of gender and nationality, strongly agreed on the role of discipline and lecture.

Table 3 demonstrates the correlation between the characteristics/ qualities of the lecture, gender, and nationality of medical students. Adequate lecture time was vital for most of the students except for Mauritians, who showed a mixed response. The structural approach was significantly preferred by both genders (p<0.05) and most of the nationalities. Preference of examples with regards to

Table 3: Correlation between characteristics/ Qualities of Lecture, gender and nationality of medical students

Characteristics/ Qualities of Lecture		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	P value
Lectures are time efficient							
Gender	Male	0(0)	3(15)	2(10)	6(30)	9(45)	0.162×
	Female	2(10)	0(0)	4(20)	8(40)	6(30)	
Nationality	Indian	1(3.6)	2(7.1)	3(10.7)	11(39.3)	11(39.3)	0.306×
	South African	0(0)	0(0)	2(25)	2(25)	4(50)	
	Mauritian	1(25)	1(25)	1(25)	1(25)	0(0)	
Preference of structural approach							
Gender	Male	0(0)	0(0)	0(0)	4(20)	16(80)	0.018*
	Female	0(0)	0(0)	4(20)	8(40)	8(40)	
Nationality	Indian	0(0)	0(0)	2 (7.1)	6(21.4)	20(71.4)	
	South African	0(0)	0(0)	2 (25)	4 (50)	2(25)	0.135×
	Mauritian	0(0)	0(0)	0(0)	2(50)	2(50)	
Preference of examples with regards to discoveries and innovation							
Gender	Male	1(5)	0 (0)	4(20)	11(55)	4(10)	0.176×
	Female	0(0)	2(10)	1(5)	9(45)	8(40)	
Nationality	Indian	1(3.6)	2(7.1)	4(14.3)	13(46.4)	8(28.6)	0.946×
	South African	0(0)	0(0)	1(12.5)	5(62.5)	2(25)	
	Mauritian	0(0)	0(0)	0(0)	2(50)	2(50)	
Overview at the end of the lecture							
Gender	Male	0(0)	2(10)	3(15)	8 (40)	7 (35)	0.287×
	Female	2(10)	0(0)	2(10)	11(55)	5(25)	
Nationality	Indian	1(3.6)	2(7.1)	4(14.3)	12(42.9)	9(32.1)	0.894×
	South African	1(12.5)	0(0)	1(12.5)	4 (50)	2(25)	
	Mauritian	0(0)	0(0)	0(0)	3(75)	1(25)	

×p>0.05, *P<0.05

Table 4: Correlation of product of lecture, gender and nationality of medical students

Product of lecture		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	P value
Lectures reduces anxiety with regards to study material							
Gender	Male	1(5)	1(5)	1(5)	9(45)	8 (40)	0.570×
	Female	0(0)	1(5)	4(20)	8(40)	7(35)	
Nationality	Indian	1(3.6)	2 (7.1)	2 (7.1)	10(35.7)	13(46.4)	
	South African	0(0)	0(0)	2 (25)	5(62.5)	1(12.5)	0.577×
	Mauritian	0(0)	0(0)	1(25)	2(50)	1(25)	
Lectures resolves complexities of the topic							
Gender	Male	1(5)	0(0)	5(25)	7(35)	7(35)	0.381×
	Female	0(0)	3(15)	4(20)	7(35)	6(30)	
Nationality	Indian	1(3.6)	1(3.6)	8(28.6)	7(25)	11(39.3)	
	South African	0 (0)	2(25)	0(0)	5(62.5)	1(12.5)	0.197×
	Mauritian	0(0)	0(0)	1(25)	2(50)	1(25)	
Content covered in a lecture helps to answer questions in exams							
Gender	Male	0(0)	1 (5)	3(15)	6(30)	10(50)	0.321×
	Female	1(5)	2(10)	5(25)	8(40)	4(20)	
Nationality	Indian	1(3.6)	2(7.1)	4(14.3)	10(35.7)	11(39.3)	
	South African	0(0)	0(0)	3(37.5)	4(50)	1(12.5)	0.445×
	Mauritian	0(25)	1(25)	0(0)	2(50)	2(50)	

×p>0.05

Table 5: Correlation between Associated factors, gender and nationality of medical students

Associated factors		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	P value
Do Visual Aids assist learning?							
Gender	Male	0(0)	0(0)	3(15)	8(40)	9(45)	0.725×
	Female	0(0)	1(5)	2(10)	7(35)	10(50)	
Nationality	Indian	0(0)	0(0)	3(10.7)	10(35.7)	15(53.6)	0.072×
	South African	0(0)	0(0)	2(25)	3(37.5)	3(37.5)	
	Mauritian	0(0)	1(25)	0(0)	2(50)	1(25)	
Do you lose focus mid lecture?							
Gender	Male	2(10)	4 (20)	5(25)	9(45)	0(0)	0.106×
	Female	2(10)	4 (20)	3(15)	5(25)	6(30)	
Nationality	Indian	3(10.7)	7 (25)	7 (25)	7 (25)	4(71.4)	0.478×
	South African	0(0)	1(12.5)	1 (12.5)	5 (62.5)	1(12.5)	
	Mauritian	1(25)	0(0)	0(0)	2(50)	1(25)	
Does class involvement aid your learning?							
Gender	Male	0(0)	0 (0)	3(15)	7(35)	10(50)	0.398×
	Female	1(5)	1(5)	1(5)	10(50)	7(35)	
Nationality	Indian	0(0)	1(3.6)	3(10.7)	13(46.4)	11(39.3)	0.360×
	South African	1(12.5)	0(0)	1(12.5)	1(12.5)	5(62.5)	
	Mauritian	0(0)	0(0)	0(0)	3(75)	1(25)	
Does longer lectures equate to more learning?							
Gender	Male	6(30)	9(45)	4(20)	1 (5)	0(0)	0.754×
	Female	4(20)	8(40)	5(25)	2(10)	1(5)	
Nationality	Indian	5(17.9)	13(46.4)	7(25)	2(7.1)	1(3.6)	0.784×
	South African	4(50)	2(25)	1(12.5)	1(12.5)	0(0)	
	Mauritian	1(25)	2(50)	1(25)	0(0)	0(0)	

×p>0.05

discoveries and innovation and overview at the end of the lecture agreed & strongly agreed by almost by all students. Only <20% of the entire student population was neutral or disagreed with the statements.

Table 4 depicts the correlation between the product of the lecture, gender, and nationality of medical students. Most of the male and female students agreed that lectures reduced anxiety with regards to study material. The majority of the Indians (46.4%) strongly agreed, whereas South Africans (62.5%) and Mauritians (50%) stroked the "agree" option for the statement mentioned above. Both genders showed almost equal response for "agree" and "Strongly agree" for the statement "lectures resolve complexities of the topic." 39.3% Indians and 62.5% South Africans "strongly agree" and "agree" respectively. Content covered in a lecture helps to answer questions in exams that were "strongly agreed" by most of the males (50%) and "agreed" by females (40%). Based on nationality, we observed mixed reactions with a few who disagreed with it.

Table 5 explains the correlation between Associated factors, gender, and nationality of medical students. Most of the students agree and strongly agree that visual Aids assist learning. Only 10.7% of Indian and 25% of South African students showed neutrality. Losing focus in mid-lecture was

predominant amongst all three nationalities. Class involvement aids the learning process for most of the students with the least responsible for "Strongly disagree" and "Disagree." Most of the students agreed that longer lectures do not equate to more learning.

Discussion

The art of studying and education is very vast and widespread. How people study and retain knowledge is unique to each individual. This study has allowed for a viewing glass into the medical student's actual perception of lectures. It has shed light on what medical students perceive to be the most fruitful methods of lecture delivery and content assimilation. The data suggests and proves that students ultimately are still in favor of lectures, as 72.5% of the students feel lectures are a time-efficient method of learning. However, duration, content, and lecture formats were all disparagingly appraised. Although the research's initial goal was to gain insight into the student's perception only, the study's yield surpassed the initial expectations. Ultimately, more profound conclusions were drawn from the rich data produced by students. [6]

The study set out with the thought that blackboard teaching had become partly redundant in this modern-day and age; however, the data provided by the students shows a high affinity and liking for the blackboard method of teaching. This finding is parallel and is supported by studies undertaken by Banerjee et al in Nepal. [7] The blackboard method of teaching is still useful and has by no means become redundant. Students, however, showed an affinity for using mixed media. 47.5% of the students strongly agreed, and 37.5% agreed that visual aids assisted in learning. This finding is similar to that of research by Giri et al. and Shridevi et al. [8, 9], which found that the combination of these aids allows for the highest level of understanding in the topics. It is, therefore, evident that both old and new methods are best used in a combination in order to provide a holistic method of lecture delivery. This is bolstered by findings of Muttappallymyalil et al [10], Banerjee et al. [2] and Mahat et al. [11] in which the researchers believed the lessons of the past are to be combined with the technology of now to produce a "comprehensive system for lifelong education."

25% of the Students disagreed, whereas 12.5% of students agreed and believed that a dictating style of the lecture is better than an explanatory style of lecture, however, the 45% majority of students were neutral. This finding means that dictation style lectures, coupled with explanations, are a better teaching style than a solely explanatory style of lecture. However, this is partly attributed to the vast content that has to be covered, as well as the urgency students felt not to waste time and take useable notes from a lecture. Therefore, one can establish that a mix of dictation and explanation is vital for the best content delivery.

A strong cohort of the scholars 85% both strongly agree and agree that active participation in class and lecture-student,

as well as peer to peer involvement, is a highly prized tool in learning new concepts and receiving a deeper understanding from a lecture. This created both an emotional and psychomotor connection to the content covered and thus allowed for better retention and content assimilation. This is supported by a study conducted by Al-Na'ama et al. and Jabbar et al. [12, 13]

Students highly prized discipline, 57.5% strongly agreed, and 30% agreed that discipline in class and throughout times of learning is of great importance. Students react well to a structured and disciplined environment where an authoritative figure (the lecturer) maintains class discipline. Students showed that they learned less and were more frustrated after attending a class with less discipline than a class in which the discipline was maintained throughout the lecture. The study also provided insight into how educators dealt with students. Students were less stressed and more at ease in a classroom where preset rules of discipline and conduct were well established and understood. The results are corroborative with the findings of Hamrick et al. and Barrish et al. [14, 15]

The strong link between positive lecturer-student relationships, viewing lectures as role models and its positive effects on student motivation and learning is evident in the cited study, however, in contrast to this 45% of the students were neutral to the impact of their relationship with their faculty when it comes to learning. A further 22.5% disagreed that lecturer-student relationships impacted their learning. This may be attributed to the strong sense of self-motivation medical students possess to complete their studies, thus decreasing the value placed on personal views and relationships with faculty members. [16, 17]

The most overwhelming trend and insight provided by the data was the dislike for the length of lectures. 25% of students strongly disagreed, and 42.5% disagreed that longer lectures equate to more learning. Students almost unanimously were of the view that lectures lasted too long and thus caused lapses in concentration and hence loss of understanding throughout the lecture. Students felt that lectures of one hour were too long and would prefer a higher frequency of lectures with a shorter duration. Students also reported that in classes where lecturers gave breaks or provided physical stimulus, the loss of concentration was better circumnavigated. The practical implication of what this study can yield would be a new, overhauled lecture format which would allow for the lecturer to present the content and get through the entire syllabus all whilst optimizing what students believe will be best for the assimilation and understanding of the content, thus ultimately striking an equipoise between the needs of the lecturer and student. [18]

Conclusion

The data suggests and proves that students ultimately are still in favour of lectures; however, duration, content, and

lecture formats were all critically appraised. Although the study is a pilot study, which was conducted on a small sample size, the findings can be utilized as baseline data for further investigations.

Limitation and future scope

This was a pilot study that undertook research on a sample size of forty. We want to expand the study on a greater number of samples in the future involving all the medical students of SSR Medical College.

Abbreviations

Indian Ocean Medical Institute trust (IOMIT), Seewoosagur Ramgoolam Medical College (SSR Medical College)

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Authors' contribution

a. Study planning: IB, SKJ
b. Data collection: JR, AL
c. Data analysis/ interpretation: IB
d. Manuscript writing: JR, AL
e. Manuscript revision: JR, IB, AL, SKJ
f. Final approval: JR, IB, AL, SKJ
g. Agreement to be accountable for all aspects of the work: JR, IB, AL, SKJ

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