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## Study processes of first year clinical students of the College of Medicine, University of Ibadan, Ibadan Nigeria

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### Summary

Students adopt several learning approaches towards achieving the perceived goal of passing their prescribed examinations. This study was carried out to determine the study processes being used by medical students of the College of Medicine, University of Ibadan on arrival at the Faculty of Clinical Sciences. One hundred and sixty five first year clinical students were studied using the modified 'Biggs' Study Process Questionnaire. Additional questions to identify local factors that would contribute to the learning were also included. There were 143 respondents (87% of the study population). The predominant study pattern among the students was the deep approach (63%). The achieving and superficial approaches were used by 8% and 29% of the students respectively. Additional analysis showed that 68%, 31% and 1% had 'good', 'average' and poor learning capacities respectively. Self interest was the principal reason why the students chose medicine as a career. Most students (76%) preferred lectures to tutorials, and only 30% found out extra information about topics taught frequently. Thirty-nine percent of the study cohort saw their teachers as role models, and 76% intended to travel abroad after graduation. Majority of 1st year clinical students of the College of Medicine, University of Ibadan adopted a deep approach to learning and have a good capacity to learn. However, most do not employ self-directed learning strategies and do not see their teachers as role models. The majority intend to travel abroad upon graduation.

**Keywords:** *Study process, medical students, curriculum evaluation, learning approaches, Ibadan.*

### Résumé

Cette étude avait pour but de déterminer les approches d'étude utilisées par les étudiants en faculté des sciences cliniques à l'université d'Ibadan pour préparer leur examen. Au total 143 étudiants en première année clinique remplissaient le questionnaire d'étude d'approche de Biggs et d'autres questions pour étudier d'autres facteurs locaux qui contribuent à cette méthode d'étude. Ils étaient 143 participants (87% des étudiants étudiés); la fréquence

prédominante d'étude était la méthode d'étude approfondie (63%). Les approches superficielle et achevée étaient de 29% et 8% respectivement. Les capacités d'apprendre étaient de 68% 31% et 1% correspondant à bonne, moyenne et faible respectivement. L'intérêt personnel était la raison principale du choix de la médecine comme profession. La plupart des étudiants (76%) préféraient les cours qu'au group de discussions. Seule 30% des étudiants cherchaient des informations additionnelles à propos du sujet appris. 39% voyaient leur professeur comme des modèles et 76% comptaient aller à l'étranger après leur examen final. En conclusion, les étudiants de la première année clinique à 'université d'Ibadan et ont des bonnes capacités d'apprendre. Cependant d'autres n'avaient de stratégies d'étude et ne voyaient pas leurs professeurs comme des modèles.

### Introduction

Medical education at all levels is perceived to be involving, physically and mentally stressful and challenging. Approaches to learning are defined as composites of strategies and motives that guide and sustain learning [1,2]. Different students adopt several learning approaches toward achieving a perceived goal, which in most cases is passing the prerequisite examinations for obtaining a degree. The study approach adopted depends on the student, the teaching style and the environment. At the College of Medicine, University of Ibadan learning is further compounded by a series of socio-economic factors [3], which may have an impact on the learning process.

Three types of learning approaches have been identified. These are: 1) surface approach (SA), which entails reproduction of sufficient detail to meet demands minimally; 2) deep approach (DA) that involves mastering the problem, through intrinsic interest in learning new tasks; and 3) achieving approach (AA) whereby the student uses cost-effective organization to maximize marks awarded for learning with the aim of being better than his/her peers. The best study process is, however, the composite approach, which is a combination of the deep, and the achieving approach. Several Study Process Questionnaires (SPQ) have been designed to assess the study approach being used by students and, by extension, the approach, the curriculum and teaching styles are encouraging [2,4].

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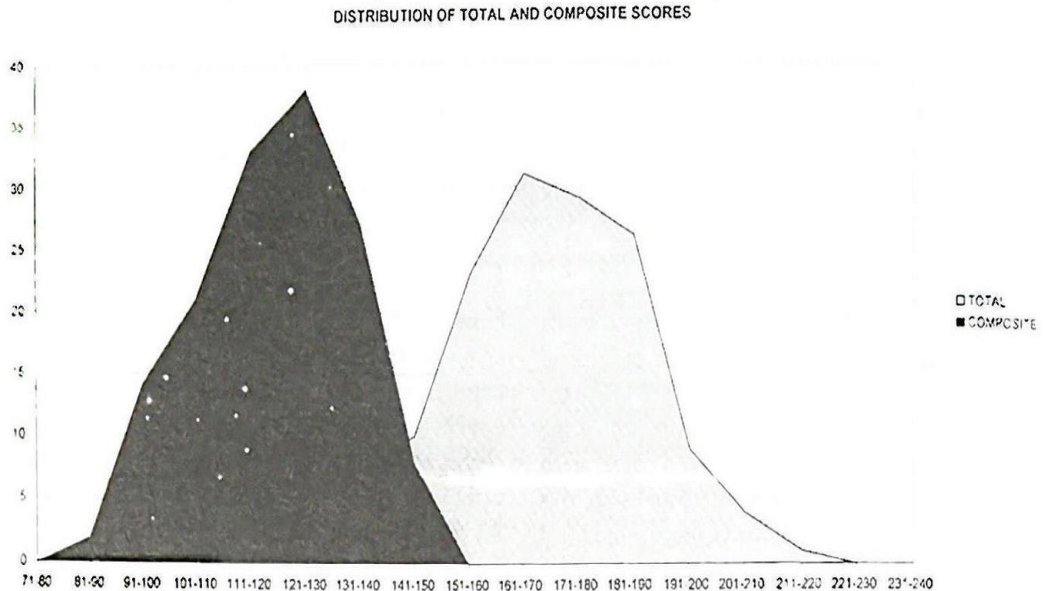


Fig. 1: Distribution of total and composite scores

Previous studies on medical education at the College of Medicine University of Ibadan have focused mainly on performance, socio-economic milieu, influence of gender, computer literacy and career choice of medical students [3,5,9]. No previous study has evaluated the study approach used by the students and this may actually determine the outcome of their education, in terms of success at examinations as well as career prospects. The College is currently reviewing its curriculum and as part of this project, this study was directed at assessing the study processes being used by first year clinical students and thus determine the learning approaches being encouraged by the curriculum of the Faculty of Basic Medical Sciences (FBMS) in students who have passed the intervening examination.

#### Materials and methods

The study was approved by the Faculty of Clinical Sciences (FCS) Faculty Board of the College of Medicine, University of Ibadan, Nigeria as part of the curriculum evaluation process. One hundred and sixty five first year clinical students of the faculty who had just passed the Part I MBBS preclinical examination were selected to be studied using a modified 'Biggs' Study Process Questionnaire [4]. The SPQ was modified by the addition of ten questions directed at local factors were included (appendix 1). The questionnaire was validated during focused group discussion sessions with second year medical students.

Permission was obtained from the relevant faculty staff to administer the questionnaire during the introductory lectures that are the first posting on arrival from the FBMS (i.e. before their exposure to clinical postings). A total sampling method was used and all students were briefed on the aims and objectives of the project. The ques-

tionnaire was then distributed to those who consented to participate in the study.

The responses were scored as described by Biggs and statistical analysis done with SPSS version 11 software. The capacity of the study population to learn was classified as 'good', 'average' or 'poor' based on the percentage of their composite score as a percentage of the total composite score achievable on the Biggs SPQ as follows: 1)  $\geq 75\%$ , 'good' learner, 2) 51-74%, 'average' learner, and 3)  $\leq 50\%$ , 'poor' learner.

The percentage of students giving the preferred answer to each question was calculated to enable comparisons between various indices. However where necessary, the relationship between the indices answered was done by comparing the actual score of both indices marked by each student using Pearson's Correlation test in order to obtain a more sensitive and specific result.

#### Results

The questionnaire was completed by 143 students who consented to participate in the study, representing 87% of the 165 evaluable students in the study population.

##### Study processes and learning capacity

The predominant study pattern among the study population was the D of the student (63%), whilst AA and SA were used by 29% and 8% of the students respectively. The distributions of the total and composite score were normal (Fig. 1). Using the classification described above, 68% and 31% of the students had 'good' and 'average' learning capacities respectively, whilst 1% had a poor learning capacity.

### Self-directed learning processes

Twenty-two percent of the students prepared frequently, almost always or always ahead of classes (Fig. 2), whilst 29% of the students found out extra information in the library or internet about topics taught with the same frequency (Fig. 3). In addition, 76% students preferred lectures to tutorials. There was a strong correlation between preference for lectures and not frequently preparing ahead of classes or finding out extra information after lectures (Pearson's correlation ' $r = 0.79$ ,  $p = 0.032$ ). Forty percent of the students saw their teachers as role models and would like to emulate them, whilst the others did not.

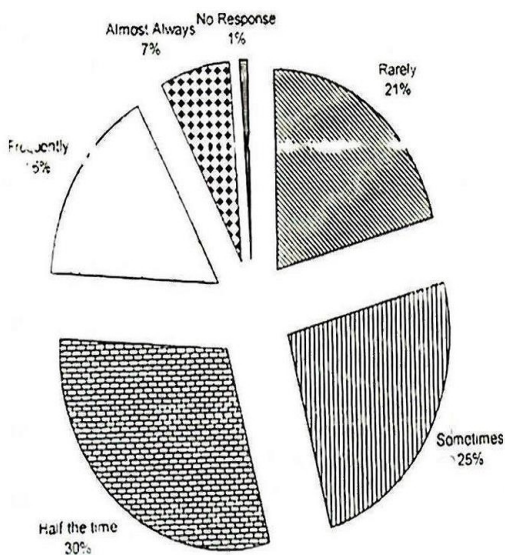


Fig. 2: Preparing ahead for class.

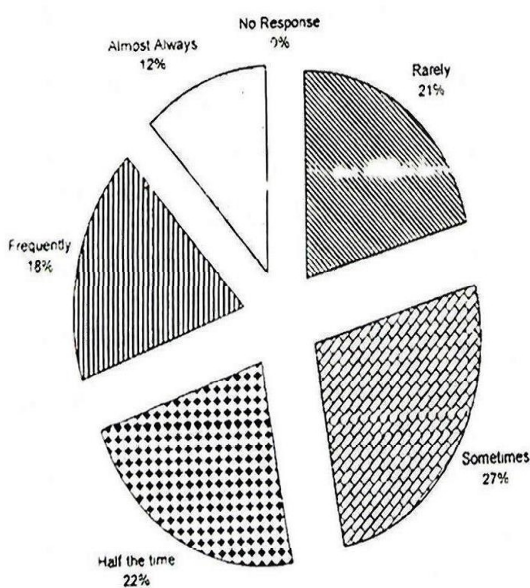


Fig. 3: Finding out more information about topics taught.

### Career choice and future plans

Most of the students (85%) indicated that self interest in medicine was the reason for choosing medicine as a ca-

reer, whilst 14% cited family and other pressures. Furthermore majority (77%) of the students were intending to travel abroad after graduation.

### Discussion

The learning approach students adopt depends on factors both within the student and in the teaching context (teaching style and the teaching environment). What students learn is dependent on their interpretation of what they consider as important, their personal goals, and their abilities. SPQs determine what learning approaches are being encouraged by the teaching styles and the curricula and can be applied to students at various stages of learning. Educational institutions may then use the information obtained to assess their curricula and the effect of reviews/changes to teaching and assessment methods.

This study provides strong evidence that the FBMS curriculum and teaching style encourages a good study process in students with majority of those who passed the Part I MBBS Examination first year clinical students adopting the deep approach to learning. The deep approach to learning has been proven to predict success in final examinations at the university whereas surface learning predicts failure [10, 11]. The FCS should therefore create a learning environment that would further enhance this learning approach in clinical students in order to produce competent graduates.

Most of the students had a 'good' capacity to learn and this in keeping with the finding that only a minority utilize SA thus ensuring high composite scores for the majority. However, it is important to note that the adoption of a good learning style by students does not predict a good performance at examinations. In an earlier report on clinical experience, performance in final year examination and learning style among medical students, McManus *et al* [12] showed that success in the final examination was not related to clinical experiences. However, the amount of knowledge gained from clinical experience was related to achieving and deep learning styles. Other authors have shown that for clinical experience to translate to good examination performance there is an additional need for good training (by teachers) as clinical experience only yields confidence at examination and not necessarily competence [13]. Therefore the achievement of competence and thus success at examinations requires the combination of 'good' student and 'good' training and environmental factors.

Considering the above, the finding that majority of the students did not see their teachers as role models nor wanted to emulate them was surprising. This is because, in addition to the importance of training of medical students by teachers, the mentor-mentee relationship and role modeling are considered to be major factors affecting the performance of students, even if indirectly [14]. The lack of a mentor-mentee relationship/role modeling may therefore result in inadequate learning and poor perfor-

mance by the students. Whilst our finding may suggest a poor student-teacher relationship in the FBMS, a more likely explanation is the fact that the students (who wish to be clinicians) had only been exposed to non-clinical teachers (who they do not wish to emulate) at the time of the study. Other studies are therefore required to evaluate the local teaching and environmental factors in our College in order to have a complete picture of the 'learning environment' to which the students are exposed.

We were surprised to find that most of our students do not frequently prepare ahead of classes or seek additional information after classes. This suggests that the students did not employ self-directed learning techniques in pre-clinical school and instead rely on their teachers as their sole source of information. Focusing (by students) on the teacher and what they teach is characteristic of the traditional curriculum [15] (used in our medical school). In contrast, the problem based learning (PBL) curriculum focuses on the student and what they learn [15], and teacher's role is to direct the students along an effective learning pathway thus acting as a facilitator of knowledge acquisition instead of the main source of knowledges [16]. As a result, it is suggested that PBL methods should be introduced into our curriculum (for use during tutorials in the first instance) in order to accommodate and correct the problem (of students' reliance on teachers) at the same time. In addition, the number and weighting of project work done during clinical training should be increased to encourage the development of self-study further.

Students who are coerced to pursue a particular study often lack the drive to excel and this may result in poor performance. The finding that majority of our students chose Medicine as a career by themselves can therefore be expected to translate to self-motivation to excel. The proportion that were in medical school due to family (and other) pressures is however significant and indicates that the culture of parents influencing their children's choice of a career persists in the society. Further study of this phenomenon would be worthwhile.

Brain drain is well-known phenomenon in developing countries (including Nigeria) with thousands of their homegrown talents emigrating to the developed world as a result of the poor state of the economy and political instability [15,16]. The finding that most of the students studied intend to go abroad on graduating is in keeping with the report that the College of Medicine, University of Ibadan is one of the major contributors to the pool of international medical graduates in developed countries [17]. Urgent action is therefore required by policy makers (especially the Government) to stem this exodus as this will definitely have an impact on the ability of our country to achieve its Millennium Development Goals [18].

## Conclusion

Majority of first year clinical students of the College of Medicine University of Ibadan studied had adopted a deep learning approach by the time of their arrival from the FBMS and most have a 'good' capacity to learn. In addition, most chose medicine as a career themselves but have not imbibed self-directed learning as a strategy. Ultimately most of the students plan to travel abroad for further studies after graduation.

## Addendum

The authors acknowledge that the study population comprised only of students who had been successful at the pre-clinical school examination. It is therefore possible that these results are not fully representative of the effect of the FBMS curriculum as those students who did not pass the examination were not evaluated. A similar study is therefore being done on students in the pre-clinical school

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