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Biomedical Science Programme: A preliminary study on the effectiveness of a self-directed model compared to traditional lecture-based teaching methods

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Students’ Learning Style

We have observed in recent years that new students in the first year of the Biomedical Science Programme were rather passive, probably a result of years of ‘spoon-feeding’ education combined with external factors such as pushing by well-meaning parents and school rankings. These students were accepted into our Biomedical Science Programme based on their seemingly stellar performance on paper (i.e., a string of A’s, high CGPA), following examinations conducted by the respective preparatory institutions. However, results of the first test of the first semester into the program soon indicated that several students were probably experiencing problems, struggling with some of their courses. When they entered university, many of them would have experienced for the first time a different environment, in which they were expected to manage on their own time, while learning was still taking place largely in the traditional face-to-face lecture-based and guided learning mode. Meanwhile, it is universally acknowledged that there has been an explosion in information and knowledge globally. So what would be the coping mechanism to successfully manage all the information on the part of the students and the lecturers?

Aim of Our Study

Biomedical Science Programme has relied on traditional mode of teaching with students expected to meet an extravagant number of study hours per week, which weighed heavily on the average student and dampened their grades. Non-traditional approaches of learning for the current generation of millennials is preferred (Shappell & Ahn, 2016). Thus, the current pilot study aimed at investigating the effectiveness of self-directed learning on students’ performance compared to the traditional lecture-based approach.

Our Intervention

The current study focussed on three first-year core courses namely Biochemistry for Biomedical Science (MIC 1001), Fundamental Cell Biology and Genetics (MIC 1002), and Laboratory Mathematics for Biomedical Science (MIC 1003) which were offered in semester 1, 2017/2018. We decided to target first-year students in order to emphasize the importance of self-directed learning right from the start of their university years.

First, the student learning time for these courses was revised to accommodate more hours for self-directed learning prior to the commencement of the upcoming semester. Consequently, more self-directed learning slots were included in the teaching timetable with corresponding reduction in face-to-face hours. The revision in student learning time underwent due process for approval at the faculty.