A STUDY OF IMPORTANCE OF ALIGNMENT OF SUBJECTS IN THE FIRST YEAR MBBS CURRICULUM: SHOULD WE CHANGE THE EDUCATION POLICY?

Dr. Shivarama CH[1], Dr. Roshan S[2], Dr. Shishir kumar C Naik[3], Dr. Avin BR Alva*[4]

[1,2,3]Associate Professor, Department of Anatomy, Kanachur Institute of Medical Sciences, Mangalore, Karnataka, India.

[4]Assistant professor, K.S.Hegde Medical Academy, NITTE (Deemed to be University) Mangalore, Karnataka, India.

Abstract

Background: The traditional way of teaching includes a series of lectures which would be taken up by the experts in the subject. The whole medical education is compartmentalized and the students are unable to understand the larger picture. The alignment and integration of the subjects are not happening and majority of the times the students do not had a clue. This study tries to understand whether this alignment works in favour of the students or the traditional method is better.

Aims and Objectives: The aim of the study is to study the importance of alignment of subjects in the first year MBBS curriculum. The objective of the study is to uunderstand the perception of the students, to find out the effectiveness of alignment of subjects by conducting a MCQ test immediately after conducting a set of classes and to find out the retaining capacity of students by checking the scores of the students in the MCQ exams which would be conducted in a surprise manner after fifteen days of teaching.

Methods:

Design: Interventional, Cross-over Design

Settings: This study was done in the Department of Anatomy, Kanachur Institute of Medical Sciences

Subjects: I year MBBS Students.
The study was done from September 2017 to August 2018 (1 year duration)

Sample Size: 100 students divided into 2 groups

Intervention: Perfectly aligned topics in 1st year teaching with double blinding.

Tools: Validated Questionnaire for perception and Validated MCQ.

Results:

- The perception scores are better in the aligned subjects teaching group.
- The MCQ scores are better in the aligned subjects teaching group in the examination which was taken immediately.
- The MCQ scores are better in the aligned subjects teaching group in surprise exams which was conducted after 15 days.

Conclusion: The alignment of topics makes the students to understand the topics better. It is better perceived by the students and also the retaining of the subject better.

Keyword: cross sectional, interventional, alignment, MBBS and curriculum

Introduction

The blueprint of the whole curriculum with different subjects perfectly aligned is a must when someone is designing the education policies. It is said that this tiny intervention goes on to influence the overall health status of the people in the country because it ideally creates a well skilled health force[1]. There is no clear cut definition for curriculum[2]. It is often defined as the gross content which specifies the subject matter[3]. In other words it is the things to be known or expected out of the student who is undergoing the course. In the 1950s, an author called Tyler had proposed an idea on the concept and its inclusions. According to him curriculum includes content, purpose, organization, student assessment, and course evaluation[4]. Then there was another author called Harden who reorganised the definition which now included the learning outcomes, content, educational strategies, learning opportunities, assessment, and educational environment[5]. The overall curriculum contains different subjects and if perfectly aligned the outcomes are spectacular[6]. In traditional teaching the teachers would teach subject wise and the students had to put in an effort to make sense of the larger picture. But teachers have been slowly realizing the need and the integration is finally falling into place[7]. This has to be followed for some time and some study has to be conducted as there is no concrete evidence that the integration pattern that will be followed is better than the traditional one. This study puts in an effort to find the effectiveness of the alignment of subjects in the first year curriculum over the traditional one.

Aim

To study the importance of alignment of subjects in the first year MBBS curriculum.

Objectives

1. Understand the perception of the students
2. To find out the effectiveness of alignment of subjects by conducting a MCQ test immediately after conducting a set of classes.
3. To find out the retaining capacity of students by checking the scores of the students in the MCQ exams which would be conducted in a surprise manner after fifteen days of teaching.

Materials and Methods

This study was conducted in the Department of Anatomy, Kanachur Institute of Medical Sciences, Mangalore with the help of Dr Avin Alva, Assistant Professor, Department of Community Medicine, K.S.Hegde Medical Academy, Mangalore. The study was designed by Dr Avin Alva and all the statistical analysis was done by his side.

Design: Interventional, Cross-over Design

Settings: This study was done in the Department of Anatomy, Kanachur Institute of Medical Sciences

Subjects: I year MBBS Students.
The study was done from September 2017 to February 2018 (6 months duration)

Sample Size: 100 students divided into 2 groups

Intervention: Perfectly aligned topics in 1st year teaching with double blinding.
Tools: Validated Questionnaire for perception and Validated MCQ.

Inclusion Criteria: Students of 1st phase MBBS

Pre Exams: Students who have scored in between 50 to 70 percent of marks.

Exclusion Criteria: Students who did not consent.

Methodology

One hundred students were included in the study whose scores were in between 50 and 70 percent in the pre-test.

They were divided into two groups in a lottery method.
The first group of students was made to undergo five aligned sessions of Anatomy, Physiology, Biochemistry and Community Medicine topics. At the end of the 20th session a questionnaire based on the Likerts scale was provided to the student. The scores were noted in an excel sheet. They were then made to undergo a MCQ based examination which included 10 questions. The scores were noted in an excel sheet.
The second group of students were made to undergo five random sessions of the four subjects without alignment. Care was taken that the topics were same. At the end of the 20th session a questionnaire based on the Likerts scale was provided to the student. The scores were noted in an excel sheet. They were then made to undergo a MCQ based examination which included 10 questions. The scores were noted in an excel sheet.
After fifteen days a surprise MCQ test was taken which had different questions and then the scores were noted in an excel sheet.
Then the cross - over was made and the process was repeated. Finally a master sheet which included the average perception scores in the two methods, the average MCQ scores of the two methods and the surprise exam scores of the two sessions were prepared. Care was taken that the marks of the same student were matched by tagging a unique identification tag to the papers.

Statistical Analysis

Data Collection: Likert's scale analysis and MCQ score.
Analysis: - Mann Whitney U test was used to analyse perception between two methodologies. Also perception was analysed using unpaired t test.
- Statistical significance of comparison of two teaching learning methods was obtained using unpaired t test.
- Paired t test was used to analyse the OSPE scores between the immediate scores and the scores obtained after 15 days

**Results**

Table 1: Independent t test to compare the two groups

|	Group 1(n=50)	Group 2(n=50)	T	P value
	Mean ± sd	Mean ± sd		
Pre test	56±4.18	56.04±4.14	-0.048	0.962
Perception	42.7±3.05	31.62±5.86	11.86	<0.001
MCQ score	8.44±1.03	5.84±1.38	10.686	<0.001
MCQ after 15 days	8.1±1.34	4.04±0.9	17.733	<0.001

Interpretation

Comparison of the Pre-test between the two groups shows that Pre-test is higher in Group 2 group with a t value of -0.048 and is statistically non-significant with a p value of 0.962Comparison of the Perception between the two groups shows that Perception is higher in Group 1 group with a t value of 11.86 and is statistically significant with a p value of <0.001Comparison of the MCQ score between the two groups shows that MCQ score is higher in Group 1 group with a t value of 10.686 and is statistically significant with a p value of <0.001Comparison of the MCQ after 15 days between the two groups shows that MCQ after 15 days is higher in Group 1 group with a t value of 17.733 and is statistically significant with a p value of <0.001
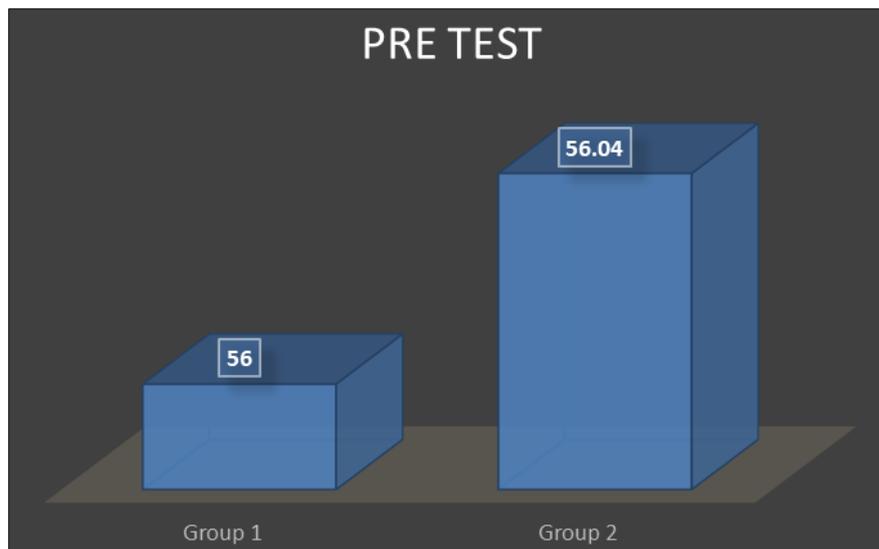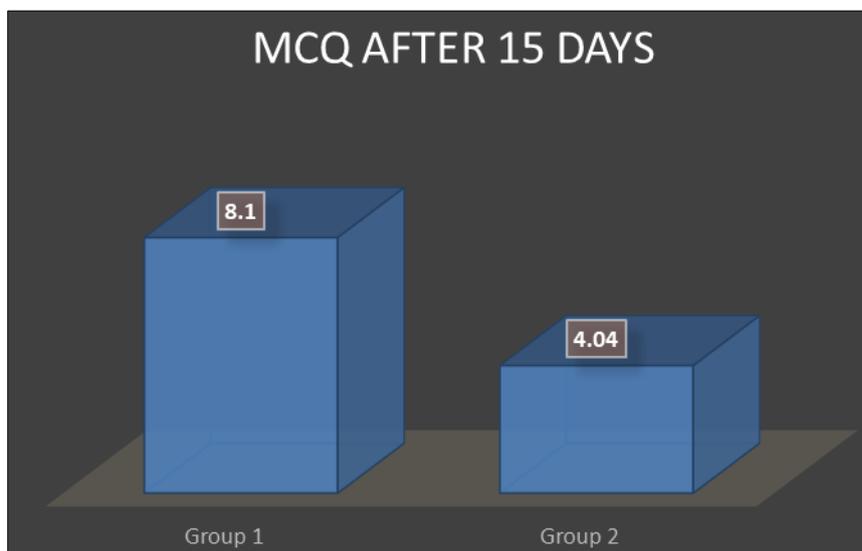

Graph 1: Pre test scores comparison
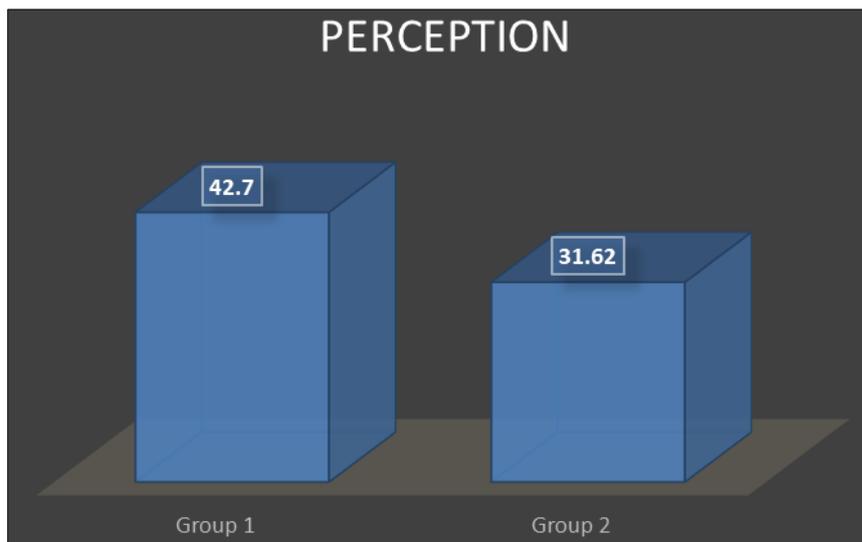
Graph 2: Perception Scores
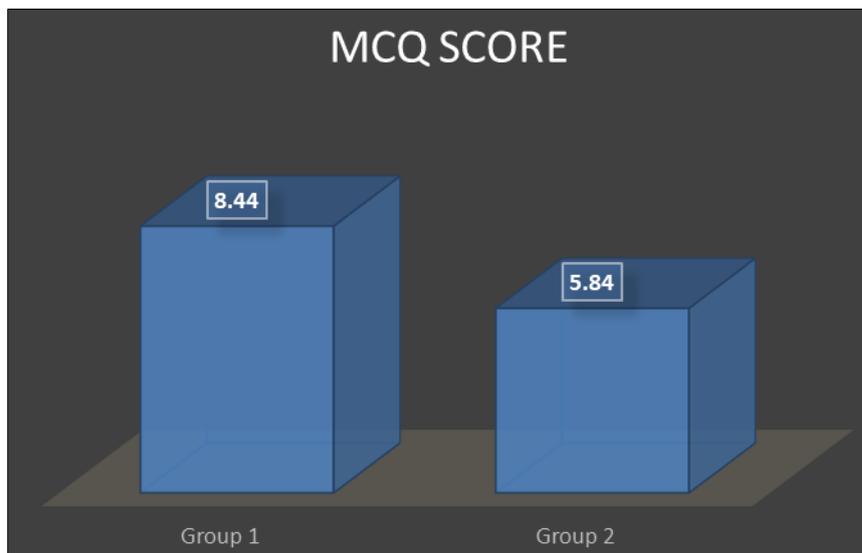
Graph 3: MCQ Scores (taken immediately)

Graph 4: MCQ Scores after 15 days

Discussion

In our study it was found that the perception scores are better in the aligned subjects teaching group, the MCQ scores are better in the aligned subjects teaching group in the examination which was taken immediately and the MCQ scores are better in the aligned subjects teaching group in surprise exams which was conducted after 15 days. Even though it looks fantastic on papers, to implement this scenario all throughout the year is quiet challenging.

The implementation of alignment of topics definitely will face big problems especially due to resistance from the faculties to implement this program. The faculty has to be properly trained in the alignment. There should be a separate dedicated team of alignment. A committee should be formed which should be under the well trained faculty. One more question is should all the subjects should be aligned in such a way that individual subjects lose their identity? Definitely, no for an answer. This is one thing that should be avoided at all costs as suggested by a study conducted by Malik AS and Malik RH[8]. One should also understand the fact that this is not practised by an individual or a small group. Preferably all the faculties who are involved in teaching should take up the responsibility. One more way is to align first the broad topics and form a blue print. This is how a module or session can be developed and fine tuning can be sought after when actually implementing the alignment. Next during the alignment, the concerned teachers from different Departments should ideally sit together and decide so that repetitions would not take place. The method of teaching is also important. The concerned departments should come together and commonly decide the method of teaching. This has to be ideally done in front of alignment committee. The expert opinion could be taken at this moment.

The assessment should also go on in an aligned manner so that the students put in an effort also. Always we should remember that better assessment leads to better learning. If perfectly aligned topics are assesses then the depth of understanding can be successfully assessed. Then at last after going through all these steps, the perfect aligned curriculum can be implemented.

Conclusion

The perception scores are better in the aligned topics. The students loved this way of teaching. MCQ scores were better in the aligned topics teaching group and also the scores were better in the surprise exams. So the retaining of the subject is also for a long time. This is the method we should imply in our curriculum.

References

1. Clarke M. What Matters Most for Student Assessment Systems: A framework Paper? The International Bank for Reconstruction and Development 2012. Available from: https: //openknowledge.worldbank.org/bitstream/handle/10986/17471/682350WP00PUBL0WP 10R EAD0web04019012.pdf?sequence=1&isAllowed=y.
2. Jamieson S, Reid AM. Curriculum models and theories. FAIMERKeele Master's in Health Professions Education: Accreditation and Assessment. 3rd ed., Module 4, Unit 1. London: FAIMER Centre for Distance Learning, CenMEDIC 2016.
3. Harden RM. Curriculum planning and development. In: Dent JA, Harden RM, editors. A Practical Guide for Medical Teachers. 4th ed. London: Churchill Livingstone 2013.
4. Tyler RA. Basic Principles of Curriculum and Instruction. Chicago, IL: University of Chicago Press 1949.
5. Leinster S. The undergraduate curriculum and clinical teaching in the early years. In: Dent JA, Harden RM, editors. A Practical Guide for Medical Teachers. 4th ed. London:

Churchill Livingstone 2013.

6. Chacko TV. Moving toward competency-basededucation: Challenges and the way forward. Arch Med Health Sci 2014;2:247-53.

7. Downing SM, Yudkowsky R. Assessment in Health Professions Education. New York: Taylor and Francis 2009.

8. Malik AS, Malik RH. Twelve tips for developing an integrated curriculum. Med Teach 2011;33:99-104.