

ORIGINAL RESEARCH ARTICLE

Impact of Conducting Part Completion Tests (Written) on Outcome of Terminal Examination in Biochemistry Subject

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Abstract:

Introduction:

According to Medical Council of India guidelines, regular periodical examinations shall be conducted throughout the course. The question of number of examinations is left to the institution. However it is seen that maximum medical institutes in India conduct at least two internal assessment (terminal) examinations but doesn't conduct part completion test.

Objectives:

To observe the effectiveness of conducting part completion tests for improvement of academic performance in terminal examination and also to take feedback from faculties and students.

Methods:

Permission was taken from Institutional Ethical Committee. Five part completion test and one terminal examination were conducted. 122 First MBBS students were enrolled. Groups were divided according to number of students appeared in part completion tests and terminal examination. Feedback was taken using Likert's Scale.

Results:

There were zero students in group I, 6 in group II, 28 in Group III, 69 in group IV and 19 in group V. There was increase in percentage of marks from group II to III (8%), group III to IV (15%) and group IV to V (24%). There was significant difference in marks among different group ($F= 3.76$; $p <$

0.01). Comparison of average marks shows highly significant value (Coefficient of Correlation, $r = 0.965916$).

Conclusion:

Those students who have given more number of part completion tests scored well in terminal examination. Faculties and students have agreed that these part completion tests are necessary, will give better outcome on performance of terminal examination, and part completion test should be incorporated in curriculum.

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Introduction:

Biochemistry is one of the basic subjects of medical sciences. A well designed curriculum, teaching and learning activities and assessment methods are essential for better academic performance of the students¹⁻³. Medical Council of India (MCI) has placed a lot of emphasis on internal assessment examination. According to MCI guidelines, internal assessment shall be on day to day assessment including assignments, preparation for seminar, clinical case presentation, preparation of clinical case for discussion, clinical case study/problem solving exercise, participation in project for health care in the community, proficiency in carrying out a practical or a skill in small

research project, multiple choice questions after completion of a system/teaching etc. Regular periodical examinations shall be conducted throughout the course. The question of number of examinations is left to the institution⁴. There shall be no less than two internal assessment examination in each non clinical department⁵. However it is seen that maximum medical institute in India conduct at least two internal assessment examinations (terminal or semester examination) but doesn't conduct part completion test.

Part completion test is a type of formative assessment. It is conducted upon completion of small portion of syllabus. The terminal examination is conducted at completion of every term and is a mirror image of summative examination and is considered as a rehearsal for that.

Aims and Objectives:**Aim:**

To observe the effectiveness of conducting part completion tests in Biochemistry for improvement of academic performance in terminal examination.

Objectives:

To see the difference in performance of students who have given one or more part completion test with the result of their terminal examination.

To take perception of the students that whether conducting part completion tests has benefited them to perform well in terminal examination and to get feedback from faculties of Biochemistry department regarding the feasibility of conducting part completion tests.

Methodology:

This study was carried out at Department of Biochemistry, Ananta Institute of Medical Sciences and Research Centre, Rajsamand, Rajasthan State. The project was of six months commencing from the month of October 2018 and was a prospective longitudinal study. This project was approved by Institutional Ethical Committee. A total of 122 students of M.B.B.S. Batch: 2018 - 2019 was included in this study after obtaining their voluntary written informed consent. Twenty Eight (28) students were not allowed to appear in the terminal examination due to shortage of attendance. Eight faculties of biochemistry department were also included in this study. The study included 5 part completion tests of 20 marks each and one terminal examination of 50 marks

(Written pattern). The pattern of part completion test was kept similar to that of terminal examination.

Inclusion Criteria:

Those students who have appeared for terminal examination.

Exclusion Criteria:

Students who have not appeared in terminal examination.

Students who have not appeared in at least one part completion test examination.

Hence the study comprised of following groups for comparative analysis:

Group I: Students appeared in one part completion test and terminal examination. (n = 0)

Group II: Students appeared in two part completion tests and terminal examination. (n = 6)

Group III: Students appeared in three part completion tests and terminal examination. (n = 28)

Group IV: Students appeared in four part completion tests and terminal examination. (n = 69)

Group V: Students appeared in five part completion tests and terminal examination. (n = 19)

Feedback from faculties of Biochemistry department regarding feasibility of part completion test was taken. Faculty has to answer the questions for rating from 1 to 5 (1 = minimum and 5 = maximum: Likert Scale). Average Score and Interpretation was drawn after the feedback.

Q.1. Is all these part completion tests necessary ?

Q.2. Will be there any better outcome of these part completion tests in terms of performance in terminal examination.

Q.3. Would you think these part completion tests disturbing day to day teaching activities of students

Q.4. Would you think that these part completion tests are having impact on attendance of student

Q.5. Would you think this part completion tests to be incorporated as a part of curriculum.

Perception in terms of feedback from student of M.B.B.S. Batch 2018 - 19 regarding part completion tests was taken. Students have to answer the questions for rating from 1 to 5 (1 = minimum and 5 = maximum: Likert Scale). Average Score and Interpretation was drawn after the perception.

Q.1. Do you think that these part completion tests necessary?

Q.2. Will is there any better outcome of these part completion tests in terms of your performance in terminal examination.

Q.3. Would you think these part completion test disturbing your day to day teaching activities

Q.4. Would you think that these part completion tests are having impact on your attendance

Q.5. Would you think this part completion tests to be incorporated as a part of curriculum.

Statistical Analysis:

Data was analysed in terms of either increase or decrease in percentage of marks among the groups. Statistical analysis was done on SPSS statistical software. $P < 0.05$ was considered statistically significant. Coefficient correlation and ANOVA was applied to see the statistical difference among groups.

Results:

A total of 122 students out of 150 were enrolled in this study after applying inclusion and exclusion criteria. There were zero students in group I, 6 in group II, 28 in Group III, 69 in group IV and 19 in group V. There was increase in percentage of marks from group II to III (8%), group III to IV (15%) and group IV to V (24%). (Table 1) By applying ANOVA, it was seen that there was significant difference in marks among different groups ($F= 3.76$; $p < 0.01$), although there was no significant difference between groups. (Table 1) Comparison of average marks between marks of part completion test and terminal examination shows highly significant value (Coefficient of Correlation, $r = 0.965916$) (Table 1). Hence we can see that those students who have given more number of part completion tests scored well in terminal examination.

Table 1 : Comparison between groups for terminal examination marks.

| | Group II (n=6) | Group III (n=28) | Group IV (n=69) | Group V (n=19) |
|---------------------------------|---|------------------|-----------------|----------------|
| Increase in percentage of marks | -- | 8 % | 15 % | 24 % |
| ANOVA | F= 3.76; p < 0.01 (statistically significant among groups) Average marks of different groups in terminal examination | | | |
| Coefficient of Correlation | r = 0.965916 (highly significant) Comparison of average marks of Part Completion test and Terminal Examination | | | |

$P < 0.05$ was considered statistically significant. Note: Results are not generalized

Figure No.1 shows perception from students for part completion test. Students have agreed that these part completion tests are necessary and will give better outcome on performance of terminal examination and also will have impact on attendance. They also agree that part completion test should be incorporated in curriculum. Students also agreed that these part completion tests are disturbing day to day teaching activity.

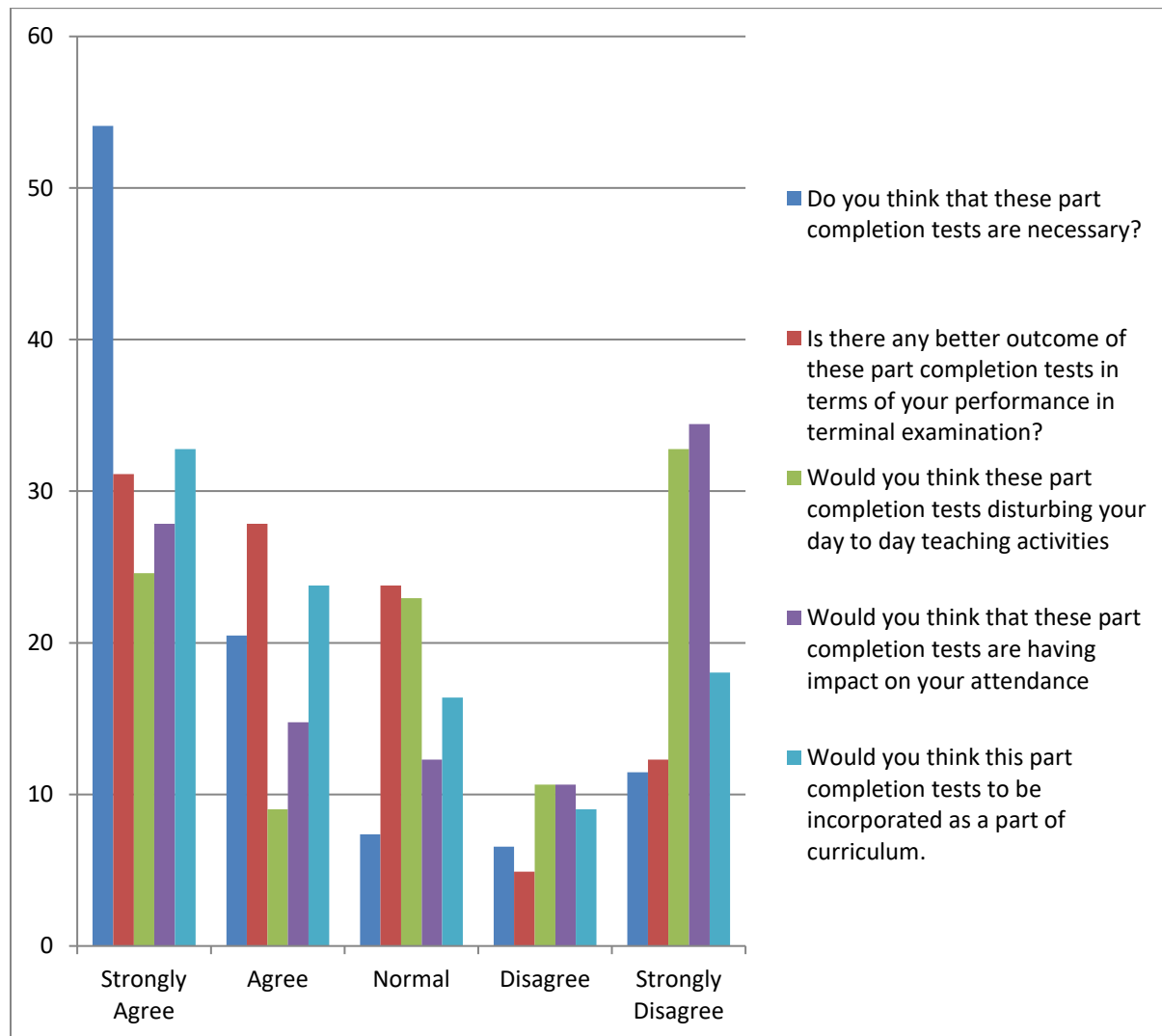


Figure No. 1

Perception from Students (n = 122) by Likert's Scale

Figure No. 2 shows perception from faculties for part completion test. Faculties have agreed that these part completion tests are necessary and will give better outcome on performance of terminal examination and also will have impact on attendance. They also agree that part completion test should be incorporated in curriculum. However faculties disagreed that these part completion tests are disturbing day to day teaching activity.

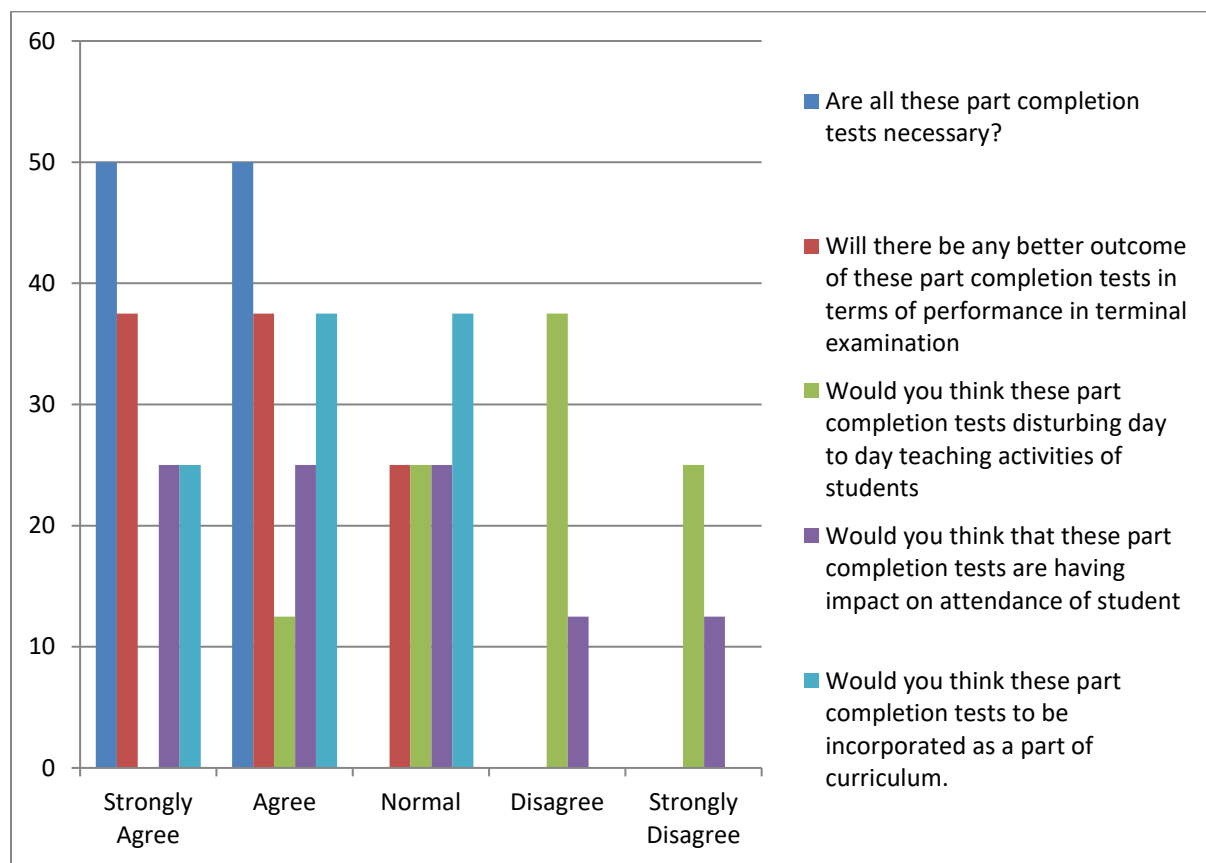


Figure No. 2

Feedback from faculties (n = 8) by Likert's Scale⁶

Discussion:

Assessment is driving force for student in learning. Continuous assessment plays a vital role in influencing the summative exam performance. Santra et al⁷ found a strong correlation between internal assessment marks and professional exam marks. Karpicke and Roediger⁸ showed that repeated testing produced a large positive effect on long term retention, while repeated studying has

no effect. It is universally accepted fact that students are under severe stress and anxiety during professional exams as compared to day to day exams. Studies have proven that exam anxiety interfere with academic performance⁹.

So under these all observations, it was interesting to know whether conducting part completion tests will have better outcome in form of performance in terminal examinations. Hence in order to improve the internal assessment marks, we have conducted this study to see the effect of written test in day to day assessment, presuming that this practice might help students to perform better in terminal exams and henceforth in summative exams as well.

In our study, we have found that, those students who have given more number of part completion tests scored well in terminal examination as compared to those who have given less.

Faculties and students have agreed that these part completion tests are necessary and will give better outcome on performance of terminal examination and also will have impact on attendance. They also agree that part completion test should be incorporated in curriculum. However students agreed and faculties do not agree that these part completion tests are disturbing day to day teaching activity.

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