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INTRA CLASS READING TO ENHANCE THE STUDENT'S PERFORMANCE - A STEP FORWARD FOR SDL

Biochemistry

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ABSTRACT

Didactic lectures that are adopted as teaching methods, are teacher oriented and the students are only the passive listeners. Interactive teaching ,requires extra time than allotted in covering the syllabus. It becomes very complex for the un prepared student to understand the lecture in the class. We have introduced a newer method of intra class room reading which is a step forward towards self directed learning.

Summary: The study was conducted on 100 medical students who were exposed to the newer method ICR. assessment and perceptions of the students were noted. Results showed positive response towards ICR. ICR is an excellent method to make the students concentrate in class and make them understand the topic in a better way.

KEYWORDS

ICR- Intra class room reading, MCQs- Multiple choice questions, SDL- self directed learning

Introduction

The primary goal of medical education technology is to enhance learning and teaching by introducing various effective teaching learning methods into the medical curriculum. The effectiveness of any teaching method depends upon how much has been received by the students. Although the lecture format may be effective for providing large body of information to a large number of students, it presents many challenges to both teachers and learners because it often promotes passive learning and fails to motivate students[(1)]. Interactive teaching is the need of the hour, but it requires a lot of skill, man power, student preparation and extra time to cover the syllabus. Interactive sessions can be conducted for only few topics. The whole curriculum can not be made interactive due to fixed time frame in the curriculum. In the view of the above facts a innovative method of intra class reading for about 20- 30 minutes was introduced . This is an effort done to inculcate a habit of prior student preparation to the class, which helps to understand the subject in a better way. Possibly intra class reading gives the student a gross idea of the topic and helps to build the rest of the knowledge over it. This method can be considered as a step forward towards self directed learning.

Keeping the above facts in mind, the following comparative study was conducted in order to assess the preference of students among the two teaching – learning methods:

large group teaching in the form of Didactic lecture and intra class reading followed by lecture.

Methodology

This study was carried out in the Department of Biochemistry, S.V.S Medical College, Mahabubnagar, Telangana state, after obtaining institutional ethical approval. Informed consent was taken from all the participants. First year (100) medical students were randomly divided in to two groups of A and B. Lipid chemistry and metabolism was the topic selected for these students. SLO's related to the topic(Annexure 1) was provided to both the groups one week prior to the lecture. The topic was covered in the form of lecture (10 classes) to group A .At the end of the session , 50 participants of group A were evaluated with the questionnaire consisting of 40 MCQs and the scores were noted . The group B participants were made to read from textbooks , any resource material, 20 minutes prior to every lecture . The topic was covered by the same teacher in 8 sesions. At the end of the session group B was evaluated with the questionnaire consisting of 40 MCQs and the scores were noted .To evaluate the students perception , we administered a qualitative questionnaire with Likert scale consisting of ten questions (Annexure 2) for 100 students (group A & B). The questionnaire was validated prior to the use by participants. The response obtained was in the terms of strongly agree, agree, disagree, strongly disagree, neither. Later a cross over of the groups were done for another topic, Haemoglobin – synthesis & degradation, by providing SLO's (Annexure 3), to avoid bias and the test scores were noted.

Statistical Analysis

The data was analysed by Graph Pad Prism software 6.01 version. The numerical data of group A and group B is expressed in terms of mean±SD for continuous data and percentages for categorical data. Comparison between two groups was done by unpaired 't' test for continuous data. The p value of <0.05 was considered to be statistically significant.

Annexure 1:

Specific learning objectives:

1. Classification of FA with examples
2. Classification, synthesis and uses of Ecosonoids
3. Classification of lipids with examples
4. Note on synthesis & catabolism of simple and compound lipids
5. Note on Cholesterol synthesis & metabolism
6. Note on Lipoprotein metabolism & transport of cholesterol
7. Note on Ketone bodies synthesis & degradation
8. Note on β- oxidation of Fas
9. Note on FA synthesis
10. Note on Lipid storage disorders
11. Note on Hyper and Hypo lipoproteinemias

Annexure 2:

Feed back –questionnaire

1) Session was useful in better understanding of the subject
2) Sessions have created enthusiasm and interest in the subject
3) Sessions helped to pay a better attention in the class
4) Helped in the remembrance of the subject
5) Created an enthusiasm towards self directed learning
6) Would like to have similar sessions
7) Created confidence
8) Helped us to raise doubts
9) Helped us to recollect the topic quickly
10) Will come prepared for the next class

Annexure 3:

Specific learning objectives:

1. Structure, functions and types of Hemoglobin
2. Mechanism of blood gas transport
3. Importance of Bohr's effect and 2,3 – BPG
4. Describe Hemoglobinopathies (Sickle cell anemia, Thalassemias)
5. Note on Heme biosynthesis
6. Classify and mention the salient features of Porphyrias
7. Note on Heme degradation
8. Define and mention types of Jaundice
9. Describe congenital hyperbilirubinemias

Table 1: Comparison of test scores of Group A (Post lecture) and group B (Post ICR)

	Group A (Regular lecture test score)	Group B(With ICR test score)	P value	Significance
Mean ± SD	21.96 ± 3.50	30.06 ± 4.00	<0.0001	Highly significant

Table 2: Comparison of test scores of Group A (Post ICR) and group B (Post lecture)

Groups	Group A(with ICR test score)	Group B (with Regular lecture score)	P value	Significance
Mean ± SD	28.74 ± 4.45	21.9 ± 3.54	<0.0001	Highly significant

Figure 1: The simple mean bar diagram for the comparison between Post lectures(Group A) & Post ICR (Group B)

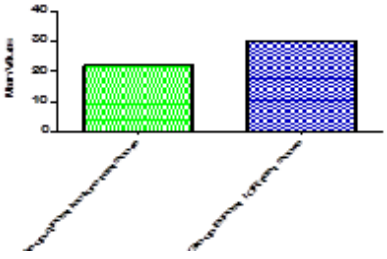


Figure 2: The simple mean bar diagram for the comparison between Post ICR (Group A) & Post Lecture (Group B)

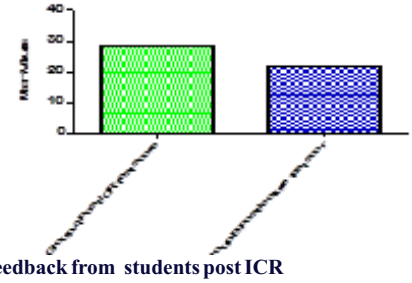


Table 3: Feedback from students post ICR

Sr. No	Components	Strongly agree	Agree	Disagree	Strongly disagree	Neither
1.	Session was useful in better understanding of the subject	52	46	0	0	2
2.	Sessions have created enthusiasm and interest in the subject	43	55	1	0	1
3.	Sessions helped to pay a better attention in the class	55	44	0	0	1
4.	Helped in the remembrance of the subject	49	50	1	0	0
5.	Created an enthusiasm towards self directed learning	53	46	0	0	1
6.	Would like to have similar sessions	53	43	1	0	0
7.	Created confidence	56	44	0	0	0
8.	Helped us to raise doubts	53	47	0	0	0
9.	Helped us to recollect the topic quickly	54	45	0	0	1
10.	Will come prepared for the next class	53	47	0	0	0

Table 4: Feedback from students post lecture

Sr. No	Components	Strongly agree	Agree	Disagree	Strongly disagree	Neither
1.	Session was useful in better understanding of the subject	40	47	7	2	4
2.	Sessions have created enthusiasm and interest in the subject	41	30	26	0	3
3.	Sessions helped to pay a better attention in the class	32	30	12	20	6
4.	Helped in the remembrance of the subject	33	36	20	9	2
5.	Created an enthusiasm towards self directed learning	23	27	30	18	2
6.	Would like to have similar sessions	25	21	32	20	2
7.	Created confidence	25	23	48	4	0
8.	Helped us to raise doubts	23	12	50	15	0
9.	Helped us to recollect the topic quickly	26	27	43	4	0
10.	Will come prepared for the next class	20	37	43	0	0

Figure 3: Comparison of Perception of students post ICR (with feedback questionnaire) in the form of The cluster bar diagram

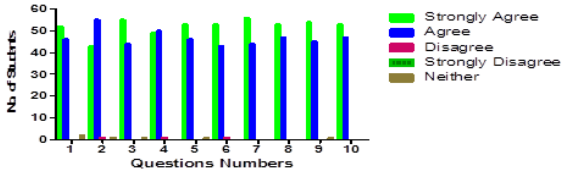
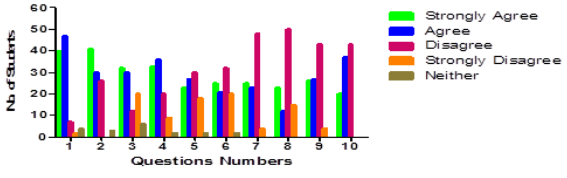


Figure 3: Comparison of Perception of students post lecture(with feedback questionnaire) in the form of cluster bar diagram for the association between



Results

Table 1, Figure 1 & 2, shows that mean ± SD of group A exposed to lecture was 21.96 ± 3.50 and 28.74 ± 4.45 , when it was exposed to ICR. p value is < 0.0001 and is statistically significant. Mean ± SD of group B when exposed to lecture was 21.90 ± 3.54 and 30.06 ± 4.00 when it was exposed to ICR. p value is <0.0001 and is statistically significant.

Table 2 & 3 gives the perception of the students towards ICR & regular lecture.

52% of students strongly agree, 46% agree that ICR session was useful in better understanding of the subject where as 40% agree(7% disagree) the same in case of lecture. 43% students strongly agree, 55% agree that ICR sessions have created enthusiasm and interest in the

subject where as 41% agree (26% disagree)the same in case of lecture. 55% of students strongly agree,44% agree that ICR sessions helped to pay a better attention in the class, where as only 32% agree(12% disagree) the same in case of lecture. 49% strongly agree, 50% agree that ICR sessions helped in the remembrance of the subject, where as 33% agree(20%disagree) the same in case of lecture.53% strongly agree, 46% agree that ICR created an enthusiasm towards self directed learning where as only 23% strongly agree, (30% disagree) the same with the lecture. 53% strongly agree and 43% agree to have ICR sessions in future & only 25% agree the same with lecture. 56% strongly agree that ICR created confidence & only 25% agree the same with lecture. 53% strongly felt that ICR helped them to raise doubts & only 23% felt the same with the lecture. 54% strongly felt that ICR helped them to recollect the topic quickly & only 26% felt the same with the lecture. 53% strongly agreed to come prepared for the next class of ICR & only 20% felt the same with lecture.

Discussion

Our data demonstrate inclusion of ICR resulted in significant increases in student learning. The combination of increased exam performance on ICR and the high level of student satisfaction encourages us to continue their use in our class. This strongly suggests that the large mean increase in performance of the students with ICR in this study reflects increases in student learning. This conclusion matches with the results drawn by Podolefsky et al (2006) which showed that whether a student uses the textbook in productive ways does not correlate with the student's academic standing. Our study design does not need any extra instructors. Instructors often advise students to read the course textbook before coming to class in order to be better prepared to learn. Students can follow the material better, [2]ask deeper questions during class,[3] and perform better on exams [4,5] if they have already been introduced to the material before class. Students said that whether or not they have read before class was one of the most important factors in their decision to participate in class. [6] Yet studies show that 70%–80% of students do not read the textbook before class[7–9] There have been a few ideas put forth as to why students are not reading. Cummings et al. propose that students have not figured out for themselves that reading is a potentially useful activity.[9] Podolefsky et al. hypothesize that students may see reading as helpful, but they may not see the link between reading the textbook and their learning, as measured by course grades and examinations[8] Reading is thus considered a low-priority activity and students instead focus their time on activities they believe will have a more direct impact on their course grades. However, even with JITT-implementation, Stelzer et al[10] reported that, disappointingly, 70% of students still "never" or "rarely" read the textbook before class, with 69% claiming that the textbook was either "useless" or "not very useful." These hypotheses imply that one way to encourage students to read before class is to make the connection between reading and their performance grades . This can be done in class. Cummings et al. proposed that students have not figured out for themselves that reading is a potentially useful activity [11-14]. These hypotheses imply that one way to encourage students to read before lecture, in this view we have introduced a novel method of ICR intra class room reading before the lecture, which is an attempt to inculcate self directed learning among the students. This approach saves precious classroom time [15,16].

Conclusion

The intra class reading is an excellent method to make the students concentrate in class and make them understand the topic in a better way. It created interest in students and motivated them towards self directed learning. This method is better than the regular lectures that are conducted presently. This method can be easily adopted ,as it does not require any extra staff and there is no additional burden on the institution. This method is useful to set an induction for large groups.

References

1. Sprawlsp.Evolvingmodelsformedicalphysicseducationandtraining: aglobalperspective.BiomedImagingInterventionJ.2008;4:e16.
2. D. L. Schwartz and J. D. Bransford, "A Time for Telling," Cognition and Instruction 16(4), 475–522 (1998).
3. M. Marcell, "Effectiveness of regular online quizzing in increasing class participation and preparation," Int. J. Scholarship Teach. Learn. 2(1), 1–9 (2008); available at http://digitalcommons.georgiasouthern.edu/ij-sotl/vol2/iss1/7.
4. R. Narloch, C. P. Garbin, and K. D. Turnage, "Benefits of prelecture quizzes," Teach. Psychol. 33(2), 109–112 (2006).
5. J. L. Dobson, "The use of formative online quizzes to enhance class preparation and scores on summative exams," Adv. Physiol. Educ. 32(4), 297–302 (2008).
6. B. C. Johnson and M. T. Kiviniemi, "The effect of online chapter quizzes on exam performance in an undergraduate social psychology course," Teach. Psychol. 36(1), 33–37 (2009).
7. D. A. Karp and W. C. Yoels, "The college classroom: Some observations on the meanings of student participation," Sociol. Social Res. 60(4), 421–439 (1976).
8. M. A. Clump, H. Bauer, and C. Bradley, "The extent to which psychology students read textbooks: A multiple class analysis of reading across the psychology curriculum," J. Instruc. Psychol. 31(3), 227–232 (2004).
9. N. Podolefsky and N. Finkelstein, "The perceived value of college physics textbooks: Students and instructors may not see eye to eye," Phys. Teach. 44(6), 338–342 (2006).
10. T. Stelzer, G. Gladding, J. P. Mestre, and D. T. Brookes, "Comparing the efficacy of multimedia modules with traditional textbooks for learning introductory physics content," Am. J. Phys. 77(2), 184–190 (2009).
11. K. Cummings, T. French, and P. J. Cooney, "Student textbook use in introductory physics," in 2002 PERC Proceedings (Boise, ID, August 7–8, 2002), edited by S. Franklin, K. Cummings, and J. Marx (AAPT, 2002), .
12. C. M. Burchfield and J. Sappington, "Compliance with required reading assignments," Teach. Psychol. 27(1), 58–60 (2000).
13. P. A. Connor-Greene, "Assessing and promoting student learning: Blurring the line between teaching and testing," Teach. Psychol. 27(2), 84–88 (2000).
14. J. Ruscio, "Administering quizzes at random to increase students' reading," Teach. Psychol. 28(3), 204–206 (2001).
15. J. Sappington, K. Kinsey, and K. Munsayac, "Two studies of reading compliance among college students," Teach. Psychol. 29(4), 272–274 (2002).
16. M. L. Simpson and S. L. Nist, "Textbook annotation: An effective and effi- cient study strategy for college students," J. Reading 34(2), 122–129 (1990).