

Brief Communication

Students' Engagement during Collection of Attendance: An Experience of a Pilot Study

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Funding: NIL**Conflict of Interest:** NIL**Abstract**

In many medical colleges in India, the annual intake for an undergraduate course is 250. Recording attendance of 250 students is a humongous task. It involves an average of 8.93 ± 1.06 minutes, which is approximately 15% of the total time of the one-hour lecture. During this time, students commonly sit idly while waiting for their roll number call. Interestingly, continuous calling of 250 roll numbers at a stretch is an additional voice stress to the teachers. With this background, we designed a program – students' engagement during collection of attendance (SEdCA). A comprehension test about the lecture topic was conducted in five minutes, and the answer sheets were collected in the next three minutes. These answer sheets were then scanned (i.e., looked at all parts of answer sheets) for roll numbers and were recorded in the register. This method keeps the students engaged in an academic activity during the time of attendance recording. It also helps in reduction of voice stress to the teachers. This method of attendance collection may be adapted by institutions according to available logistics especially when their student's strength is more than 250.

Keywords: Attendance, Concentration, Medical students, University, Voice disorder.

Introduction

Adequate attendance in the lectures and practical classes is a matter of great importance for the medical students. For most of the medical colleges in India, minimum 75% attendance is required to be eligible for the university examination [1]. It may range from 75% to 90% across different universities [2]. Many government run medical colleges in India have an annual intake of 250 students for undergraduate medical course [3]. For practical and tutorial classes, commonly, students are divided into different groups. However, it is not feasible to conduct one-hour lecture class in different groups due to faculty and infrastructure limitations. Voice disorders like singers nodules are thus usually seen in the teachers due to a higher vocal stress [4]. At the end of one-hour lecture class, attendance recording for 250 students or more, further increases the voice stress level. In addition, during the time of attendance recording, students' concentration is usually concerned only to follow their roll numbers.

With this background, the aim of this pilot experiment was to test an alternative method of attendance recording with an engagement of the students in an academic activity simultaneously. macro- and micro-nutrients [2]. With proper planning, vegetarian diet could be a boon to the health, especially to those who have diseases such as cardiovascular diseases, cataracts, kidney stones, depressive mood etc.

Materials and Methods

The present pilot experiment was conducted in Maharaja Krishna Chandra Gajapati Medical College, Berhampur, Odisha in 2017. This medical college has an annual intake of 250 students for an undergraduate medical course.

Determination of the maximum allowed time for the program

We attended ten (one-hour lecture each) classes conducted by different teachers/professors to record the average time required for recording attendance by roll call of 250 students. The average time observed was 8.93 ± 1.06 minutes. Hence, we aimed to limit the allotted time to less than 8.93 minutes for our targeted method of attendance collection.

Designing the program

We designed a program for students' engagement for eight minutes. First five minutes were allotted to conduct a comprehension test [5] for the topic taught in the class and next three minutes were allotted to collect the answer sheets from the students. We aimed to scan (i.e., looking at all parts) the answer sheets for name and roll number of the student to record it in the attendance register.

Execution of the program

The lecture theatre where the study was conducted was an air conditioned, sound proof room with a capacity of 280 students. There were 2 divisions, 10 columns and 14 rows. There were 2 projection screens in front of each division and green board in the center [Figure 1].

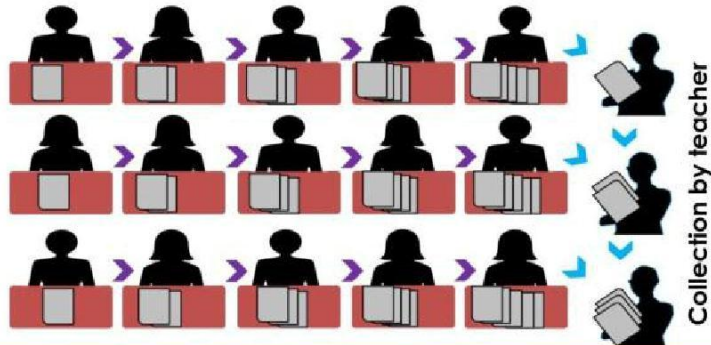


Figure 1. A lecture theatre with students writing answer for the question designed for SEdCA

The PowerPoint projection could be controlled from the central podium which was also equipped with a digital teaching module. A PowerPoint slide was designed to instruct the students about the mode of attendance recording as shown in Figure 2.

For Attendance

1. Take a piece of paper
2. Write down your name and roll number
3. Answer the following question:
4. Pass your answer sheet to the student sitting left to you



Collection by teacher

Figure 2. Instruction shown on a PowerPoint slide for attendance collection

For the first class, additional two minutes were allotted for simultaneous verbal instructions. From second class onwards, as students were more aware and adapted about the method of attendance recording, they responded more swiftly. Students were instructed to take one blank page from their exercise book for writing the answers. Time allowed for the test was five minutes. Next three minutes were allotted for the collection of the answer sheets. Though the time was allotted three minutes, the actual time taken for collection of answer sheets in each class was recorded on stopwatch for analysis. Thus, we had the answer sheets with roll numbers of all students present in the lecture hall. A total ten classes were conducted with attendance recording by SEdCA method.

Recording of attendance

A paper was taken and roll numbers from 1 to 250 was printed in 5 columns. Answer sheets submitted by students were scanned for roll numbers and the corresponding number on the printed sheet was marked. After completion of all the answer sheets, the unmarked numbers were highlighted. Then, the roll numbers were recorded in the attendance register accordingly. Average time to scan and record the roll numbers in the register was recorded. The procedure of SEdCA is depicted in **Figure 3**.

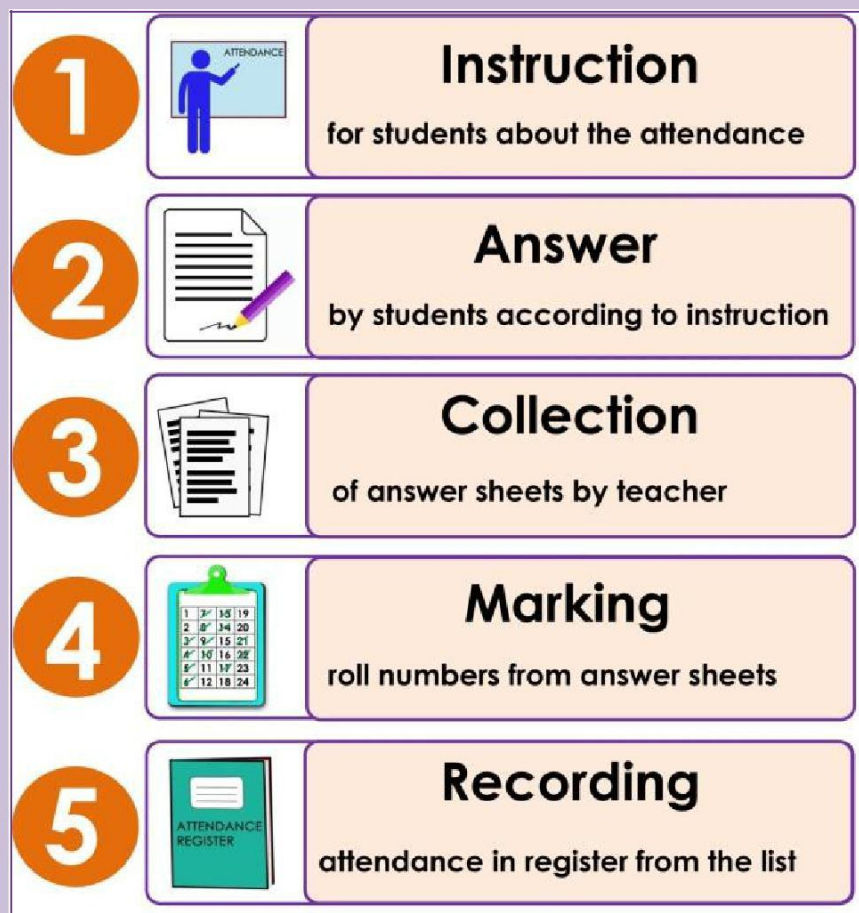


Figure 3. Overall steps involved in students’ engagement during collection of attendance

Results

The average time needed for collection of answer sheets for the students in ten classes was 2.76 ± 0.39 minutes. For the test, we allowed fixed five minutes. The average time taken by traditional roll call method of attendance recording and by SEdCA is shown in **Table 1**.

	Roll call method (n=10)	Planned SEdCA (n=10)	t, P*
Time (minutes)	8.93±1.06	7.76±0.39	3.278, 0.0042

Table 1. Comparison of time taken by roll call method of attendance recording and planned SEdCA from one-hour lecture class.

(SEdCA: Students’ engagement during collection of attendance, P*: Statistically significant p value of unpaired t-test with $\alpha = 0.05$)

Average time for recording the attendance from answer sheets (step 4 and 5 in **Figure 3**) was 42.73 ± 3.56 minutes.

Discussion

The outcome of this pilot study was positive. As we previously noted that calling 250 roll numbers is an additional vocal stress to the teachers, SEdCA may help in reducing this stress. During the roll call method of attendance recording, the roll numbers of some students could possibly be missed unintentionally, due to an incoordination in recognition and marking numbers. In SEdCA method, teachers scan roll numbers from each answer sheet; hence less chances of error in recording attendance persist. However, if some student forgets to write his/her roll number, it is very difficult to identify that student later.

There is a potential possibility that students would pay more attention in the class as the test is based on the topic taught in the class. However, testing the level of concentration of the students was beyond the scope of this study.

There are several potential disadvantages of SEdCA. The first one is the prolonged time to record roll numbers from all answer sheets. The teachers need to take all 250 (assuming 100% attendance) sheets to check the roll number and to mark it on the designed sheet of roll numbers [Figure 3, step 4]. This work needs high level of motivation from the part of the teacher. Furthermore, the average time to do this task was 42.73 ± 3.56 minutes which is also quite tiring. During this time, the teacher is engaged in clerical work, which may be disadvantageous for many teachers and most of them may not like it. However, this should be weighed against the advantages of the method before adapting it.

Though the primary aim of this method is to take attendance, the comprehension test may be used as an internal assessment. However, the test may not be accurate as students may cheat during the test due to their seating arrangement in a classroom.

Prevention of proxy attendance is challenging task in a class of 250 students. In roll call method, students may easily respond to roll numbers for their absent classmates. In many medical colleges, the attendance is recorded in a signature sheet. Teachers provide a sheet to students and they put their signatures against their roll numbers and pass it to other students. This method saves the full time of attendance recording and there is no voice stress to the teachers. However, this method has highest chance of getting proxy attendance. In SEdCA method, chances of proxy attendance are less as students have to write answers in the stipulated time. If one student writes two papers, the handwriting may be a clue for identification of the malpractice. However, this method could be better as compared to other methods in preventing proxies.

Limitation

The present study was a pilot experiment (of limited classes) from a single teaching institute. Further studies should be conducted to test the applicability of this method in different medical colleges where 250 students is the annual intake. The nature and type of other malpractices by students, if any, would be explored by further studies which would help in adapting modifications in SEdCA. If the required time (for SEdCA, it was 7.76 ± 0.39 minutes) for attendance recording is considered as the principle factor, this method may not be a suitable method where less number of students (e.g. 50, 100) are taught in a one-hour lecture class. This study has a major limitation that the method was not compared with biometric attendance recording due to logistics limitation.

Conclusion

An alternative method of collection of attendance form a class of 250 students was established. This method (SEdCA) requires less time than traditional (i.e. roll call) attendance recording. Students are

engaged in some educational task during the time of attendance collection. This method can be tested in different universities for its applicability.

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