



Accepted Article

Brief Communication

STUDENTS' ENGAGEMENT DURING COLLECTION OF ATTENDANCE: EXPERIENCE OF A PILOT STUDY

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ABSTRACT

In many medical colleges in India, the annual intake of undergraduate course is 250. Recording attendance of 250 students is a challenging task. It involves an average 8.93 ± 1.06 minutes, which is approximately 15% time of the 1-hour lecture class. During this time, students commonly sit idly and wait for their roll numbers to respond. Continuous calling of 250 roll numbers 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 5 minutes, and the answer sheets were collected in the next 3 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 students engaged in academic activity during the time of attendance recording. It also helps in reduction of voice stress of the teachers. This method of attendance collection may be adapted by institutions according to available logistics.

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

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INTRODUCTION

Adequate attendance in lecture and practical classes are important for 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 1-hour lecture classes in different groups due to faculty and infrastructure limitations. Voice disorders are common in teachers due to higher vocal stress [4]. At the end of 1-hour lecture class, attendance recording for 250 students 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 only.

With this background, the aim of this pilot experiment was to test an alternative method of attendance recording with engagement of students in academic activity.

MATERIALS AND METHODS

This 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 in undergraduate medical course.

Determination of the maximum allowed time for the program:

We attended 10 1-hour lecture classes conducted by different teachers to record the average time required for recording attendance by roll call of 250 students. The average time 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 8 minutes. First 5 minutes were allotted to conduct a comprehension test [5] for the topic taught in the class and next 3 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 is 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 can be controlled from the central podium equipped with a digital teaching module. A PowerPoint slide was designed to instruct 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

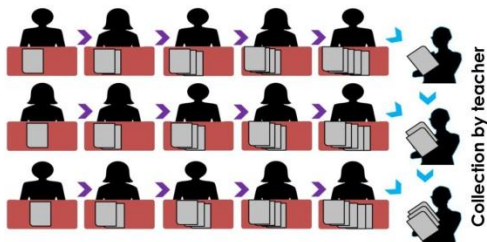


Figure 2: Instruction shown on a PowerPoint slide for attendance collection

For the first class, additional 2 minutes were allotted for simultaneous verbal instructions to the students. From second class onwards, as students were sensitized about the method of attendance recording, they responded more smartly. Students were instructed to take one blank page from their exercise book for writing the answers. Time allowed for the test was 5 minutes. Next 3 minutes were allotted for collection of the answer sheets. Though the time was allotted 3 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 10 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.

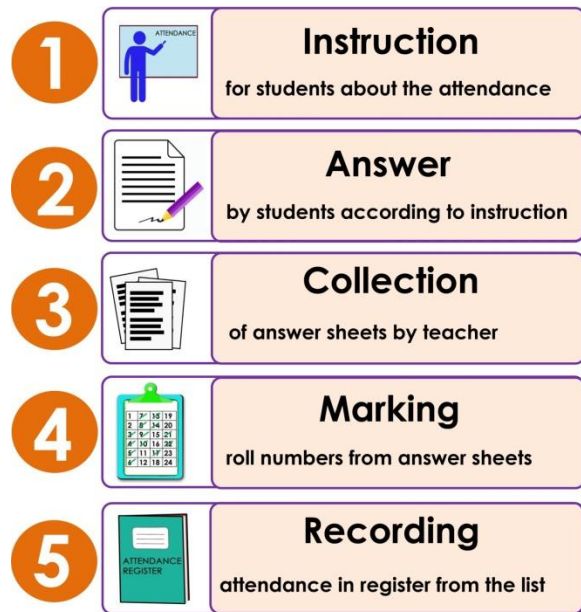


Figure 3: Overall steps involved in students' engagement during collection of attendance

RESULTS

The average time needed for collection of answer sheets for students in 10 classes was 2.76 ± 0.39 minutes. For the test, we allowed fixed 5 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	$3.278, 0.0042^*$

SEdCA: Students' engagement during collection of attendance
 *Statistically significant P value of unpaired t -test with $\alpha = 0.05$

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

DISCUSSION

The outcome of this pilot study is a new method of attendance collection where the time of attendance recording is utilized for academic involvement of students.

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 may be missed unintentionally due to incoordination in recognition and marking numbers. In SEdCA method, teachers scan roll numbers from each answer sheet, hence, there will be less chances of error in recording attendance. 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. And the average time to do this task was 42.73 ± 3.56 minutes. During this time, the teacher is engaged in clerical work, which may be disadvantageous for many teachers. 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 2 papers, the handwriting may be a clue for identification of the malpractice. However, this method is not full proof to prevent proxy attendance. A smart student can cheat in this system also. However, relatively less chance is an advantage of our method.

This 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. And the finding 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 1-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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