VARIOUS WAYS OF TAKING ATTENDANCE: ROLL TOKEN COLLECTION METHOD, AN EFFECTIVE AND ECONOMIC WAY WITHOUT WASTAGE OF TIME

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ABSTRACT - BACKGROUND - Various ways can be employed for taking attendance. Class attendance and in-class activities may be a major predictor of success but taking attendance in each lecture class can be extremely time consuming specially in large class situation. **AIM** - The proposal of this study was to know the different methods used and time spent for taking attendance during a lecture class and the utility and effectiveness of innovative Roll token collection method for the same purpose. **MATERIALS & METHODS** - 110 faculty members' responses who are working in different medical colleges were collected with regard to parameters- way of taking attendance, time of taking attendance and time required for taking attendance. These faculty members were selected randomly. An innovative Roll token collection method using readymade numbered plastic coins as Roll tokens, was used for taking attendance in 42 lecture classes. **RESULTS** - 91% faculty took attendance by calling the roll number of students and ~ 75% faculty told, time required for taking attendance was 5-15 minutes. Roll token collection method did not use the lecture-time. **CONCLUSION** - In-class activities increase class attendance and may be helpful for better academic outcome. Even the infrequent in-class activities may make this Roll token collection method, an effective and innovative way of taking attendance.

KEY WORDS - Attendance, Examination, Class-size, Academic performance, Faculty.

INTRODUCTION - Attendance is a condition in which one has to move to a particular place with an intention to be involved in some predetermined activity/activities and failure of which may make him accountable and/or affect him and the society and surrounding. Attendance is associated with many of our life activities which may be official, academic or spiritual for the purposes of safety & security, salary, statistical analysis and academic interest. In context of academic interest, attendance and internal assessment of students are the essential eligibility criteria for participating in their university examination.

Taking attendance can be an onerous time-consuming task as well as cause of embarrassment for the student or the teacher but it increases the attendance and improves the grades of students. Attendance pattern might be a useful diagnostic tool for academically challenged students.^{1,2}

Attendance can be taken by many ways³–

1. Calling the name of students,
2. Calling the roll number,
3. Have the students' sign in the door,

4. Students are assigned numbered seats and sign a seating chart when it is passed or technical assistant marks absences on the seating chart during class,
5. Passing around an attendance sign-in-sheet,
6. Pass out coded Scantron sheets on which students answer feedback questions that the faculty writes on the board,
7. Give a practice exam problem at the end of a lecture on Scantron sheets. This is both a way to take attendance and to test students' ability to apply key concepts,
8. Collect written "exercises" periodically and make them the basis of discussion,
9. Post alphabetical lists of student's name on the walls of the class room at various locations and have students sign in,
10. Use of "clickers" (Audience-response devices),
11. Swipe or insertion of ID card in an electric scanner,
12. Biometrics etc.
13. In addition, Roll number token collection method can also be used for taking attendance.

Class attendance may be a major predictor of success but taking attendance in each lecture class can be extremely time consuming⁴ specially in large class situation. In addition, there is also the very real practical difficulty of having a roll call of all students in a class during the lectures.⁵ So proposal of the study was to know the different methods used and time spent for taking attendance during a lecture class and the utility and effectiveness of Roll token collection method for the same purpose.

MATERIALS AND METHODS: The present study was conducted in SVS Medical College, Mahabubnagar, Andhra Pradesh with due permission from Dean of the college between December 2011 to May 2012. In this study we collected the responses of 110 faculty members who are working in different medical colleges with regard to parameters-way of taking attendance, time of taking attendance and time required for taking attendance. Faculty members were also requested to tell about their preferred Teaching-Learning media (Audio-Visual aids). These faculty members were selected randomly and requested for their responses regarding these parameters. Variable class-size ranging from 70 to 152 students were included in this study and time required for taking attendance was converted for 100 students batch. Very small class-size was not included in this study. Those faculty members who did not show interest and simply told "40-45 minute lecture is enough for 1 hour class" were excluded from the study.

In the Roll token collection method, readymade numbered plastic coins were used as Roll tokens. These were displayed on a board outside the lecture hall. Students were explained about it and instructed to collect their Roll tokens and leave the tokens in a plastic basket kept near the door of lecture hall. After 5 min. of the start of class, left out Roll token were treated as absent roll numbers. This method was used for 42 lecture classes. During literature search, no work mentioning similar method was found for taking lecture-class attendance so it can be treated as new approach for taking attendance.

All the collected data were arranged, analysed and presented in tabular form.

RESULTS: The present study showed that 100 out of 110 (90.90%) faculty used Roll no. calling method; only few faculty members used other methods. (Table no. 1) Most of the faculty

members, 99 out of 110 (90%) took attendance after the lecture, 3.64% during lecture and 6.36% before the lecture. (Table no. 2) Time required for taking attendance by various methods is given in Table no.-3. 60.91% faculty told that time required was between 5-10 minutes. Roll token collection method did not use the lecture-time.

Chalk and Board (46.36%) is still preferred Teaching-Learning media (Audio-Visual aids). (Table no. 4) 99 out of 110 (90%) faculty suggested asking questions by faculty during lecture is useful. 15 out of 110 (13.64%) faculty did not ask any questions during the lecture.

DISCUSSION: Lecture is normally the only method employed in teaching large classes. Generally, in a class over 100, students begin to feel anonymous.⁵ So class-size, based on number of student can be designated as a very small class with 5-25 students to a very-very large class with more than 300 students as shown in table no. 5. The present study indicated that time required for taking attendance varied between 0-15 minutes for a batch of 100 students. This can be supported by a report in which time required for taking attendance by calling roll took time 2-15 minutes depending on class size.⁶

Various ways can be employed for taking attendance but each way has its own advantages and disadvantages. In this study most of the faculty (approx. 91%) took attendance by calling roll number of students including few those faculties who involved either a class representative or a section leader for taking attendance. In-class attendance taking by this method is a real one-to-one conversation between the student and the teacher especially in large class situations and increases the student-teacher interaction. This interaction is essential irrespective of class size as it is important in endeavoring to breakdown the feeling of insignificance and anonymity.⁵ But this method is time-consuming depending on the size of class and is a more teacher-centered activity. Sometime class-representative/section leader are engaged for this work but it may create some complication where it is not legal to have students take roll or administrator does not allow it. Few faculties (4.55%) took attendance by passing around sign-in attendance sheet/piece of paper. It is less or even not a teacher-centered activity but it disturbed the students' attention.

Majority of the faculty (90%) took the attendance after the lecture and few (3.64%) at the middle or somewhere during the lecture. Attendance during the lecture causes distractions and deviates the students from the topic proper. With regard to time required for taking attendance of 100 students, 60.91% faculty told time anywhere between 5-10 minutes and 13.64% told 10-15 minutes required for this purpose. Thus approximately 75% faculty told 5-15 minutes time was required which is a significant time for 1 hour lecture class.

The Roll token collection method as described in materials and methods is a low-tech non teacher dependant way of taking attendance for lecture classes. There are certain advantages of it over other methods employed for taking attendance. It does not disturb any in-class activities as it is used outside the lecture hall. It gives some relaxation to faculties specially those who do not want to take the pain of calling a list of roll numbers. It can save the faculty from some legal or administrators' complications that may arise due to engagement of a class representative or section leader for taking attendance. It does not consume any power or electricity. It is a rapid process because at a time more than one student can approach the system, pick up their respective roll token, and left out Roll tokens are considered as absent students. In this system maintenance cost is less as wear and tear is less or no wear and tear. To see the result no need to use any allied system.

In contrast, hi-tech methods like use of clickers, swipe or insertion of ID card in a scanner etc for the same purpose require power/electricity. These systems cannot be approached by more than one student at a time thus it is a less rapid process. In these systems, maintenance cost is more as wear and tear is more. To see the result allied system like printer is used. Considering all these facts Roll token collection method can be treated as a cost effective way of taking attendance as compared to others. This Roll token collection method can prevent the wastage of 5-15 minutes of 1hour lecture time as agreed by 75% faculty participated in this study and this time can be utilized either for lecture proper or any other short in-class activities or exercises that can be completed within that time. These short exercises can be made the basis of attendance.

The downside of this method is the proxy attendance, a type of academic dishonesty by picking up Roll token for their absent friends. Same problem can be seen even in hi-tech methods like use of clickers, swipe or insertion of ID card in a scanner etc. Regarding use of clicker Amy Shapiro⁷ has mentioned that it is possible for students to cheat on clicker points by giving their device to a friend. The friend can click in answers on their behalf and there is no way to know. To prevent this, the author has mentioned that he made it clear to students and also included in his syllabus that anyone caught with two clickers in hand, both students would lose their all points for the semester. In Roll token collection method also, proxy can be prevented by imposing some sort of punishment for all if there is a discrepancy found between attendance by Roll token collection method and by short in-class exercise.

The in-class exercise can act as a “double edged sword”. At one side it can be the basis of attendance and at other side it makes the class more alive by making the student active and attentive. Van Blerkom⁸ (1996) reported positive relationships between attendance rates and academic performance in psychology courses but it is not clear whether poor academic performance is a result of infrequent attendance or infrequent attendance results from poor academic performance. In a remedial mathematics course, Berenson⁹ et al. reported that class attendance was not a significant predictor of academic achievement. Paul Pintrich¹⁰ noted that class room attendance alone would not guarantee high academic achievement. High levels of motivation would be indirectly related to high levels of academic achievement. Hovell¹¹ et al. looked at the effect of giving in-class exams or quizzes on attendance. They found that attendance at classes in which students participated in exams or quizzes was high as compared to classes in which students did not participate in exams or quizzes.

Thus in-class activities like exams including multiple choice questions fill in the blanks, very short notes or quizzes as well as asking relevant questions by faculty, make the student more active and attentive and motivate the majority of students to attend the classes that ultimately leads to good academic performance provided a valuable class room environment is provided to students. Although the classroom context is complex, faculty's behaviour is the basis of the classroom environment.¹⁰ In the present study also 90% faculty opined, asking questions by faculty during class is useful. It is assumed, class attendance facilitates academic achievement and absenteeism affects performance adversely but excessive absenteeism may reflect the quality of the class context.¹² In-class activity or exercise during lecture class is very useful tool for better academic performance of students by making the student attentive and motivating to attend more and more classes. But it may be a difficult task in each and every lecture class daily especially in a large class situation. Even

if in-class activity is practiced in on and off basis it is helpful and can reduce the chances of proxy attendance.

This study involved limited numbers of faculties and classes so further study in this topic may explore many other dimensions in teaching and learning.

CONCLUSION: An In-class activity along with asking relevant questions by faculty during a lecture make the students attentive and promotes them to attend more and more classes which may lead to better academic performance. Even the infrequent in-class activities may make this innovative Roll token collection method, an effective way of taking attendance.

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Table-1: Different ways of taking attendance (n=110)

Ways of taking attendance	No of faculty	Percentage of faculty
Roll calling	100	90.90
Passing around a sign-in sheet	5	4.55
Others	5	4.55

Table-2: Time (when) of taking attendance (n=110)

Time of taking attendance	No of faculty	Percentage of faculty
Before class	7	6.36
During class	4	3.64
After class	99	90

Table-3: Time (how much) required to take attendance. (n=110)

Time range(in minutes)	No of faculty	Percentage of faculty
0-5	28	25.45
5-10	67	60.91
10-15	15	13.64

Table-4: Faculties' preferred Audio-visual aids during lecture. (n=110)

Preferred T-L media(Audio-visual aids)	No of faculty	Percentage of faculty
Chalk and board	51	46.36
OHP	20	18.18
LCD	39	35.46

Table-5 Different class sizes based on number of students

S. No.	Class size	Number of students in range
1	Very small	5-25
2	Small	26-50
3	Mid-size	51-100
4	Large	101-150
5	Very large	151-300
6	Very-very large	More than 300

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