ATTENDANCE IN CLASSES AND EXAMINATION OUTCOME IN MANAGEMENT STUDENTS: EXPLORING THE ASSOCIATION

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Abstract *There are contrasting reports regarding effect of traditional class based training on the examination scores. There is hardly any report in this area for management training courses. Objective of this study was to find out the relation of attendance in classes and result in examination in management students. The attendance figures in each of six subjects and examination grade points were collected for a batch of management students (n=118). The result suggested that there is significant correlation between attendance in classes and examination scores; higher the attendance, higher was the score. The examination scores were significantly different in students in different quartiles of attendance percentage. Male students had significantly lower attendance and examination scores than the females. In conclusion, higher attendance in classes is related to higher scores in examination in management courses. Efforts to improve attendance appear relevant to improve outcome in examinations.*

Keywords: *Gender Difference, Attendance in Class, Examination score*

It is a common perception that students who attend less number of classes end up having poorer examination results. A number of studies have shown the influence of class attendance during a session on examination results of students. Students with good lecture attendance show good results while those with poor lecture attendance are at risk for poor performance in the examinations (Khan, Khattak, Mahsud, Munir, Ali, Khan, Saleem, & Shah, 2003).

However some of the educational researches have pointed that lecture course has no positive effect on improving a resident's in-training examination score (Cheng, 2008). There are studies which have demonstrated a negative correlation between absenteeism and test scores (Flournoy & Hyde, 1984; Riggs & Blanco, 1994; Dhaliwal, 2003; Khan *et al*, 2003); however, the correlation was minimal. Riggs & Blanco (1994) reported a negative correlation between percent absence and examination score. In this study, the odds ratio for poor performance was 5.48 for the subgroup of students with more than 30% absence compared to those without absences. The negative correlation and the high odds ratio for poor performance suggest the value of monitoring attendance and identifying students at risk for poor performance (Riggs & Blanco, 1994).

Most training courses including those which are highly practical in nature require students to attend certain percentage of the classes/lectures or to have good attendance record to be eligible to sit in examination, to qualify for the certification, or career progression (Khan *et al*, 2003; Revest, 2011; Royal College of Psychiatrists, 2012, Biju Patnaik University of Technology, 2008). However, there is hardly any information to suggest how essential this is in the adult learning scenarios, where the training is self-driven, experiential and practical, especially in management streams. Based on the available information we hypothesized that the higher attendance in the lectures for a course would have a positive impact on the outcome in the examination.

The specific objectives of the study were to find out whether there is any association of lecture attendance and examination results in management students and the variations in different levels of attendance. The objective was also to explore the university criteria on attendance requirement for examinations and the outcome.

METHOD

Study site: The study was conducted in Academy of Management Studies, Bhubaneswar, India which is under the regulations of the Biju Patnaik University of Technology (BPUT). The college is running the Masters in Business Administration (MBA) course for last 14 years.

Structure of teaching resources: One batch of MBA consists of 120 students per year. They are divided into two

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sections of around 60 each. Faculties take classes in each section separately. There are six major subject areas for which classes are taken. They are Industrial Relations (IR), Business Law (BL), Business Research (BR), Financial Management (FM), Management Information System (MIS) and Personality Growth Laboratory (PGL). The students have access to the college library and internet facilities. However the lecture content was not available in podcasts or any other downloadable format. The written material of the lectures was also not available to the students usually.

Sample: The sample for this study consisted of all the (n-118) management students who belonged to one batch. Data for these students were available for the study.

Data collection: We collected their attendance figures in the lecture classes of MBA course for one trimester. The figures were available for each of the six subjects in the course. The Trimester Grade Point Average (TGPA) of each student at the end of the trimester was collected.

Analysis: The information was entered into databases anonymously. The data was analyzed by Statistical Package for Social Sciences (SPSS) version 16. The data consisted mostly number of classes attended in each of six subject areas and TPGA which is a continuous variable. We grouped the students based on quartiles of attendance to compare between the students with variable degree of attendance with their overall result. Considering the continuous variables the statistical tests included were student t-test, analysis of variance (ANOVA) to compare the means, and Pearson's correlation. We used chi-square test for comparing the association of categorical variables such as groups of students with based on attendance percentages, quartiles and outcome of examination (pass or fail). Level of significance was considered at the standard 0.05.

RESULTS

There were 118 students in the batch consisting of 84 (71.2%) males and 34 (28.8%) females. The students attended a total of 216 lectures in six different subjects which were IR: 42, BL: 30, BR: 35; FM: 48, MIS: 30 and PGL: 31. Trimester results for all the students were available which ranged from 0.73 to 8.5 TGPA (mean 6.02 $\pm$ 1.62).

Correlation of Attendance and Examination Result

There was significant correlation between number of classes attended and TGPA (Pearson's correlation coefficient (r): 0.7, p=0.01 (2-tailed). This suggested that higher the percentage of classes attended higher was the examination score (TGPA).

Difference of Result Amongst Quartiles of Attendance

We calculated the number of students who attended lowest quartile (up to 25% of classes) n=13 (11.0%); 26-50% of classes (n=10, 8.5%), 51-75% of classes (n=38, 32.2%) and those who attended highest quartile of attendance i.e. above 75% (n=57, 48.3%). The mean TGPA in different groups of attendees are given in table 1. There is a significant difference amongst the groups. The difference of TGPA between the lowest (0-25%) quartile of attendees and highest (76% or more) quartile was highly significant (t: -10.5, df: 68, p<0.001).

Gender Differences

It has been a general perception that female students are more persistent in their attendance in classes. We studied the gender difference in attendance and TGPA. It was observed that lady students attended significantly more number of classes (80.8$\pm$ 10.1 v. 60.1$\pm$ 27.7; t: 4.24; df: 116; p<0.001) and secured significantly higher scores (6.75 v.5.73 TGPA; t: 3.22, df=116, p<0.005) compared to male students. However, the correlation for attendance and TGPA score was significant for both male (r: 0.7, p<0.01) and female (r: 0.49, p<0.01) students in spite of the above difference.

Table 1: TGPA in different quartiles of attendance

Attendance in %	N	Mean TGPA	SD	95% CI		Range	
Up to 25	13	3.32	2.19	2.00	4.65	0.73	7.14
26-50	10	5.35	1.20	4.48	6.21	3.64	7.18
51-75	38	5.78	1.28	5.36	6.19	1.18	7.86
76 or more	57	6.92	0.70	6.73	7.10	5.36	8.50
Total	118	6.02	1.62	5.73	6.32	0.73	8.50

SD: Standard Deviation of mean; CI= Confidence Interval; ANOVA: F: 35.4, p <0.001

Attendance Related Eligibility Criterion and Examination Result

BPUT considers 75% attendance in each subject as the eligibility for appearing in examinations (Biju Patnaik University of Technology, 2008). Percentage of attendance in each subject was calculated; and the mean (± SD) attendance figures ranged from lowest 61.9 (± 26.4) percent in PGL to highest 69.4 (± 27.7) percent in BL. Based on the BPUT criteria, the number of students who fulfilled the criteria for eligibility for examination having 75% attendance in each subjects was 35 (29.7%). BPUT specified that persons can be given a maximum concession of 10% in attendance in specific circumstances and would be eligible for appearing in examination with a minimum of 65% of attendance in a trimester. According to this criterion, 47 (39.8%) students had 65% or more attendance.

BPUT considers grade 5 as the cut off score for the passing the examination. Based on this, there were 97 (82.2%) students who would be considered to have passed the examination. The mean TGPA of those passed (6.6 ± 0.8) was significantly (t: -14.5, df: 116, $p<0.001$) more than that (3.2 ± 1.6) of those who failed, suggesting a clear differentiation between the two categories. Similarly average percentage of attendance in all subjects were significantly more (t: -9.4, df: 116, $p<0.001$) in students who passed (73.9 ± 17.9) versus those who failed (29.9 ± 25.5) in the examination. For the students who passed, we tried to find out the lowest attendance percentage in each subject. Subject wise the lower range of attendance in different subjects for all the students who passed (n=97) were 21.4% in IR, 10.0% in BL, 10.4% in FM, 11.4 in BR, 9.7% in PGL, 6.7% in MIS; with an average of 11.6%. This means all students below this percentage of attendance failed.

Interestingly, 100% of eligible students (75% attendance) passed the examination, whereas, 74.7% of ineligible students based on attendance percentage scored pass mark (Chi sq: 10.8, df: 1, $p<0.01$). The mean TGPA of the eligible (75% attendance) candidates (6.96 ± 0.7) was significantly (t: -4.4, df: 116, $p<0.001$) more than that (5.6 ± 1.7) of the ineligible candidates. Similarly, for the eligibility cut-off of 65% attendance, all eligible passed compared to 70.4% of ineligible (Chi sq: 16.9, df: 1, $p<0.001$); with a significant difference of TGPA scores (6.97± 0.7 v 5.39 ± 1.7 respectively; t: -5.87, df: 116; $p<0.001$). For an arbitrary cut off point of 50% attendance in all subjects, there were 81 students having this; and 78 (96.3%) of them had passed.

DISCUSSION

This study assessed the relationship of attendance in classes and examination result in students of management courses. It analyzed the available attendance figures of 118 management students in six subjects over a period of three months and the examination result in grade points for each student in that trimester. To our awareness, this is first study of this kind for management students.

The study result suggested that number of classes attended is positively correlated with the outcome grades of the examination. This is in line with studies involving other streams of students (Hamdi, 2006; Lin, 2010; Gatherer & Manning, 1998). Similar to the results of our study, it has been reported elsewhere that students with good lecture attendance show higher examination scores, whereas those with poor lecture attendance have poor performance in the examinations (Hammen & Kelland, 1994; Riggs & Blanco, 1994).

It is apparent that the ones who attended more classes had better results. This happened in spite of the fact that all the students had access to library, reading facilities and resources in Internet. It can be suggested that lecture classes still had relevance in improving effectiveness of students in examinations. Studies have demonstrated that significant learning occurs during the lectures (Fiel, 1996).

Attending classes may be influenced by the interest and liking in the part of the student for the course. It can be expected that in a proportion of students decrease in attendance figures may be secondary to lack or decreased interest in the subject. Exploration of these and appropriate intervention in the early days may help in examination related success in these groups of students.

Considering the gender, there is a clear difference in attendance figures and examination results. The reason behind this difference is not clear. It is probable that female students were more adherent to the system of education and method. The factors that are associated with low percentage of attendance and examination scores in male students need to be assessed in future studies.

As mentioned before, many management colleges and universities set a minimum attendance figure as an eligibility to sit in final examination. The results of this study established significant correlation between attendance percentage and examination score; and reported that 100% of students who met the eligibility criterion of the university regarding attendance passed the examination. These factors give validity for attendance percentage as a criterion for eligibility for examination. However, as almost three quarters of the students who did not have 75% attendance in all subjects also secured pass grade, there is probably a need to explore the cut off point following a focused study in this regard to find out whether and when it is appropriate to entertain flexibility in this criterion.

It was a short duration study involving only one trimester. The effect of attendance for longer duration, including up

to the entire course may be studied to avoid influence of the short term absences. It may be highlighted that there is a possibility of confounding variables influencing the examination results. The variables which has been observed to be acting as confounding factors are availability of well-established library, computer assisted learning facilities, utilization of teaching aids (Reede, 1999; Fitzerald & Wenger, 2003; Wass, Roberts & Hoogenboom, 2003), teaching skill of the lecturers (Stern, Williams & Gill, 2000), learning style (McManus, Richards & Winder, 1998), learning ability and previous academic record of individual students. Studies of these factors were beyond the scope of this study. Besides some may argue that the examination scores alone may not be reflective of success in courses and suggest using more elaborate methods of assessment of students (Marshall, 2002). However, at present most management courses do use the scores as the measure of post-course assessment outcome.

Implications and Conclusion

There are various implications of the study findings. It gives credence to the standards for attendance figures set by the universities or academic programmes as eligibily criteria for examination or career progression, as higher attendance figures are clearly associated with better performance. However as only a few students in this study could attend all the classes; a minority met the eligibility criterion regarding attendance to sit in examination, and majority of students passed the examination; the matter is more complex that it appears. This suggests the possibility of multiple variables contributing to the examination outcome besides the attendance figures and this needs further study.

The study result also suggests that training programmes should have robust mechanism to monitor attendance to enable early identification of concerns in attendance. In this study, there were a considerable proportion of students who attended less than 25% of classes. This was clearly a concern. As the literature suggests, it is not always the lack of interest in students as the cause of poor attendance, but also the lecture content, method of delivery and the variables associated with lecturer e.g. personality, communication skills and ability to engage and encourage students are all relevant. Reasons of poor attendance should be explored through periodic evaluations and support systems can be placed for the students and staff to improve the situation which may ultimately reflect in better examination result. Compared to females, male students in this study attended significantly less number of classes and had lower score in examinations. Issues associated with gender differences in this area need focused attention.

Although libraries and internet resources on the subjects were available, specific lecture content was not available to the management students in this study. Whether providing lecture content through various methods would influence attendance, understanding of the subject and examination result can be a subject for future study.

In summary, the study results highlighted that there is an association between attendance in classes and examination scores in management students. This suggests that efforts to improve the attendance of students in classes can be positively reflected in better course outcome. Future studies should take into account attendance and results for the whole course, especially the result in final examination, confounding factors influencing examination outcome, and achievements other than examinations.

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