Lecture Capture Technology, Student Attendance, and Academic Performance

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Background

Lecture capture technology is widely available in classrooms at institutions of higher learning. This enables automated recording of classroom activities that can be viewed asynchronously. Lecture capture technology has given students the choice to experience lecture content in a live or recorded medium without attending the classroom. The influence of lecture capture on medical education is not fully characterized.

Objectives

Specific Aim 1: To evaluate the relationship between class attendance and academic performance.

Specific Aim 2: To characterize factors that influence student attendance decisions when recorded lectures are available.

Methods

Voluntary Longitudinal OMS-I Attendance Tracking and Survey of OMS-1 and Faculty Attitudes:

Class Attendance Tracking
- ATSU-SOMA OMSI classes: Basic Structural Foundations (BSF), Foundations of Health (FOH), Neuromusculoskeletal (NMSK)-A and B, (NMSK), Cardiopulmonary (CP)-1 and 2, Renal Endocrine Metabolism (REM)-I and II, Gastrointestinal (GI)
- Attendance recorded using audience response technology

Academic Record Review
- Exam scores, discipline scores, cumulative averages
- Linked to attendance records
- All collected data de-identified

Student Survey
- Designed to evaluate attitudes towards attendance
- Administered via Tk20™

Quantitative Analysis
- Mean classroom attendance per class
- Counts (%) within response categories
- Spearman correlations for non-normally distributed data
- Pearson correlations for normally distributed data
- Linear regression

Results

Course attendance drops significantly over the first year

Average student attendance in first year systems-based courses.

Overall: Attendance versus academic performance

scatterplot for mean course grade versus mean attendance in systems-based OMSI courses with a line of best fit (blue dashed line) based on linear regression analysis (Pearson’s r = 0.17). Black dashed lines represent average course grade (horizontal) and 50% attendance (vertical). Red dots represent students considered “At-Risk” (mean course grade < 75%).

Individual Course: Attendance versus academic performance

Table 1: Relationship between course attendance and course grade in OMSI courses. Positive correlation significant for Neuromusculoskeletal-A, P < 0.05

Figure 2: Scatterplot for mean course grade versus mean attendance in systems-based OMSI courses with a line of best fit (blue dashed line) based on linear regression analysis (Pearson’s r = 0.17). Black dashed lines represent average course grade (horizontal) and 50% attendance (vertical). Red dots represent students considered “At-Risk” (mean course grade < 75%).

Student perception: Lecture capture is more convenient, efficient, and effective compared to class attendance

Student preference for content delivery method

Learning Preference

Conclusions

• Overall no significant correlation between attendance and academic performance, except in one course (NMSK-A).
• Trends have been observed with more “at-risk” students in the low attendance group.
• Research suggests that attendance behavior is likely driven by perception that lecture capture is more convenient, efficient, and effective than classroom attendance.
• Students prefer video podcasts for content delivery.

Acknowledgements

• This work was funded by a 2015 AACOM/OHF Medical Education Research Grant.
• We thank the students at ATSU-SOMA for their participation in this voluntary study.