Absenteeism and Language Learning: Does Missing Class Matter?

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Abstract—In a word, yes. The study determined the relationship between class attendance and mastery of a second language. Instructors kept detailed records of both attendance and classroom-discussed material. In a content-based class, the in-class material exam questions were isolated and the results showed that missing a single class increased the student's likelihood of an incorrect answer by three times compared to a student who attended class when the material was discussed. In a skills-based class, where in-class and outside-class material could not be separated, missing a single class increased a student's likelihood of an incorrect answer seven to eight times that of a student who attended class. Therefore missing classes does significantly affect test performance as well as mastery of the target language and content. These results lead to a number of significant conclusions which have implications for teaching in general, teaching a foreign language teaching in particular, educational policy, the link between class attendance and mastery of course content, and how best to measure the level of that mastery.

Index Terms—attendance, foreign language learning, exam performance, mastery

I. INTRODUCTION

In many educational settings, but particularly in higher education, the importance of attendance has been de-emphasized. Whereas once students automatically failed classes after three absences, now attendance is often considered optional. This change is often justified as a necessary adaptation to the advent of older, over-committed students, on-line courses, and other distance learning options. There is an assumption that class attendance is not absolutely necessary to obtaining mastery of the subject matter. The flexible attendance policy, or indeed the lack of one, is understandably very popular among students. Instructors, on the other hand, have been less pleased by the change, and only recently has hard data (discussed below) on the importance of attendance become available. Previously, most available information on the importance of attendance came from studies conducted in the sciences, economics, and other disciplines where traditional lectures to many students are the norm. In such environments much of the learning is passive, and the related studies, which usually looked at many factors in addition to attendance, have shown attendance to have little effect on student performance. Less studied has been the effect of attendance in smaller, foreign language and language-related classes where much of the learning is active. This paper presents the results of a study on the consequences of student absence from these active-learning classes. Results show that missing classes significantly affects the level of mastery of both the target language and course content as measured by short answer or short essay tests designed to elicit specific information.

II. PREVIOUS RESEARCH

A. Passive Learning in Business and Economica

A few studies such as Hyde & Flournoy (1986), St. Clair (1999), and Rodgers (2002) rejected an attendance-performance link. Other studies, concentrated in economics and business, found only minor gains associated with conscientious attendance. Romer (1993) found that attendance is important, and that the relationship between attendance and performance was greater than that between completing problem sets and performance. Durden and Ellis (1995) found that attendance does matter, but not until a student has missed four classes in the semester. Marburger (2001) found that scores on multiple choice exams were affected by failure to attend classes. He also found that "low levels of absenteeism had no appreciable effect on student learning but that excessive absenteeism had a deleterious impact on course performance" (p.101). He distinguished between student learning and course performance. In a second paper (Marburger 2006), he reported that a mandatory attendance policy brought about only a 2% improvement on multiple-choice exam scores. Halpern (2007) studied 13 factors plus attendance in the context of a course in airport

business management and found a "significant moderately positive effect" (p.11) of attendance on academic achievement, but not enough to recommend attendance policies.

B. Passive Learning in the Sciences

It is when the research turns away from business and economics that the picture begins to change. Gatherer and Manning (1998) found a "weak but statistically significant positive correlation with lecture attendance" (p. 121) among biology students. The correlation was much higher for ethnic minority and non-Anglophone students. Among students in an obstetrics-gynecology rotation, Riggs and Blanco (1994) determined that students who had more than 30% absence from lectures were likely to score in the bottom 15% on exams. The differences among the natures of the subjects and class sizes may account for differing results. A recent meta-analysis by Credé, Roch & Kieszczynka (2010) of a database of 28,034 students from many disciplines found that class attendance was better than any other known predictor of college grades.

C. Active Learning and Attendance

Moving further into the realm of active learning, Colby (2004) studied 178 students in a computing course and formulated two rules regarding attendance. The first rule holds students who do not attend 80% of classes have an even chance of failing. They also have a two-in-three chance of not receiving grades in the top two grade bands. Colby's second rule states that students who do not attend at least 70% of teaching sessions have a two-in-three chance of failing, and a four-in-five chance of not scoring in the top two grade bands (Colby, 2004, sec. 5.1).

Newman-Ford et al. (2008) replicated Colby's findings using an electronic method of monitoring attendance. The team monitored 748 students in 22 modules and found that Colby's 70% and 80% rules stood firm. They also formulated a 90% rule: students who attend less than 90 percent have a one-in-four chance of failing and a three-in-four chance of not obtaining grades in the top two bands (Newman-Ford et al., p.710).

Both Colby and Newman-Ford focused on attendance at lecture classes. Bevitt et al. (2010) conducted the first study of the effects of attendance on students in what they termed high-stakes classes (practicals and seminars, as opposed to lecture classes). Their findings supported the contention of Cleary-Holdforth (2007) in her study of nursing instruction, that the active and practical nature of the subject requires the development of particular skills, and therefore attendance is more important in smaller, practical classes than in lecture sessions. Bevitt's group found that students who attended high-stakes classes less than 90% of the time were "at least half as likely to achieve a 2.1 or 1st level mark, compared to their peers with 100% attendance." (Bevitt, Conclusions, 2.)

D. Active Learning and Language Acquisition

For far too many decades, languages were taught using the grammar-translation method. Students were subjected to traditional grammar lectures on the correct formation of the pluperfect passive subjunctive, as well as written exercises requiring students to conjugate verbs to the point of absurdity. "I shall have been being told, you (sing.) will have been being told," and so on. This kind of teaching has been consigned—deservedly—to the dustbin of education, and it is now recognized that learning another language means active learning, such as practice of vocabulary, constructions, and speaking. For that reason language classes are usually small (25 or fewer students). Classes are active and participatory, and the teacher's goal is for the students to use the target language as much as possible. Ideally, the students speak more than the instructor, and the first language of the students is rarely, if ever, used. Instructors stress attendance for this reason and because language learning is also sequential. Students must be able to think, speak, listen and write, "Gina is musically inclined" before they can attempt, "If Gina were more musically inclined, she would appreciate the need to tune the dulcimer."

E. Attendance and Learning Acquisition

Perhaps the obviousness of the importance of attendance at language classes accounts for the rarity of studies exploring the link between attendance and language acquisition. Hubbs-Tait (2002) reported a link between attendance at Head Start pre-school programs and a test of receptive vocabulary. Becker (2010) found that longer attendance (in months) at preschool had positive effects on German language development for Turkish immigrant children, but not for native German children, and more time spent in high quality preschools had positive effects on both groups. Lamdin (1994) found that better attendance in elementary schools in Baltimore was connected with higher reading and mathematics test scores. Condelli et al. (2002) found that regular attendance in adult ESL literacy programs resulted in improved reading comprehension and oral English skills. These studies all point in the same direction, but what is lacking is a detailed study of the extent to which absence from active-learning classes affects language learning.

F. Determining the Attendance-mastery Link in Language Learning

A common feature of the wider-scope attendance studies is a lack of discrimination among the different vehicles by which students acquire mastery of the subject and how students are evaluated. Some of the commoner vehicles include attendance at classes, labs, lectures, practice sessions, tutoring, reading required and/or suggested materials, and using the internet, to name but a few. Usually, exams and other evaluation instruments measure what students have learned through all the vehicles, both text and non-text related. Accounting students, for example, may be given a multiple

choice test, or they may be given a problem nearly identical to one in their textbook and asked to work it. In the case of the latter, a student who did not attend class when that problem was covered can, by diligent working of the problem outside of class perform very well on that test item. But can that same performance be obtained by the language student? In other words, if a student does not attend the language class in which students learn and practice the third conditional, can he or she backshift the verb correctly to produce a sentence such as, "If I had received the scholarship, I would have gone to medical school" when it comes time to evaluate? When determining the importance of attending language class, the question must be, what is the effect of being physically present in the classroom when specific topics, both text and non-text, are presented? How does presence alone affect students' acquisition of mastery?

III. METHOD

A.   Class Selection and Learning Activities

Obtaining the answer to the above question can only be obtained through several labor-intensive processes. First we selected classes whose active learning activities supported the class objectives. Second, where it was possible, we separated the material which was only available from class attendance from the material that could be mastered using outside-of-class resources (reading the book, for example). Third, daily attendance was taken by calling roll. And forth, after keeping records of class content, we evaluated students' learning. To avoid any mis-interpretation of student learning which might be caused by lucky guesses or the clever use of test-taking strategies, the test questions were carefully designed to elicit specific information or skill use, (short answer or short essay) as opposed to the selection of one option from a list of four or five possibilities. Fifth, attendance at individual class sessions and students' demonstrable knowledge of the material taught in those classes was compared and analyzed question by question.

B.   Participants and Materials for the Historia Y Cultura Anglosajona (HCA) Class

We selected two courses for very careful record keeping. Both were courses taught by two of the authors at the Escuela de Inglés of Universidad Cathólica del Norte (hereafter UCN). All the students spoke Spanish as their first language. The first class, Historia y Cultura Anglosajona (HCA), was a content course which explores the cultural history of the BANA (Britian, Australia, North America) countries and the historical development of the English language. It was taught in English by a native English speaker to second-year university students in the English pedagogy program at UCN. These students were all enrolled in a four-year program to become licensed high school teachers of English as a foreign language (EFL) in UCN. They had all completed one year's intensive English study (24 credit hours of language instruction, plus eight credits of phonetics and eight more of English grammar). In language ability as rated by ALTE (the Association of Language Testers of Europe), and conforming to the Common European Framework, all the students had already attained at a minimum ALTE level of A2 going into the course. This level is defined as "ability to deal with simple, straightforward information and begin to express oneself in familiar contexts" (ALTE, 2008). In actual fact, however, some of the students began the English pedagogy program with a level of ALTE 3 or higher and were therefore more fluent than their classmates who had started their serious English study only a year earlier. It is more realistic to say that most of the students in the HCA course had attained ALTE level B1, described in terms of abilities as "can understand instructions on classes and instructions by a lecturer....can understand basic instructions and messages, for example computer library catalogues, with some help....can write down some information at a lecture, if this is more or less dictated" (ALTE, 2008).

The HCA course used a 600-page English language book and an equivalent amount of material was delivered in class. Students were tested on both the readings and the in-class material. Both sections of HCA met twice a week over a 15-week semester, each class lasting 90 minutes. In addition to quizzes over the assigned readings and student presentations on historical figures (all in English), students were evaluated by means of a mid-term and a final exam. These two exams constituted 40% of the final grade. Fifty students began the course. At the end of the semester final grades were recorded for 35 students, but some students, though they officially withdrew from the course, continued to attend, however sporadically, and took the exams. Exam data was collected for 43 students.

C.   Participants and Materials for the English I Class

The second course selected for the study was English I, a first-semester course for undergraduate students studying in other programs at UCN. These students were required to take English in order to graduate. English 1 was a skills class (listening, speaking, reading and writing), taught by a native Spanish speaker with an ALTE 5 level (the highest level of the scale) of English. At the beginning of the class the students took a proficiency exam. Those who obtained a minimum score were exempted from the course. Therefore the English level of the students who were not exempted at the beginning of the semester was uniformly very low to non-existent. At the end of the course, the level of English of those who passed the course was ALTE 1a.

English 1 met two times per week during the 15-week semester, for 90 minutes each time. The class covered the first 11 of the 12 chapters of the textbook, an internationally recognized text aligned with the Common European Framework. The first five chapters were covered for the mid-term exam and chapters six through eleven for the final exam. During class the instructor conducted activities including listening, repetition, working in groups, reading and answering exercises, making sentences, re-ordering mixed-up sentences, grammar exercises, true or false activities, and

making predictions from photos. Students also had access to the book's student CD which includes practice materials and some of the conversations used for listening practice, and they were required to attend the language lab at least twice during the semester. Of the 28 students registered at the beginning of the course, five were exempted based on their exam scores. Three never came to class a single time. Twenty students completed the course. The data from these 20 were included in the analysis.

More information had to be collected and prepared. Both instructors took attendance every class by calling the roll. They also kept very detailed notes about what was done and what material was covered each class period.

D. Specific Knowledge Exam Questions.

In order to evaluate how well the students had mastered the material, the exam questions needed to elicit specific knowledge; hence the instructors wrote tests consisting of short answer and short essay questions which required the students to provide the correct answer from what they had learned, without hints, associations, or a list of options from which to choose. Correct answers to exam questions were our only criterion for determining mastery. Examples from the HCA exams are below:

1. Explain how, in Chaucer's time, a boy could learn how to become a dyer of cloth and eventually be admitted to the guild.

2. In class we discussed four convictions which the Puritans had. Briefly describe two of them.

3. Explain the difference between colonialism and imperialism.

4. Define the term WASP.

Below are some questions from the English I exams:

Put the words in the correct order to form sentences.

1. cleans / She / bedroom / her / always

2. I / do / my / homework / have / always / after / I / dinner

Answer the following questions according to the text [provided on the exam paper].

1. What is the meaning of "TIP"?

2. When do you tip?

E. Data Acquisition Methods

The date on which the material corresponding to the question was presented in class was noted on the teacher's copy of the exam. For the HCA class, it was also noted whether or not the information required to answer the question correctly was available from the required readings. These questions were omitted from the analysis. Only questions dealing with in-class material were counted in the analysis. Since English I class activities were strongly related to the textbook, such discrimination was not possible for the English I exams. After all the exams were corrected, we created Excel spreadsheets and recorded each student's results. We then listed each question by number. For each question we recorded the date on which the material corresponding to the question had been covered in class. Next we recorded whether the student had answered each exam question correctly (C) or wrongly (W). If a student was present on the day the material of the question was covered, the C or W was recorded in black, if the student was absent from that class, the C or W was recorded in red.

Once everything was recorded, we were left with two incomparable sets of data. For the HCA class, we eliminated all test questions whose answers could be found in the course reading material from the analysis. This left 35 HCA test questions (20 from the mid-term and 15 from the final). Forty-two students took the HCA mid-term, and 43 students took the HCA final. In the English 1 class, 20 students took the mid-term of 60 questions. Eighteen students took the final exam (2 students chose not to come to the test). The final exam consisted of 64 questions. All 124 questions covering both text and non-text material in the English I exams were included in the analysis.

IV. RESULTS

A. Data Tables from Examination Results

The results of the analysis are presented in the four tables below for both HCA and English I classes. For each class, there is one table for the mid-term and one for the finals. For each class, the initial analysis consisted of counting the number of correct (C) and wrong (W) responses for each exam question for both the present-students (P) and the absent-students (A). Recall that for the HCA course only the non-textbook questions were counted, whereas for the English I all questions were counted. For example, in Table 1 there were 245 wrong responses to all in-class exam questions by present-students and 71 wrong responses by absent-students. When it came to answering non-textbook questions correctly, however, there were 284 correct answers given by the P students, but only 28 correct answers given by the A students.

TABLE 1.
HISTORIA Y CULTURA ANGLOSAJONA MID-TERM

	C	W	C/W ratio	P/A
P	284	245	1.2	3.
A	28	71	0.4	-

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TABLE 2
ENGLISH 1 MID-TERM

	C	W	C/W ratio	P/A
P	488	302	1.6	8
A	25	110	0.2	-

TABLE 3.
HISTORIA Y CULTURA ANGLOSAJONA FINAL

	C	W	C/W ratio	P/A
P	255	264	0.96	3
A	39	114	0.34	-

TABLE 4
ENGLISH 1 FINAL

	C	W	C/W ratio	P/A
P	360	168	2.1	7
A	40	133	0.3	-

Chi-squared analysis applied to each table shows there is a significant difference between the present- and absent-students' response distribution. The two sets of numbers were not randomly drawn from the same population. The second and third columns and the two rows form a 2x2 contingency table from which a chi-square value was computed. All the chi-square values for the four tables were in the low 20s with an associated $p<0.001$; hence there is less than a 1 in 1000 chance the numbers were drawn from the same population. At this point we argue that there is a significant difference in the responses of the present- and absent- students.

B. Determination and Significance of the P/A Values

The data in the second, third, and fourth columns is incomparable since the table entries are dependent upon the number of students in each P and A group and on the number of exam questions. Comparison of the table values within one class or between classes is misleading. Therefore we needed an analysis to determine parameters on a per-student basis so the P and A group data could be compared in a meaningful fashion. We did so using the following scheme.

First, for each P and A group in a class, we calculated the C/W ratio, the ratio of correct (C) to wrong (W) responses, which is presented in the fourth column of each table. For example, for each P group, the C/W ratio is equivalent to the ratio of the number of correct responses by present students to the number of wrong responses by present students. The C/W ratio is independent of the number of students in the group. For the P group in Table 1, the C/W ratio is 1.2 (284/245). Hence, for each wrong response there were 1.2 correct responses.

Second, to compare the numbers of responses between groups, we calculated the P/A fraction as shown in each table's second row and last column. The P/A fraction is the C/W ratio for the P group divided by the corresponding ratio of the A group. From Table 1, the P/A fraction is 3 (1.2/.4) which means a typical P group student obtained 3 times the number of correct responses compared to the typical A group student.

V. DISCUSSION, P/A VALUES, AND LANGUAGE MASTERY

P/A Values for Each Class

These results allow us to conclude that attendance has a profound impact upon exam performance and mastery of the target language. Every time, students who were present performed better on test questions and demonstrated their knowledge and their language mastery better than those who were absent. We can also conclude that the nature of the course is also a factor in the importance of attendance. In the HCA course, a content course using the target language which also involved a greater amount of passive learning, present students were 3 times more likely to answer an exam question correctly than their class-skipping peers. In English I, where the class consisted almost exclusively of active learning, present students were 8 times more likely to answer correctly than absent students. It is clear that even a very few absences were detrimental to mastery in both courses, but more so in the active learning class. We also concluded that students in both courses who failed to attend classes did not recover the material they missed. This failure is more pronounced in the course with the greater amount of active learning.

VI. IMPLICATIONS

Our conclusions have implications for the acquisition of language mastery, the evaluation and analysis of mastery, and attendance policies. Though the number of participants (63) in this study is comparatively small, the study is statistically significant and it demonstrates that students must attend all classes, or as many as possible, if they are to master the target language or learn course content which is not to be found in outside-of-class resources.

The strength of our results is due in large part to our use of labor-intensive methods of attendance monitoring (roll taking), exam construction (short answer & short essay) and marking, and data analysis. In order to obtain meaningful results, attendance must be taken accurately, whether that be calling roll attentively or by electronic means. Self-reporting, as Colby (2004) pointed out, is unreliable. Second, exam formats requiring students to answer questions

purely from of their own knowledge must be preferred to multiple-choice exams and their concomitant guess factor. Multiple-choice tests are much faster to mark, but our results from short answer or short essay questions give more precise student learning results than previous studies using multiple-choice exams. Lastly, it is only possible to determine the extent of the damage done by missing even a single class by the methods of comparing attendance (roll call)and proofs of mastery (correct exam answers).

VII. CONCLUSIONS

This study has demonstrated that students' absence from class seriously affects their acquisition of mastery of the material and of the target language. It also demonstrates that short answer and short essay test questions provide an excellent sampling of mastery. We believe that students should be made aware of the consequences of absenteeism, and that thus informed, will improve their attendance patterns voluntarily. We also hope that it will be considered by policy-makers, administrators and others responsible for implementing, changing, and monitoring attendance policies.

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