Systematic Causes behind Attendance and Non-Attendance at Lectures

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Abstract

Systematic causes behind attendance and non-attendance at business school lectures were investigated. The design consisted of a survey with open-ended questions analyzed by attributional coding and statistics. More than half of the students systematically placed the causes behind attendance and non-attendance external to themselves, in particular when it came to non-attendance. The attributional styles identified appeared stable and global (important also to other outcomes than attendance/non-attendance). Our results are explained within theories involving the concepts of attribution, learned helplessness, self-control, locus of control, and self-efficacy. By using this conceptual framing, our results indicate that mandatory attendance is necessary in order to counteract extensive absenteeism at lectures. Additionally, students can learn to take control over their attendance by mind-set interventions.

Key words: Attendance, Non-attendance, Systematic causes, Attribution, Mandatory attendance, Mind-set interventions

Introduction

Research shows that students who attend their classes tend to be more successful in their studies than students that are non-attendant (Massingham and Herrington 2006, Robert 2007, Tinto 2016). However, non-attendance at lectures appears to be a growing trend (Massingham and Herrington 2006, Robert 2007). The objective of the present study was to clarify possible systematic causes behind attendance and non-attendance at business school lectures. The term "systematic" denotes that we search for common attributional patterns determining if students attend lectures or not.

Attributions refer to how we explain our own behavior, other people's behavior, and in general, perceptions in life (Silvester 2004). Shortly, an attribution is a casual explanation (Peterson et al. 1993). The way individuals perceive the cause of an event influence upon their decisions and behavior. The literature suggests many possible reasons for non-attendance at lectures. Frequently expressed reasons are poor lecturing, bad timing of lecture, and part-time working (Kottasz 2005). Research indicates, however, that the reasons for being absent are more latent than directly expressed by interviewed students (Kottasz 2005). For example, extrinsically motivated students, i.e. who are not acquiring knowledge for its own sake, tend to drop lectures more than intrinsically motivated students (Kottasz 2005).

In the present study, we do not focus on the students' directly expressed attributions, but on the deeper content of the attributions in a self-control perspective. Based on the outlines of

Baumeister and Tierney (2011), Bandura (1997), and Peterson et al. (1993), we define "self-control" as being able to regulate ones thoughts, emotions, and behavior in the face of temptations and impulses. "Self-control" and "learned helplessness" represent incompatible phenomena (Abramson et al. 1978, Peterson et al. 1993). While self-control implicates volitional regulation of thoughts, emotions, and behavior (Baumeister and Teierney 2011, Peterson et al. 1993), learned helplessness implicates deficits in thoughts, feelings, and actions (Peterson et al. 1993). Operationally, learned helplessness is defined by the fact that nothing you do alters the event (Seligman 2011). Learned helplessness was originally operationalized by the introduction of the causal dimensions external vs. internal, unstable vs. stable, and specific vs. global (Abramson et al. 1978, Peterson et al. 1993). The model of learned helplessness, however, has been extended to also include the dimensions uncontrollable vs. controllable and universal vs. personal (Abramson et al. 1978, Peterson et al. 1993). This has made it possible to investigate how attributional or explanatory styles (Peterson et al. 1993) are distributed among people in the perspective of self-control versus learned helplessness. Concerning academic achievement, Peterson et al. (1993) describes several studies showing that students experiencing self-control are performing substantially better than students suffering from learned helplessness.

The overlap between attribution theory and the concept of locus of control has been discussed by Peterson et al. (1993). Causal explanations and locus of control overlap with each other, yet they have slightly different foci. The similarity is that both are cognitive constructs that refer to the relationship between our actions and outcomes. Both influence the vigor or passivity with which we handle events of life. The difference is that locus of control as outlined by Rotter (1966, 1975), is focused on a belief about the nature of reinforcement, i.e. about rewards or punishments as a consequence of our actions. Causal attributions are judgments about the causes of events (Peterson et al. 1993). The concepts of learned helplessness and self-control concern both the cause and the outcome of the attribution. Learned helplessness is by definition the response to causes perceived as external and uncontrollable (Peterson et al. 1993). Self-control is associated with causes being internal and controllable. In addition to the attributional styles outlined above, the event itself may be such that it objectively influences the causal explanations (Peterson et al. 1993). It is important to have this in mind when studying attributional styles. It is also relevant to have in mind that the theories of attributional styles and locus of control may be seen as theories of motivation (Eccles and Wigfield 2002).

In the present study, we investigate the students' attributional causes by coding them along five attributional dimensions defined by Sylvester (2004). The intention is to get a deeper understanding of why students attend or not attend lectures. Further, we use the concept of attributional style (Peterson et al. 1993) to transfer the results from the attendance/non-attendance survey to more general attributional style patterns among students.

Method

The investigative design consisted of a survey with two open-ended questions, which were analyzed by attributional coding (Leeds Attributional Coding System (LACS)) (Silvester 2004) and multivariate statistics (Wiik 2011).

Attributional coding of open-ended questions

The two open-ended questions were the following: (i) What makes you attend lectures and (ii) What makes you not attend lectures? Items concerning class level, educational program, gender, and age were also included. The questionnaire was mailed to a population of about 600 full-time bachelor students distributed on four different study programs. The response rate was 30 %, i.e. 179 students completed the questionnaire. Of these, 67 were first year students, 58 second year, and 53 third year students. The investigation was performed midway of the fall semester. One student had not ticked the question about class level. The individual respondent was allocated a code to identify key features for the purpose of direct visual interpretation in plots like the ones shown in Fig. 1. Each code consists of serial number, gender (F/M), age (three groups: 19-24, 25-30, above 31), class level, and educational program.

By attributional coding, the textual data from the two open-ended questions were transformed to scale numbers using five causal dimensions or variables. These were: Unstable - Stable, Specific - Global, External - Internal, Universal - Personal, and Uncontrollable - Controllable (Silvester 2004). These dimensions represent an operationalization of the super-dimension Learned helplessness - Self-control. The dimensions were coded on a three-point scale on which external, uncontrollable, universal, specific, and unstable were coded 1. The two open-ended questions were coded and analyzed separately.

Usually, the first part of attributional coding consists of extracting attributions and thereafter identifying "Agent" and "Target" for each attribution (Silvester 2004). The "Agent" is the person, group, or other entity nominated as the cause of the attribution while "Target" is the person, group, or other entity mentioned as the outcome of the attribution. In the current study, all the answers to the two open-ended questions are "Agent" or cause of the attribution. The target or outcome is fixed on both questions, respectively, i.e. "attendance" on the first question and "non-attendance" on the other.

In addition to coding of the open ended questions, we also coded each cause (agent) with respect to being attributed to "self" (1) or "others/surroundings" (0). By this we could quantify how many students attributed to themselves or others/surroundings on attendance and non-attendance, respectively.

Statistical analyses of the coded attributions

The coded data from the two open-ended questions were analyzed by use of the statistical program Sirius (Pattern Recognition Systems AS, Bergen, Norway) for multivariate analyses. The reports from Sirius were transferred to Excel for plotting. Additionally to Sirius, we used Statistical Package for Social Sciences (SPSS) (IBM Corp., Somers, NY, USA) for traditional

statistical analyses such as t-tests, analysis of variance (ANOVA), and Pearson and Spearman correlations.

At first, the multivariate method Marker Object Projections (MOP) (Wiik 2011) was used for calculations of the two indexes "Attendance Index" (AI) and "Non-Attendance Index" (NAI). Each index is a function of all the five attributional dimensions. The indexes were made possible due to introduction of two fictive respondents into the data matrix before doing the MOP. The one fictive respondent was allocated the value 3 on all dimensions, representing an "ideal" student taking complete responsibility for attending or non-attending. The other fictive respondent was allocated the value 1 on all dimensions, representing a student placing the responsibility for attending or non-attending on other people or the surroundings. By introducing these fictive respondents and selecting the "ideal" student as "Marker Object" in MOP, all real respondents could be ranged on the AI and NAI scales each going from 0% (the student blaming others/surroundings) to 100% (the ideal student). The AI and NAI indexes were calculated on basis of the systematic variance of the respondents' coded answers. AI and NAI explained 84% and 76% of the total variance in the data matrix, respectively. These high percentages make the indexes quite suitable as dependent variables.

The indexes AI and NAI were used as dependent variables of the regression analyses performed by Partial Least Squares Projections to Latent Structures (PLS) as described by Wiik (2011). By this analysis, we determined the attributional dimensions most systematically influencing the attendance and non-attendance at lectures. The results of the PLS analyses were visualized by two kinds of plots representing two sides of the same story. The one plot shows the distribution of students (score plot) as they contribute to the pattern of variables shown in the other plot (loading plot) (Fig 1).

The indexes AI and NAI were used also as dependent variables of the regular, linear regression analyses automatically generated when performing PLS by Sirius.

The validity of PLS included the regression models were evaluated by the coefficient of determination, R^2 and standard error of cross-validation (SECV). R^2 indicates the proportion of the variance that is predictable from the independent variables. SECV indicates how well a model can be generalized to an unknown dataset (Wiik 2011).

Results

Validity of the PLS models

Because the dependent variables AI and NAI were calculated on the basis of the respective independent variables, the R^2 of the regression models became very high, i.e. 1 for the attendance model and 0.999 for the non-attendance model. The SECV were 0.33% for AI and 0.86% for NAI. Here the percentage unit is the scale unit of AI and NAI. The high R^2 and low values of SECV confirm a very high predictive power of the regression model. In this paper we focus on the pattern of the first component of PLS, which is describing more than 99% of the variance of AI (and 85% of the variance of the independent variables) and more than 99% of the variance of NAI (and 77% of the variance of the independent variables). Total variance

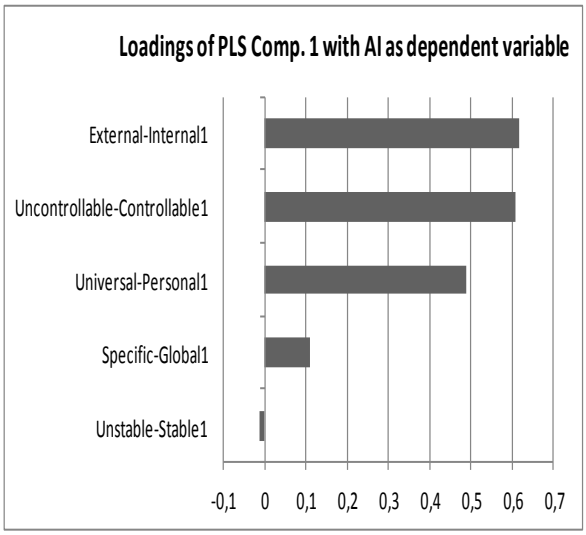
explained by PLS was 99.99% for the dependent variable AI and 95% for the respective independent variables. Total variance explained by PLS was 99.93% for NAI and 82% for the respective independent variables.

Systematic variance along dimensions

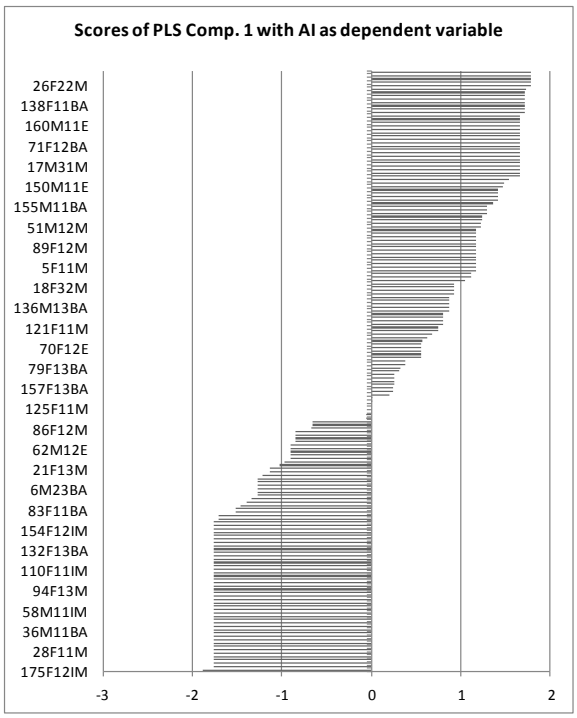
The three dimensions varying systematically both with respect to AI and NAI were External-Internal, Uncontrollable-Controllable, and Universal-Personal (Fig. 1). The one part of the pattern was formed by students who simultaneously attributed the cause as internal, controllable, and personal. The other part of the pattern was the opposite and formed by students who placed the causes externally to themselves and at the same time perceived the causes as uncontrollable, and as universal i.e. as having nothing personally to do with themselves. This two-flank pattern was the same for both attendance and non-attendance. For both AI and NAI, the dimension Unstable – Stable varied very little and had mean values very close to the maximum value of 3. For AI and NAI the mean values were 2.94 (SD 0.22) and 2.93 (SD 0.26), respectively. The dimension Specific-Global had the second highest mean values both for AI and NAI with respective values of 2.18 and 2.03. The positive co-variation between "Specific – Global" and the three dimensions "External - Internal, Universal - Personal, and Uncontrollable – Controllable", indicate that self-control is a more general quality than learned helplessness.

Fig. 1. For the loading plots, the dimensional labels to the right (internal, controllable etc.) correlate positively with AI and NAI, respectively. The students to the right (positive scores) in the score plots are the ones who are attributing internally etc. The dimensional labels to the left (external, uncontrollable etc.) correlate negatively with AI and NAI. The students to the left (negative scores) in the score plots are those attributing externally etc. Respondents were allocated a code to identify key features for the purpose of direct visual interpretation in the plot: <serial number>, <gender (F/M)>, <age (assigned to 3 age groups)>, <class level>, and <educational program>. Only a few respondent codes have been included in the plot due to limited resolution. (a) The loadings of the first and major PLS component with AI as dependent variable (explained variance (independents): 85.2%; explained variance (dependent): 99.4%). The dimensions have been marked with "1" to indicate that this is the attendance analysis. (b) The scores of all the 179 respondents who together create the pattern shown in (a). The respondents with the highest positive score (represented by 26F22M) are the ones expressing the most internal, controllable, and personal attributions. The other respondents with positive scores are ranked in descending order of importance to the pattern shown in (a). Correspondingly, the respondents with the negative scores are expressing the most external, uncontrollable, and universal attributions. The plot visualizes that the students are equally distributed with respect to internal, controllable, and personal attributions on the one hand versus external, uncontrollable, and universal ones on the other. Plots (c) and (d) show the same results as (a) and (b), respectively, however with NAI as the dependent variable (explained variance (independents): 77.0%; explained variance (dependent): 99.4%). Plot (d) visualizes that the majority of the students attributes to external, uncontrollable and universal causes with respect to non-attendance. The dimensions have been marked with "2" to indicate that this is the non-attendance analysis.

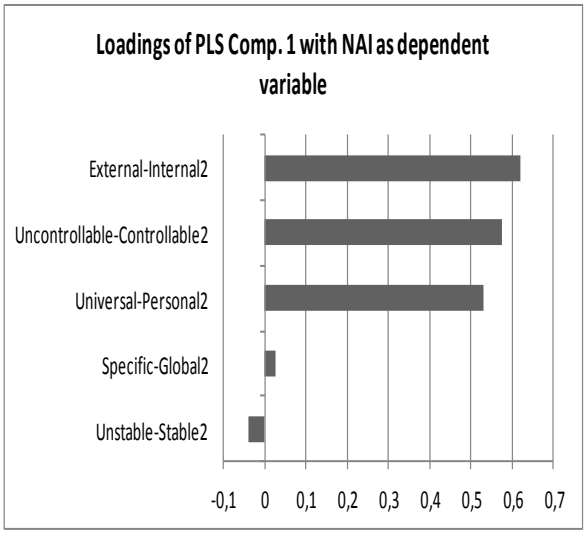
(a)



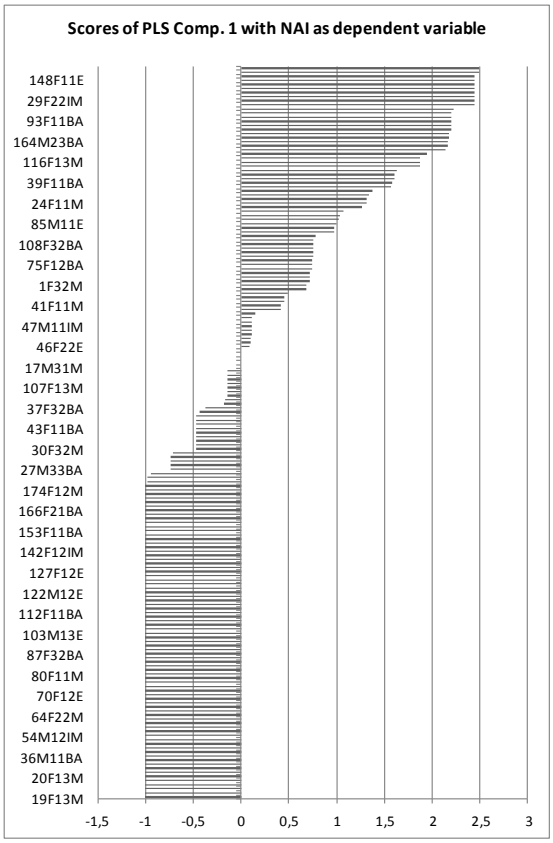
(b)



(c)



(d)



In addition to the PLS analyses, regular linear regression analyses were performed both for AI and NAI. The regular linear regression analyses do not differentiate between different patterns in the data, but give an overview of how each independent variable individually covariate

with the dependent variable. The patterns recognized by PLS are created on basis of both the co-variation between the individual independent variables and their co-variations with the dependent variable. Below are the linear regression analyses for AI and NAI.

AI = -49.9 + 13.1 · External-Internal + 12.2 · Uncontrollable-Controllable + 13.1 · Universal-Personal + 10.8 · Specific-Global + 1.0 · Unstable-Stable

NAI = -46.8 + 12.5 · External-Internal + 14.1 · Uncontrollable-Controllable + 13.6 · Universal-Personal + 7.7 · Specific-Global + 0.7 · Unstable-Stable

For all the regression coefficients shown above, $P<0.001$. The R^2s were 1 for both AI and NAI. The relations between the independent variables are somewhat different in the regular regression analysis as compared to the respective first PLS component (Fig 1). The reason why is that the regular regression analysis incorporates more than one PLS-component. We have only shown the PLS components 1 for both AI and NAI in Figure 1 since these components explain most of the systematic variance in the data.

Concerning attendance, 50% of the students attributed to themselves. Regarding the question about non-attendance, only 20 % of the students attributed clearly to themselves. These percentages were calculated on basis of coding each cause (agent) with respect to being attributed to "self" or "others/surroundings". The distribution of attributions on "self" and "others/surroundings" is also indicated in Fig. 1.

The most frequent external, uncontrollable, and universal cause of both attendance and non-attendance was the perceived qualifications of the lecturers with respect to both professional skills and pedagogy. Among students attributing to themselves, motivation towards learning was the most frequent cause of attendance, while more effective learning when studying on their own, was the most frequent cause of non-attendance. Examples of internal and external attributions of attendance and non-attendance are given in Table 1.

Table 1. Representative examples of internal and external attributions of attendance and non-attendance.

Attendance		Non-attendance	
Internal	External	Internal	External
Because I want to learn	Due to lecturer and content	When I oversleep	Because lecturer only repeats the curriculum
Because I want to spot important parts of the curriculum	Due to inspirational lecturers	When I am demotivated	Because the lecturer only reads from PowerPoints
Because I learn more easily compared to studying on my own	Due to engaged lecturer	When I am learning better on my own	Due to boring lecturers

The t-tests demonstrated that there were no significant differences between female and male students concerning AI and NAI. The ANOVA demonstrated that neither AI nor NAI were significantly influenced by age or class level.

The Pearson correlations between AI and NAI were most significant at class level 1 (Table 2).

Table 2. The Pearson's correlation product-moment coefficients between the Attendance Index (AI) and non-attendance index (NAI). Spearman rank correlations coefficients are given in parentheses.

Class level	N	Mean AI (%)	Mean NAI (%)	Pearson correlation, AI and NAI (Spearman's rho)
1. year	67	58	37	0.356** (0.368**)
2. year	58	50	32	0.272* (0.238)
3. year	54	51	34	0.306* (0.293*)
Total	179	53	34	0.317** (0.315**)

*: Correlation is significant at the 0.05 level (2-tailed)
**: Correlation is significant at the 0.01 level (2-tailed)

Discussion

Non-attendance at lectures has been a trend for the last decades (European First Year Experience (EFYE) 2016, Kottasz 2005, Massingham and Herrington 2006, Robert 2007). According to Massingham and Herrington (2006), value perceptions are associated largely with the teaching process and the lecturer's competence. This is in accordance with our results showing that the perceived pedagogic and professional skills of the lecturers were the most frequent causes of attendance. Concerning non-attendance, dissatisfaction with the pedagogy was a frequent causal attribution. Students are experiencing the causes associated with lecturers as "true", but still the answers reflect what Peterson et al. (1993) designate learned helplessness and Rotter (1966, 1975) designates external locus of control. Since the students regularly give formative and summative evaluations of pedagogy and lecturing included the professional skills of the lecturer, they objectively have the opportunity to influence their lectures. They have also the opportunity to give feed-back to both lecturers and administrative personnel informally or formally every time. Objectively, they are therefore not helpless.

According to Baumeister and Tierny (2011), self-control is one of the most influential personal qualities predicting positive outcomes in life, included successful educational outcome. The concept of "self-control" is tightly related to the concepts of "locus of control" which may be external or internal (Rotter 1966, 1975), self-efficacy (Bandura 1997), attributional style (Peterson et al. 1993), and learned helplessness (Abramson et al. 1978, Peterson et al. 1993). Regarding these concepts and the respective models/theories, self-control, strong self-efficacy, internal locus of control, and an internal attributional style turn out as being most successful in studies and life in general. The five-dimensional attributional styles referred to above (Abramson et al. 1978, Peterson et al. 1993, Silvester 2004) for

simplicity "helpless vs. self-controlled", are presented as stable and global (general). The "locus of control" theory, which has been categorized as a personality theory (Spector and O'Connell 1994), supports the stability and general nature of attributional style. Our results show that both the helpless and self-controlled styles are characterized by stability and by being global. The fact that all the attributional styles turned out as global, indicates that the styles concerning attendance and non-attendance are transferable also to other outcomes. According to Peterson et al. (1993), in spite of being stable of time, explanatory styles may be changed and new ones learned. Our results showing that the mean values of AI and NAI are getting lower after the first year, may indicate that helplessness is learned during the first year.

Previously, explanatory style for good events has been described as independent of style for bad events (Peterson et al. 1993). In our study, attendance may be characterized as a good event and non-attendance as a bad one. This distinction, however, is not absolute since some students seem to evaluate non-attendance as a neutral choice, e.g. the ones answering that they are learning better on their own (Table 1). This may explain a fairly high correlation (0.317) between AI and NAI ($P<0.01$). Since the attributional styles turn out as global, our results also indicate that some students have the same attributional style irrespective of good or bad events. This is in harmony with the "locus of control" theory as discussed by Martin et al. (2013).

Research indicates that the student mass is somewhat in denial of their negative attitudes against academics, academia and attendance (Kottasz 2005). Causes perceived as external, uncontrollable, and universal may function as a strategy to leave a person's self-esteem intact (Peterson et al. 1993). Such causal attributions may be used to hide the negative attitudes mentioned by Kottasz (2005) from entering consciousness. As discussed by Kottasz (2005), these attitudes may indicate that students are not getting the type of educational training that is needed to progress.

Educational implications

Since at least half of the students were inclined to attribute attendance and especially non-attendance externally to themselves, indicate that mandatory attendance is necessary in order to counteract extensive absenteeism at lectures. This proposal is based on the fact that both attributional style and locus of control turn out as very stable characteristics. Mandatory attendance can be executed by having grades that are dependent on attendance, e.g. 15% of the grade may be a direct function of attendance. Mandatory attendance concepts have been practiced at many studies and universities for years.

In addition to mandatory attendance, mind-set interventions as exemplified by Paunesku et al. (2015) are recommended to increase motivation for attendance. The mentioned interventions concern how schoolwork can (i) stimulate cognitive functioning and (ii) help students to accomplish meaningful, beyond-self life goals. The concepts of attributional styles, locus of control, self-control, and learned helplessness may naturally be integrated as theoretical framing of these interventions. As mentioned by Kottasz (2005), students may be in denial of their negative attitudes against academia and attendance. Such negative attitudes towards

external conditions will by nature give rise to external attributions. Further, people's causal explanations for bad events affect their response to these effects with regard to cognition, emotion, behavior, and by this motivation. Since both the attitude and the subsequent attribution is unconscious, making the process conscious in itself, represent a measure to obtain attendance.

Conclusion

About half the students attributed internally and half externally with respect to attendance at lectures. Regarding the question of non-attendance, only 20% clearly attributed internally. Our results indicate that a substantial part of students suffers from learned helplessness. In spite of this characteristic being rather stable, it can be changed. It is of utmost importance that attendance and self-control are included as an essential part of the students' first year experience.

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