

## HOW TO BE A SUCCESSFUL TEACHER: A STUDENT'S VIEW

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**Abstract** *¾ In this article we present a study of the characteristics of a successful professor whom the students commend. The study is based on a questionnaire that evaluates the teacher's classroom performance according to the student. Statistical multiple regression analysis indicates relevant questions considered by the student, in order to classify the teacher's success, as well as to recommend him or her to other students. Approximately four thousand students were interviewed, involving 111 college teachers in 335 different sections of the Exact Science Centre of one of the four greatest private universities in south Brazil.*

**Index Terms** *¾ Teacher's evaluation by the student; Statistical analysis on teaching performance.*

### INTRODUCTION

To seek more quality in the academic life it is useful to know the most important characteristics of a professor's performance that makes the students see him or her as a successful teacher and compel the students to recommend that teacher to other students.

To know the most important characteristics of the performance of a professor which allows the student to judge him as good or bad, and that are related to whether or not the student recommends this professor can be useful in the search for academic excellence.

This study comes from research about students' assessment of professors performed at the University "Vale dos Rio dos Sinos" (UNISINOS) [3,4]. This is a topic that has become very popular in learning institutions, especially at universities. Knowledge about the evaluation has also become of interest to the professor himself, since this information is no longer seen as a threat. The professor can adapt his performance in the classroom according to the results of the assessment, which in turn could enhance his professional performance and the teaching/learning process.

The studies measuring the professor's performance according to student's view are usually based on a questionnaire that collects the student's opinion about the professor's performance in classroom. Various researchers have been dedicating their time to this topic [4, 5, 6]. These researchers have been presenting studies and instruments in this area, realized in big South Universities like UFRGS, PUCRS and UNISINOS, showing the validity of these instruments.

The current study is based on research conducted by PINENT[4] involving 111 professors teaching classes in the

Exact Science Center of UNISINOS (approximately 25 thousand students). These professors belong to various departments such as Physics, Chemistry, Mathematics, Statistics and Informatics. About four thousand students in 355 classes answered approximately seven thousand questionnaires.

### THE INSTRUMENT

The evaluation instrument is a 40 item questionnaire (five alternatives per item). The first 30 items (see **appendix 1**) deal with the characteristics of the professor's performance in the classroom, followed by 10 additional questions, including a student self-evaluation. The first thirty items intend to measure the competence of the professor in lectures and the last ten items are important for the validity of the questionnaire, as well as providing additional information.

The elaboration of the questionnaire was based on a variety of instruments, but mainly in the article by Silveira and Moreira [6]. Each item refers to a characteristic of the professor and the student will choose the one that best expresses his/her opinion. The alternatives are presented in decreasing order from the best opinion to the worst according to the student. This can be illustrated by question two in the questionnaire:

**02.** How do you feel about the knowledge your teacher has on the contents that he or she are teaching?

- (a) exceptional knowledge;
- (b) good knowledge;
- (c) fair knowledge;
- (d) lack of knowledge;
- (e) no knowledge;

### QUANTIFYING THE ANSWERS

The alternatives of the items are on a decreasing scale, so that the first alternative (a) is always the most favourable and the last one (e) the least favourable. The student was informed of this prior to answering the questionnaire. The alternatives were quantified in the following manner: a = 5, b = 4, c = 3, d = 2 and e = 1.

The scores given by a student in the first thirty items were added, resulting in a total score that intends to represent, in a general sense, the performance of the professor in a lecture class. Thus, one professor will obtain a total score between 30 (1x30) as a minimum, and 150 (5x30) as a maximum. Naturally, the closer the score to 150, the

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best was his evaluation by the students. Furthermore, he will be able to know about his average performance in each item, for each student or his group of students (class).

The results of the performance of the 111 professors, as well as the study on validity and internal validity of this instrument, can be found in PINENT [4] and PINENT and Silveira and MORAES [5]. The present study uses the last study to obtain other analyses, making use of only the first 30 items.

### MULTIPLE REGRESSION ANALYSIS

The data was reorganized from the average scores obtained by the professors, by item and by class. Thus, the matrix obtained was used to analyse the relationship between the general opinion the student has about his professor and the characteristics presented by his performance in the classroom. The number of answering students was weighted by the score given in each item. Professors with more than one class had the score given by the average score between the classes. The multiple regression analysis was performed with the SPSS statistical program.

The studies on internal validity of the instrument were repeated, with a matrix of data in this new situation. The Cronbach alpha coefficient [2] for the 30 items involved was as high as 0,97 and in the examination of the item/total correlation no item solely was unsatisfactory (appendix 2).

A content examination indicates that there are two items capable of explaining the global performance of a professor: item 29 which states: "The professor is successful in teaching the course" and the item 30 stating: "If my colleagues asked my opinion about registering with this professor". After that was perceived, two multiple weighted regression analysis were made, using the "stepwise method" relating each of these two items with the other 28 items.

In the procedure, the dependent variable (item 29 or 30) is expressed as a linear combination (variate) of the independent variables (other items). The weight that each independent variable has in the linear combination results from the maximization of the linear coefficient between the dependent variable (item 29 or 30) with the variate [7].

The following tables (1 and 2) present the simple correlation coefficient as well as the standard regression (regressor) of the items that remained in the regression equation by using the stepwise procedure. This method removes the independent variables that do not contribute to explain the dependent variable in the regression equation [1], keeping only those that are statistically significant at the 5% level of significance. The weight of each variable (item) entered in the regression equation is represented by the value of the standard regressor and these allow the comparison of the relative importance of each item to explain the dependent variable. In the next section the results for each case are presented.

### MULTIPLE REGRESSION WITH ITEM 29 AS THE DEPENDENT VARIABLE

This item has the following composition:

- 29.** The professor is successful in teaching the course.
- (a) very good at teaching the course;
  - (b) good at teaching the course;
  - (c) average teaching;
  - (d) poorly teaches the course;
  - (e) badly teaches the course

The items (independent variables) that compose the regression equation by the stepwise method are listed in table 1, in decreasing order according to their weight (standard regressors), allowing to perceive their order of importance. The third item is the most important followed by item 16 and four other items. "Good presentation of the contents" and "competence and security in explaining the contents" are the most important aspects considered by the students to characterise a successful professor. The value 0,98 for the multiple correlation coefficient inform us that these nine items, as a set, have a strong explanation power for the professor's success.

**TABLE 1**

EXPLANATORY POWER OF THE SET OF NINE ITEMS OVER ITEM 29: "THE PROFESSOR IS SUCCESSFUL IN TEACHING THE COURSE"

ITEM	r	$\beta$
03: Presents the content in general.	0,95	0,37
16. Is confident in answering the questions	0,81	0,14
04. Explains the principles and basic concepts of the course.	0,94	0,13
26. Makes use of examples and illustrations to present the content.	0,82	0,10
27. Makes good use of the board.	0,75	0,10
28. Makes exams compatible with the given content.	0,67	0,08
05. Teaches the class with happiness and enthusiasm.	0,59	0,07
19 Enjoys teaching the class.	0,80	0,07
09. Expresses concern about the learning process of the students.	0,74	0,06
R = 0,98		

**r** - Correlation coefficient of the item score with item 29.

**b** - Standard regression coefficient of the item score with item 29.

**R** - Multiple correlation coefficient of item 29 score with all items involved.

### MULTIPLE REGRESSION WITH ITEM 30 AS A DEPENDENT VARIABLE

The composition of the item is:

**30.** If a colleague asked my opinion about taking classes with this professor I:

- (a) will strongly recommend;
- (b) will recommend;
- (c) will recommend with some reservations;

- (d) will not recommend;  
 (e) will strongly not recommend

In the same way as the preceding case (item 29), table two shows the items composing the regression equation in a weight decreasing order (standard regressors). In this case, two items come to focus, item number four and item number 21. These two items are followed by the second item. "Competence and security in explaining the contents" and "availability to the students", followed by "good presentation of the subject" are the most important aspects for the students' recommendation of their professor to their colleagues. The correlation coefficient value of 0,97 informs us that these seven items (table two), as a group, have great explanatory power for the recommendation of the professor by the student.

**TABLE 2**

EXPLANATORY POWER OF THE SET OF SEVEN ITEMS OVER ITEM 30: "IF MY COLLEAGUES ASKED MY OPINION ABOUT REGISTERING WITH THIS PROFESSOR, I WOULD:"

ITEM	r	$\beta$
04 Explains the principles and basic concepts of the course	0,90	0,25
21 Is available to the students.	0,77	0,25
03 Presents the content in general.	0,90	0,21
12 Respects the student's point of view.	0,65	0,14
01 Stimulates interest for the subject.	0,84	0,12
28 Makes exams compatible with the given content.	0,71	0,12
23 Is always punctual.	0,44	0,06
R=0,97		

**r** - Correlation coefficient of the item score with item 30.

**b** - Standard regression coefficient of the item score with item 29.

**R** - Multiple correlation coefficient of score 29 with all others items involved.

## CONCLUSION

This study intended to contribute to the research on professor competence, in a sense that it gives alternatives to improve the performance of the professor in the classroom. The present analysis found the most important items in the classification of the successful professor and his recommendation by the student to other colleagues.

The study analysed several variables that contribute to the success of a professor in class and found that the two most important to explain a successful teacher in a students' view are in first place **the way that the professor presents the content to the class** and in a second place **his or her confidence in answering the students' questions**.

Certainly this topic deserves more attention and this work offers empirical hints to continue the discussion of the issue. New studies have been planned to collect students' opinions in two more big Universities in South Brazil.

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## APPENDIX 1

QUESTIONNAIRE OF PROFESSOR ASSESSMENT  
BY THE STUDENT

Dear student: the goal of this questionnaire is to collect information from the students about the professors and the courses that they teach. Thus, the professor will be able to have additional information to assess his performance, and the course will be able to be critically analyzed in case there is need for change.

**ANSWER IN THE ANSWER SHEET.** Do not sign. Freely express your opinion. This assessment will not influence your grades under any circumstance. The precision of your answer is important, and try to remain as impartial and objective as possible. Ponder for a minute before you answer each question and give the answer that seems most appropriate at the moment. You will notice that the alternatives are in decreasing order and each alternative is more favorable than the next, even if they seem to say the same thing. If you have something to add, please do so on the back of the answer sheet. Check only the chosen alternative in the answer sheet. Before handing in the questionnaire, check for blank answers. Return the questionnaire with the answer sheet. Use the back of the sheet for any extra comments.

**CHARACTERISTICS OF THE PROFESSOR:****1. Stimulates interest for the subject:**

- a. Always stimulates the interest of the student.
- b. Usually stimulates the interest of the student.
- c. Occasionally stimulates the interest of the student.
- d. Rarely stimulates but does not decrease the interest of the student.
- e. Never stimulates and actually decreases the interest of the student.

**2. Knows the content of the course:**

- a. Exceptional knowledge of the content.
- b. Strong knowledge of the content.
- c. Sometimes appears to know the content and sometimes doesn't.
- d. Shows lack of knowledge.
- e. Very little knowledge of content.

**3. Presents the content in general:**

- a. Presents it exceptionally well.
- b. Usually presents it well.
- c. Presents it well, but sometimes is confusing.
- d. Usually presents it in a confusing manner.
- e. Always presents the material in a confusing manner.

**4. Explains the principles and basic concepts of the course:**

- a. He's exceptionally clear.
- b. He's very clear.
- c. He's usually clear but sometimes gets confused.
- d. He doesn't appear to be very clear.

- e. He's generally not clear, the student is always in doubt.

**Teaches the class with happiness and enthusiasm:**

- a. He's always happy and enthusiastic.
- b. He's generally happy and enthusiastic.
- c. He's not always happy and enthusiastic.
- d. Most of the time he is not happy and enthusiastic.
- e. He's never happy and enthusiastic.

**6. Defines the objectives of each class:**

- a. Always defines
- b. Usually defines
- c. Occasionally defines
- d. Rarely defines
- e. Never defines

**7. Demonstrates how a specific topic fits in the whole of the discipline:**

- a. Always demonstrates
- b. Usually demonstrates
- c. Occasionally demonstrates
- d. Rarely demonstrates
- e. Never demonstrates

**8. Is careful to inform himself of the previous knowledge of the student before presenting new material:**

- a. Never starts a new topic before taking this aspect into consideration
- b. Usually takes it into consideration
- c. Occasionally takes it into consideration
- d. Rarely takes it into consideration
- e. Never takes it into consideration because he believes it is not his concern.

**9. Expresses concern about the learning process of the students:**

- a. Always concerned about their learning process.
- b. Usually concerned
- c. Occasionally concerned.
- d. Rarely concerned.
- e. Never concerned because he seems to believe that it is not his problem.

**10. Plans the classes:**

- a. Always plans the classes.
- b. Usually plans the classes.
- c. Occasionally plans the classes.
- d. Rarely plans the classes.
- e. Never plans the classes.

**11. Helps the students with special needs:**

- a. Always tries to identify these students in order to help them.
- b. Usually helps the students with special needs.
- c. Occasionally helps these students.
- d. Rarely helps these students.
- e. Never helps these students.

**12. Respects the student's point of view:**

- a. Always accepts it.
- b. Usually accepts it.
- c. Occasionally accepts it.

- d. Rarely accepts it.
- e. Never accepts it.

**13. Stimulates class participation:**

- a. Always stimulates participation.
- b. Usually stimulates participation.
- c. Occasionally stimulates participation
- d. Rarely stimulates participation
- e. Never stimulates participation

**14. Demands reasoning from the students:**

- a. Always demands reasoning.
- b. Usually demands reasoning
- c. Occasionally demands reasoning
- d. Rarely demands reasoning
- e. Never demands reasoning

**15. Readily answers the questions of the students:**

- a. Always answers.
- b. Usually answers.
- c. Occasionally answers.
- d. Rarely answers.
- e. Never answers.

**16. Is confident in answering the questions:**

- a. Always answers with confidence.
- b. Usually answers with confidence
- c. Occasionally answers with confidence
- d. Rarely answers with confidence
- e. Never answers with confidence

**17. Establishes connections between theory and practice:**

- a. Always establishes these connections.
- b. Usually establishes these connections.
- c. Occasionally establishes these connections.
- d. Rarely establishes these connections.
- e. Never establishes these connections.

**18. Establishes relationships between course material and real life:**

- a. Always establishes a relationship.
- b. Usually establishes a relationship.
- c. Occasionally establishes a relationship.
- d. Rarely establishes a relationship.
- e. Never establishes a relationship.

**19. Enjoys teaching the class:**

- a. Always seems to enjoy it.
- b. Usually seems to enjoy it.
- c. Occasionally seems to enjoy it.
- d. Rarely seems to enjoy it.
- e. Never seems to enjoy it.

**20. Accepts the student as a person:**

- a. Always treats the student as a person.
- b. Usually treats the student as a person.
- c. Occasionally treats the student as a person.
- d. Rarely treats the student as a person.
- e. Never treats the student as a person, only as a receptor of information.

**21. Is available to the students:**

- a. Always available to the students.

- b. Usually available to the students.
- c. Rarely available to the students.
- d. Never available to the students.

**22. Is fair in the distribution of grades:**

- a. Always fair.
- b. Usually fair.
- c. Occasionally fair.
- d. Rarely fair.
- e. Never fair.

**23. Is always punctual:**

- a. Always punctual.
- b. Usually punctual.
- c. Occasionally punctual.
- d. Rarely punctual.
- e. Never punctual.

**24. Is diligent:**

- a. Never absent.
- b. Rarely absent.
- c. Occasionally absent.
- d. Usually absent.
- e. Absent more than is tolerable.

**25. Is sensitive and takes into consideration the problems students have outside the classroom environment:**

- a. Always sensitive to the students' problems.
- b. Usually sensitive to the students' problems
- c. Occasionally sensitive to the students' problems
- d. Rarely takes this into consideration.
- e. Never takes it into consideration. Seems insensitive to the students' problems.

**26. Makes use of examples and illustrations to present the material:**

- a. Always uses them and they are efficient.
- b. Usually uses them well.
- c. Occasionally makes use of them.
- d. Rarely uses them.
- e. Never uses them.

**27. Makes good use of the board:**

- a. Makes excellent use of the board.
- b. Makes good use of the board.
- c. Makes fair use of the board.
- d. Makes poor use of the board.
- e. Makes terrible use of the board.

**28. Makes exams compatible with the given content:**

- a. The exams are well developed and compatible with the material given.
- b. The exams are very good.
- c. The exams are good.
- d. The exams are poorly developed but compatible with the material given.
- e. The exams are poorly developed and incompatible with the material given.

**29. Is successful and handling the course:**

- a. Teaches the course very well.
- b. Teaches the course well.

- c. Teaches the course reasonably well.
- d. Teaches the course poorly.
- e. Teaches the course very badly.

**30. If my colleagues asked my opinion about registering with this professor, I would:**

- a. Strongly recommend.
- b. Recommend.
- c. Recommend with some doubts.
- d. Not recommend.
- e. Strongly not recommend.

## APPENDIX 2

### Cronbach alfa coefficient and total-item correlation

Question	Total-item correlation	a, without the item
01	0,88	0,9699
02	0,69	0,9712
03	0,88	0,9700
04	0,87	0,9701
05	0,69	0,9712
06	0,81	0,9705
07	0,85	0,9704
08	0,85	0,9701
09	0,85	0,9701
10	0,68	0,9712
11	0,75	0,9708
12	0,63	0,9714
13	0,77	0,9706
14	0,53	0,9719
15	0,97	0,9713
16	0,71	0,9710
17	0,73	0,9709
18	0,49	0,9727
19	0,86	0,9702
20	0,78	0,9706
21	0,77	0,9708
22	0,68	0,9713
23	0,47	0,9735
24	0,24	0,9734
25	0,72	0,9709
26	0,78	0,9707
27	0,62	0,9715
28	0,65	0,9713
29	0,93	0,9696
30	0,94	0,9695
Coefficient $\alpha=0,9719$		