STUDENTS' PERCEPTION OF EFFECTIVE TEACHING

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ABSTRACT

This study used descriptive statistics and an Ordered Probit regression approach to assess how students value various instructor characteristics and teaching practices. Surveys completed by 387 students at Thompson Rivers University in the Winter 2010 term obtained their relative preferences for characteristics of instructors (e.g., how organized the instructor is, the instructor's knowledge, and enthusiasm of the instructor) and teaching practices (e.g., using components such as group work, attendance, and class participation in the computation of the final course grade, as well as whether to grade assignments). This paper discusses the instructor characteristics and teaching practices students value most highly, focusing on the major contribution of our study—how perceptions of teaching characteristics vary among students of different genders, years of study, and cultural backgrounds. Faculty who understand the valued instructor characteristics and teaching practices can work on improving or changing their own characteristics and can endeavor to employ preferred teaching practices so as to engage students of different backgrounds more fully.

INTRODUCTION

This study uses descriptive statistics to assess the relative weights that students enrolled in Economics courses assign to various characteristics of their instructors and teaching practices. We also studied how the perceptions of characteristics of instructors and teaching practices vary between students of different genders, majors, years of study, and cultural backgrounds (domestic vs. international). This approach allowed us to determine the weights that various groups of students place on various characteristics of instructors and teaching practices, some of which are specific to Economics instruction. We believe that the results of this study will help optimize teaching and grading strategies for Business students in Economics courses and also will help in faculty recruitment.

Much of the literature examines student perceptions of teaching through an indirect approach, by which researchers try to glean student preferences about teaching through study of student evaluations of instruction[1]. Forms for student evaluation of instruction usually contain questions about characteristics of an instructor's teaching, but with all characteristics given equal weight. Chang's (2000) paper is typical in this literature. The author studies student evaluations of instruction to determine that the best predictors of how students evaluated the quality of teaching of their instructors were student enthusiasm, participation, expected grade, grading

standard, and course difficulty. Davies et al. (2007) use the student evaluation scores from an Economics department in an Australian university to investigate what factors, besides the instructor, influence average student evaluation scores. This research is relevant to our proposed study because the authors focus on teaching Economics. The study finds that students' evaluations were affected by students' cultural backgrounds as well as characteristics of the courses and materials, such as whether the course topics are relatively quantitative in nature and the quality of textbooks and workbooks. Also related to our study is research by Gokcekus (2000) applying a multinomial logit model to data on student evaluation scores to investigate, in an indirect manner, how students value Economics courses. The study finds that characteristics of the instructor and the level of intellectual stimulation had the strongest influence on students' valuation of courses.

A number of studies use the direct approach of conducting surveys to explore students' expectations of and preferences in teaching. Using a large U.S. national database, Cochran and Hodgin (2001) find that enthusiasm, careful preparation, clarity of communication, and fair grading standards contribute to enhancing student satisfaction. Enthusiasm is given equal importance by instructors and students. However, students place about three times as much emphasis on fair grading and nearly twice as much weight on preparation as do instructors. A typical study by Sander et al. (2000) is a typical study that finds that students expected to be taught by formal and interactive lectures but preferred to be taught by interactive lectures and group-based activities. To the best of our knowledge, no study has used Canadian data to determine how students rank various aspects of effective teaching in Economics courses.

DATA AND METHODOLOGY

The study's data come from 387 students enrolled in various levels of Economics courses at Thompson Rivers University—a small, Canadian, primarily undergraduate institution—during the January-April term of the 2009-2010 academic year. Data collection took place during the 10th and 11th weeks of the 12-week term. During administration of the survey, data collectors explained its purpose to students and answered questions from students to make sure they understood the survey questions. Of the students surveyed, 60% are male, and 61% are of domestic (Canadian) origin, with the rest being international students. Institutional Ethics Committee approval was granted prior to conduct of the survey.

The study adopted a descriptive statistics approach to examine students' preferences over various criteria for effective teaching. The study focused on two aspects: instructor's characteristics and teaching practices. Students were asked to rate each characteristic on a scale from 1 (*not important*) to 4 (*very important*). The study computed means for all responses and compared the means for subgroups defined on the basis of gender, student status (Canadian/international), and year of study.

Table 1: Descriptive Statistics: Mean Values of Variables					
Variables	Overall	Female Student	Male Student	Domestic Student	International Student
Male Student	.60 (.025)			.57 (.032)	.67 (.038)
Female Student	.40 (.025)			.43 (.032)	.33 (.038)
Domestic Student	.61 (.024)	.43 (.032)	.57 (.032)		
International Student	.39 (.024)	.33 (.038)	.67 (.038)		
Average Midterm Marks	71.390 (.704)	72.701 (1.084)	70.542 (.922)	73.117 (.895)	68.662 (1.109)
Cumulative GPA	3.062 (.030)	3.16 (.049)	2.996 (.038)	3.129 (.037)	2.956 (.050)
Daily Study (hours)	2.867 (.907)	3.316 (.158)	2.577 (.118)	2.566 (.108)	3.343 (.176)
First Year	.271 (.023)	.237 (.035)	.294 (.030)	.257 (.028)	.293 (.037)
Second Year	.338 (.024)	.375 (.039)	.315 (.030)	.338 (.031)	.34 (.039)
Third Year	.235 (.022)	.25 (.035)	.226 (.027)	.283 (.029)	.16 (.030)
Fourth Year	.085 (.014)	.092 (.024)	.081 (.018)	.114 (.021)	.04 (.016)
Sample Size	387	237	150	237	150
Note: Standard errors are shown in parentheses					

To determine how various student attributes such as gender, student status and year of study impact the ranking of teachers' characteristics as well as rankings of different teaching practices, the study used an Ordered Probit method. The study uses an Ordered Probit method because the students' rankings of teachers' quality and teaching practices are in ordered categories. For example, students rank the characteristic "helpfulness" on a scale from *least important* (1) to *most important* (4). The Ordered Probit Model can be expressed as:

$$yi^* = xi\beta + \varepsilon i \quad (1)$$

where yi* is the dependent variable representing rankings of various teacher qualities as well as various teaching practices. The xi's are the independent variables of gender, student status and student's year of study, and the βs are the estimated coefficients. The observed rankings are given by yi, which takes one of the values 1, 2, 3 or 4.

The observed y is of the following forms:

$y = 1$ (or not important) if $\mu 0 < y^* < \mu 1$ (2a)
$y = 2$ (or somewhat important) if $\mu 1 < y^* < \mu 2$ (2b)
$y = 3$ (or important) if $\mu 2 < y^* < \mu 3$ (2c)
$y = 4$ (or very important) if $\mu 3 < y^* < \mu 4$ (2d)

where $\mu 0$, $\mu 1$, $\mu 2$, and $\mu 3$ are threshold variables to be estimated in the ordered probit model using a maximum likelihood procedure. The probabilities of receiving particular rankings based on the slope and threshold estimates are shown in the following equations:

$P[y = 1] = \Phi(\mu 1 - x_i\beta) - \Phi(\mu 0 - x_i\beta)$ (3a)
$P[y = 2] = \Phi(\mu 2 - x_i\beta) - \Phi(\mu 1 - x_i\beta)$ (3b)
$P[y = 3] = \Phi(\mu 3 - x_i\beta) - \Phi(\mu 2 - x_i\beta)$ (3c)
$P[y = 4] = \Phi(\mu 4 - x_i\beta) - \Phi(\mu 3 - x_i\beta)$ (3d)

where Φ is the standard normal cumulative distribution.

RESULTS

Descriptive statistics from the survey responses appear in Tables 2 and 3. The most notable results shown in Table 2 are: Instructor's knowledge is the most valued characteristic, followed by instructor's ability to explain clearly and instructor's preparedness. Other important characteristics are instructor's helpfulness and instructor's enthusiasm. To the females, domestic students, first-year students, and second-year students, instructor's knowledge is the most valued characteristic. Instructor's ability to explain clearly is the most valued characteristic to the males, third-year students, and fourth-year students. International students consider instructor's preparedness as the most important characteristic among all instructor qualities.

Table 2: Student Ratings of Instructor Characteristics (scaled from 1 [*not important*] to 4 [*very important*])

	Prepared	Clear	Organized	Helpful	Enthu-siastic	Fair	Know-ledgeable	Concer-ned
Overall	3.62 (.03)	3.62 (.04)	3.48 (.04)	3.52 (.04)	3.26 (.04)	3.55 (.04)	3.65 (.03)	3.33 (.04)
Male	3.72 (.05)	3.74 (.05)	3.57 (.06)	3.66 (.05)	3.33 (.06)	3.66 (.05)	3.73 (.04)	3.45 (.06)
Female	3.56 (.04)	3.54 (.05)	3.41 (.05)	3.43 (.05)	3.22 (.05)	3.49 (.05)	3.61 (.04)	3.24 (.05)
Domestic	3.69 (.04)	3.74 (.04)	3.54 (.04)	3.63 (.04)	3.32 (.05)	3.67 (.04)	3.76 (.03)	3.37 (.05)
International	3.51 (.06)	3.43 (.07)	3.38 (.07)	3.34 (.07)	3.17 (.07)	3.36 (.07)	3.49 (.06)	3.25 (.07)

Table 2: Student Ratings of Instructor Characteristics
(scaled from 1 [*not important*] to 4 [*very important*])

	Prepared	Clear	Organized	Helpful	Enthu-siastic	Fair	Know-ledgeable	Concer-ned
First Year	3.56 (.06)	3.57 (.07)	3.36 (.07)	3.45 (.08)	3.23 (.08)	3.54 (.07)	3.61 (.07)	3.19 (.08)
Second Year	3.62 (.05)	3.65 (.06)	3.54 (.06)	3.56 (.06)	3.27 (.06)	3.53 (.06)	3.71 (.05)	3.38 (.07)
Third Year	3.67 (.06)	3.73 (.05)	3.51 (.07)	3.62 (.07)	3.35 (.08)	3.63 (.07)	3.70 (.05)	3.40 (.09)
Fourth Year	3.73 (.08)	3.73 (.10)	3.67 (.09)	3.67 (.11)	3.24 (.15)	3.64 (.10)	3.70 (.11)	3.39 (.13)

Note: Standard errors are shown in parentheses.

Table 3: Student Ratings of Course Grade Determinants
(scaled from 1 [*not important*] to 5 [*very important*])

	Group Work	Attendance (as part of grade)	Participation (as part of grade)	Graded Assignments	Practice Questions	Mainly Lecture
Overall	2.32 (.05)	2.58 (.06)	2.45 (.05)	2.53 (.05)	3.42 (.04)	2.82 (.04)
Male	2.15 (.08)	2.59 (.09)	2.40 (.09)	2.60 (.08)	3.48 (.06)	2.86 (.06)
Female	2.43 (.06)	2.57 (.08)	2.48 (.07)	2.49 (.07)	3.38 (.05)	2.89 (.05)
Domestic	2.13 (.06)	2.46 (.07)	2.28 (.07)	2.37 (.07)	3.53 (.05)	2.82 (.05)
International	2.62 (.08)	2.77 (.09)	2.71 (.08)	2.79 (.08)	3.25 (.06)	2.96 (.06)
First Year	2.29 (.10)	2.61 (.11)	2.37 (.10)	2.44 (.10)	3.27 (.07)	2.88 (.07)
Second Year	2.37 (.08)	2.62 (.10)	2.47 (.09)	2.50 (.09)	3.44 (.07)	2.91 (.06)
Third Year	2.23 (.11)	2.52 (.13)	2.43 (.12)	2.54 (.11)	3.53 (.07)	2.92 (.08)
Fourth Year	2.18 (.18)	2.27 (.19)	2.39 (.18)	2.82 (.18)	3.73 (.09)	2.76 (.14)

Note: Standard errors are shown in parentheses. The rankings for Attendance (being present in class) and Participation (actively asking and/or answering questions; participating in discussions) indicate how important it was that these factors be evaluated by the instructor and included as a percentage of the course grade. Practice Questions refers to students being provided with sample exam questions that are not graded. Mainly Lecture refers to a preference for class time being spent primarily on traditional lectures, rather than on in-class student work, whether as groups, individually or in the form of participation in question-and-answer sessions.

One point to note is that mean ratings for various instructor characteristics, including preparedness, ability to explain clearly, organization, helpfulness, and fairness, tend to increase as students become more mature, progressing from the first year to the fourth year.

Students were also asked about the importance of using various teaching practices. In particular, students were asked about the importance of having a chance to work in a group, having a class mainly in lecture format, and having their course grade partially determined by class attendance and/or class participation. They also were asked to assign a level of importance to graded assignments and practice questions.

The most notable results shown in Table 3 are that all groups of students think that the provision of practice questions is the most important practice and having a class mainly in the lecture format is the least important practice. Ignoring practice questions (or, alternatively, focusing only on components of grading with a positive weight), the study participants thought that taking attendance is the most important practice. In particular, female, domestic, and first- and second-year student subgroups thought that including attendance at lectures as a determinant of a student's course grade is the most important teaching practice. In contrast, male, international, and third- and fourth-year students thought that use of graded assignments is the most important teaching practice.

The results of the Ordered Probit Models are shown in Table 4 and 5. Table 4 provides results of the regression on the rankings for faculty quality. The first column shows that females provide a lower ranking to instructor's preparedness than do males. Similarly, international students have a lower valuation than do domestic students of instructor preparedness as an important quality. This column also suggests that there is no significant difference among students of different years with respect to valuation of instructor preparedness as an important quality. The second column of Table 4 shows regression results for students' ranking of instructor's ability to explain clearly. Here also, in comparison to males and domestic students, females and international students, respectively, view an instructor' ability to explain clearly as a less important quality. On the other hand, year of study has no impact on students' rankings of the instructor's ability to explain clearly. The third column suggests that compared to first-year students, second- and fourth-year students place a higher value on an instructor's organizational abilities. Regression on the rankings of instructor's helpfulness, as shown in the fourth column of Table 4, suggests that compared to males and domestic students, females and international students, respectively, provide place a lower value on an instructor's helpfulness. However, student's year of study has no impact on the ranking of instructor's helpfulness as an important quality. Results for instructor's enthusiasm, as shown in the fifth column of Table 4, suggest that compared to domestic students, international students have a lower valuation of this quality. However, student's gender and year of study have no impact on the ranking of instructor's enthusiasm as an important quality. The sixth column of Table 4 suggests that there is no significant difference in the ranking of instructor's fairness as an important quality with respect to a student's gender, status (domestic/ international) and year of study.

Table 4: Factors Influencing Ranking of Teacher's Quality: An Ordered Probit Approach							
	Instructor Prepared	Instructor Clear	Instructor Organized	Instructor Helpful	Instructor Enthusiastic	Instructor Fair	Instructor Knowledgeable
Female	-.283**	-.251**	-.175	-.273**	-.069	-.181	-.085
	(.138)	(.131)	(.130)	(.135)	(.119)	(.132)	(.138)
International	-.312*	-.493*	-.181	-.341*	-.211**	-.470	-.465*
	(.131)	(.128)	(.125)	(.126)	(.110)	(.126)	(.131)
Second Year	.108	.144	.248***	.165	.049	-.055	.148
	(.151)	(.158)	(.138)	(.150)	(.138)	(.150)	(.161)
Third Year	.162	.183	.146	.208	.130	.079	.013
	(.178)	(.175)	(.163)	(.173)	(.159)	(.178)	(.178)
Fourth Year	.244	.219	.439**	.323	.015	.067	.097
	(.236)	(.269)	(.230)	(.257)	(.232)	(.245)	(.281)
Notes: Standard errors are shown in parentheses. *, ** and *** indicate that coefficient is significant at the 1%, 5%, or 10% level.							

Table 5 shows the regression results of student rankings of teaching practices. The first column of this table suggests that female students rank group work more highly than male students. Also, compared to domestic students, international students have a higher preference for group work. However, with respect to year of study, there is no significant difference in the preference to group work. Regression results of the student rankings of inclusion of attendance as part of grade, as shown in the second column of Table 5, suggest that compared to domestic students, international students have a higher preference for this teaching practice. On the other hand, gender and year of study have no impact on the ranking of this teaching practice. The third column of Table 5 shows the results of the regressions for the ranking of participation as part of grade. The international students rank this teaching practice higher than do the domestic students. On the other hand, there is no significant difference in ranking this teaching practice between male and female students and among students of different years. The fourth column of Table 5 suggests that international students and fourth-year students have a higher preference for graded assignments compared to domestic students and first-year students. On the other hand, there is no significant difference in ranking for this teaching practice between males and females. The results of regressions determining the ranking of providing practice questions are shown in the fifth column of Table 5. The results show that international students have a lower preference for practice questions than do domestic students. Compared to the first-year students, the second-year, third-year and fourth-year students have a higher preference for providing practice questions as a teaching practice. Finally, the last column of Table 5 presents the results for the ranking of "mainly lecture" as the style of teaching. There are no significant differences between male and female students, between domestic and international students, and among students from different years in terms of ranking.

Table 5: Factors Influencing Ranking of Teaching Practice: An Ordered Probit Approach						
	Group Work	Attendance (as part of grade)	Participation (as part of grade)	Graded Assignments	Practice Questions	Mainly Lecture
Female	.269* (.112)	-.053 (.111)	.048 (.113)	-.164 (.111)	-.104 (.123)	.053 (.111)
International	.469* (.110)	.231** (.128)	.376* (.110)	.456* (.113)	-.312* (.116)	.122 (.106)
Second Year	.164 (.131)	.033 (.132)	.133 (.130)	.119 (.134)	.287** (.144)	.193 (.136)
Third Year	.012 (.157)	-.041 (.161)	.137 (.158)	.224 (.150)	.382* (163)	.239 (.146)
Fourth Year	-.034 (.230)	-.249 (.195)	.144 (.201)	.603* (.213)	.770* (.252)	-.019 (.227)
Notes: Standard errors are shown in parentheses. *, ** and *** indicate that coefficient is significant at the 1%, 5%, or 10% level.						

CONCLUSION

Using survey data from economics students at a small, primarily undergraduate university with a significant number of international students, we assessed how students value various instructor characteristics and teaching practices. We found that students perceived the most important characteristics of an effective teacher to be his/her knowledge, his/her ability to explain material clearly, and his/her adequate preparation. Students perceived the most important teaching practice to be provision of practice questions and the least important to be class time dominated by traditional lectures. The study also revealed that students think that having attendance included as part of the course grade and having graded assignments are relatively important teaching practices.

The findings of this study parallel the results from Cochran and Hodgin (2001), who also found that careful preparation, fair grading, and clarity in communication enhance teaching effectiveness. The study also supports the finding of Sander et al. (2001) that students do not prefer teaching in traditional, lecture-focused format.

The findings of this study have significant policy implications, especially for teaching-focused universities. Given that their emphasis on teaching effectiveness, they should undertake to understand as fully as possible students' perceptions regarding effective teaching. Faculty and students are both vital components of the teaching process. Traditionally, universities focus on faculty views of the teaching process, often ignoring or taking minimal account of what students think. Such an approach may lead to an incomplete understanding of teaching effectiveness. This research asked students directly about factors that determine effective teaching. Teaching-focused universities can use the findings of this study to enhance their understanding of effective teaching and thus improve faculty teaching effectiveness. Finally, when hiring new faculty, the

hiring committee may look at whether applicants possess desirable characteristics and whether their teaching practices involve the desirable attributes identified in this study.

This study is based on a small Canadian university and specifically on the business department. Future studies can use data from students at large universities and at other departments to check the robustness of the results of the current study.

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ENDNOTES

[1] In the faculty evaluation using student questionnaire forms, students are given some faculty characteristics—for example "the faculty is helpful" or "the faculty is well prepared" —and then are asked to respond whether or how much a particular faculty member is helpful or prepared. Using evaluation scores from student questionnaires is a way to find out what factors influence faculty evaluation. We term this method an indirect approach to identify qualities of effective teaching. On the other hand, in the direct approach, students are directly asked to identify qualities of an effective teacher.

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