GRADUATE STUDENT SEGMENTS ON EVALUATING TEACHING EXCELLENCE

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ABSTRACT

Five dimensions of teaching excellence are evaluated by graduate students. These dimensions are: i) rapport; ii) delivery; iii) fairness; iv) knowledge and credibility; and v) organization and preparation. This research provides insight into graduate students’ perceptions of teaching excellence and identifies four clusters. Latent Class Cluster Analysis is used to determine the presence of segments with similar membership based on the five teaching dimensions and four covariates: gender, parenthood, undergraduate major, and hours spent studying. Knowledge dominates overall and among most clusters. A faculty member’s expertise, experience, and intelligence are critical. Rapport is lowest overall and lowest or second lowest for all groups.

Keywords: Teaching, outstanding teaching, teaching excellence, Latent Class Cluster Analysis

INTRODUCTION

Ideal teachers have been described in a myriad of ways throughout history: “teacher as midwife (Socrates); as artist in the use of knowledge (Plato); as the conductor of dialogue (Bergman); as purveyor of culture (Cicero); as liberator (Freire); as one who focuses on teaching discipline (Breiter); as role model (Aristotle); as empiricist (Locke); as trainer (Watson); as educator in accordance with nature (Rousseau)” (Arnon and Reichel, 2007, p. 443-444). What constitutes teaching excellence and outstanding teaching remains elusive. What is indisputable is that teaching is critical—probably the most important factor—for student learning (Prosser, Trigwell, and Martin, 2003). Teaching excellence is becoming more elusive because of larger class sizes, greater pressure to publish, and expansion of globalization and technology (Smart, Kelley, and Conant, 2003).
College and university students’ opinions have been “accorded growing importance in the evaluation of quality of instruction by their teachers and their opinions have been taken into consideration when deciding on the advancement of instructors” (Gibbs, 2001, p. 41). One problem is that faculty and students differ on what constitutes teaching excellence (Grunenwald and Ackerman, 1986; Kelley, Conant, and Smart, 1991). Students perceived faculty communication and subject knowledge as paramount (Grunenwald and Ackerman, 1986). A review of “master teachers” in marketing found them engaging and caring in the classroom because of strong communication skills (i.e., enthusiasm, humour, and enjoy teaching), real-world experience, and availability (Conant, Smart, and Kelley, 1988). They have an interactive classroom style coupled with fast and constructive feedback. Their syllabi are detailed and comprehensive. Smart, Kelley, and Conant (2003) found master teachers associate their teaching with “strong communication skills, a real-world perspective, caring/empathy, an involvement orientation, and organization preparation” (p. 77). The emergence of technology is also important, which is different from the 1988 study. A similar study with students found teaching excellence associated with communication skills, caring or empathy, real-world perspective, knowledge, organization and preparation, availability, and fair evaluations (Kelley, Conant, and Smart, 1991).

**Dimensions of Teaching Excellence**

In contrast to previous descriptive studies, Faranda and Clarke (2004) used in-depth interviews with upper-level business students to assess student perceptions of teaching effectiveness. Five “themes” or dimensions were identified: i) rapport; ii) delivery; iii) fairness; iv) knowledge and credibility; and v) organization and preparation, with rapport and delivery cited most. Students desire to “build relationships, especially ones of mutual trust and harmony,
with their instructors. They develop great respect for the professor who listens well but also enjoy occasions when the instructor ‘opens up’ and tells students about him or herself, sharing personal and professional life experiences” (p. 275). Rapport has four subcategories: i) approachability; ii) accessibility; iii) personality; and iv) empathy. Delivery deals with how the instructor presents and conveys subject matter. “Energy, passion, and enthusiasm for the subject matter are all rudimentary for successful delivery” (p. 277). The subcategories for delivery are communication, personal style, and pedagogy. Fairness, “the ability to demonstrate just, equitable, and impartial treatment” in the classroom, for example through grading, workload, and treatment of students during class (p. 277) is the third theme. The subcategories are performance, evaluation, and assignments. Good professors, according to students, are knowledgeable and credible, with subcategories of expertise, experience, and intelligence. Organization and preparation is the final dimension, and it focuses on relaying knowledge, creating expectations, and motivating. The subcategories are clarity, thoroughness, and instructional materials.

These dimensions are consistent with and expand upon Brown’s (1975) study, which identified three preferences by students in faculty: personal warmth, intellectual skill, and academic rigor. Faranda and Clarke (2004) broaden the teaching factors identified by Grunewald and Ackerman (1986) by emphasizing a strong desire for approachable and organized professors. These dimensions are congruent with the seven found (i.e., communication skills, caring, real-world perspective, subject knowledge, organization and preparation, availability, and fair evaluation) by Kelley et al. (1991) and four service quality factors (i.e., responsiveness, reliability, empathy, and tangibles) of Allen and Davis (1991). This study confirms Desai et al.’s (2001) findings on the importance of faculty-student interaction and general classroom management. Specifically, student responses on the instructor’s level of enthusiasm and the
maintenance of fair and impartial standards are consistent with prior literature (Desai et al., 2001; Kelley et al., 1991). Faranda and Clarke’s categories mesh well with the call to incorporate active learning in the classroom (Race, 1993) and the belief that active learning “promotes the development of students’ cognitive and communication skills” (Exley and Dennick, 2004, p. 2). These same qualities are found in Revell and Wainwright (2009) identification of what makes lectures “unmissable”: “a high degree of student participation and interaction; a clear structure which enabled students to identify key points and make integrative links with other areas of the course; and the passion and enthusiasm of the lecturer, and the degree to which she/he can bring a subject to life” (p. 214). Korthagen (2004) argues that non-traditional competencies are essential for good teaching: empathy, compassion, understanding and tolerance, love, and flexibility. Conant et al. (1988) list all five dimensions from Faranda and Clark: knowledge, delivery (communication, applied projects, real-world perspective, and involvement orientation), rapport (caring/empathy), organization/preparation, and fairness (challenging and fair evaluations). The dimensions coincide well with Bruneau and Campbell (2002) review of Generations X and Y students where interactive, stimulating, practical, and personal education works best.

Stronge et al. (2011) compared top- and bottom-quartile fifth-grade teachers (student learning gains) and found the top ones “had fewer classroom disruptions, better management skills, and better relationships with their students” (p. 349) than did bottom-quartile teachers. They focus on learning and the encouragement of learning. There were no differences on dimensions of instructional delivery and assessment.

A meta-analysis of teaching effectiveness identified four dimensions: instructional effectiveness, which connects the student to the curriculum (i.e., hands-on learning, focus on learning, clarity to explain content and directions, complexity, high student expectations, use of
technology to enhance learning, and questioning), student effectiveness (i.e., assessment and feedback), learning environment (respect, trust, classroom management and organization, behavioral expectations); and teacher’s personal qualities (e.g., caring, positive relationships with students, fairness and respect; encouragement of responsibility, and enthusiasm) (Stronge, 2007). These dimensions take a more comprehensive approach by including assessment and feedback. They are similar to the five used for this study. Instructional effectiveness deals with delivery and student effectiveness relates to all of them while learning environment is closely aligned with organization and preparation, and personal qualities include rapport and fairness.

**PROPOSED HYPOTHESIS**

Understanding what constitutes teaching excellence allows professors to tailor courses and create an environment conducive to learning; thus, the researchers focus on the beneficiaries of outstanding teaching: students. The researchers expand upon these dimensions to include differences by gender, parenthood, undergraduate degree (i.e., business or non-business), and hours spent studying. Women are, in general, more studious (Conger and Long 2009). A parent’s perspective may be influenced by knowing that his/her children are being taught by college-trained teachers daily. Parenting also is time-consuming and may influence one’s ability to study. Undergraduate degree is included because the classes may be similar to what they experienced as undergraduates. Those with undergraduate business degrees will be accustomed to the teaching style while those with other degrees may not. Hours studying per week is a proxy for motivation. Those studying more are more highly motivated. (Full- vs. part-time employment was not included because 80 percent of respondents work. Similarly, grade point average was dropped because more than 50 percent of respondents have GPAs above 3.77. Age also had little variability.
The contribution of this study is replicating Faranda and Clarke’s work (2004) quantitatively and forcing students to trade-off among dimensions of teaching excellence. Faranda and Clarke (2004) identified the dimensions, but did not quantify their importance. Based on prior research, the hypotheses are as follows:

- $H_1$: The five dimensions of teaching excellence will differ in importance with knowledge being the most important for graduate students.
- $H_2$: Multiple segments will exist. These segments will differ by gender, parenthood, hours studying, and undergraduate degree.

**METHODS**

**Survey Questionnaire**

Through multiple iterations, a rough draft was developed. It was repeatedly modified during the pre-test, a protocol analysis with 18 undergraduate students in a Marketing Research class. The survey was administered at a private non-secular southeastern university among students in a weekend MBA program where most students work full-time.

**Data Analysis**

Data were entered by one person and then reviewed by another to ensure no data entry errors. Frequencies were then examined as a second check to ensure no data points were outside the range of feasible answers. Respondents used a constant-sum scale (100 points) to evaluate the five prevalent dimensions found in the literature on teaching excellence, with higher values indicating greater importance. Respondents were instructed that responses were ratio scale. Brief explanations were provided for each dimension. The data were analyzed in SPSS version 22 and Latent Gold version 4.5. A one-sample t-test is used to estimate whether the means are different from an average of 20, indicating equal importance among the five dimensions (i.e., 100 points divided equally among the five dimensions). When respondents allocate more or less
than 100 points, a constant number of points will be added or subtracted, respectively, to each
dimension to make them sum to 100.

Latent Class Cluster Analysis (LCCA) (Wedel and Kamakura, 2000) was used to
determine if and how many clusters existed among the five teaching excellence dimensions.
LCCA, unlike other clustering methods, offers an objective means of determining the optimal
number of clusters via use of the Bayesian Information Criterion (BIC) statistic. The optimal
number is indicated by the cluster solution with the smallest BIC value (Bartholomew et al.,
2008). Also, the BIC imposes a penalty for overfitting (i.e., increase the likelihood by adding
parameters). Respondents were assigned to a cluster based on the highest estimated probability
of belonging to that cluster. $L^2$ (chi-squared measure) is examined, where the “$L^2$ for that model
is not substantially larger than the degrees of freedom which is the expected value for $L^2$ under
the assumption that 1) the model is true and 2) $L^2$ follow a chi-square distribution” (Vermunt and
Magidson, 2005). Misclassification, assignment to the class having the highest membership
probability, should be close to zero. Bivariate residuals should be less than one (Vermunt and
Magidson, 2005). Next, cluster profiles were examined (i.e., reran LCCA adding the covariates)
for demographic or behavioral variables associated with cluster membership. Covariates include
the following nominal variables: gender, parenthood, and undergraduate major. The last
covariate is hours spent studying, which is a ratio-level variable.

RESULTS

Eight-three surveys were collected; two were unusable because of incomplete data or
failure to take the exercise seriously (n=81). One respondent allocated less than 100 points
among the five dimensions. This was adjusted upward to 100 by adding a constant to each. Our
sample is evenly split by gender (female=51%), with almost half being a parent (46%) and
having an undergraduate business degree (58%), and most employed full-time (80%) (Table 1). The median income is between $50,000 and $60,000. The average age is 36 and average GPA 3.66.

<table>
<thead>
<tr>
<th>Category</th>
<th>Category</th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Parent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>Yes</td>
<td>46%</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>No</td>
<td>54%</td>
<td></td>
</tr>
<tr>
<td>Undergraduate Degree</td>
<td>Employed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business</td>
<td>Yes</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td>Non-business</td>
<td>No</td>
<td>81%</td>
<td></td>
</tr>
<tr>
<td>Marital Status</td>
<td>Income</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>Under $20k</td>
<td>8%</td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>$20k</td>
<td>9%</td>
<td></td>
</tr>
<tr>
<td>Divorced</td>
<td>$30k</td>
<td>7%</td>
<td></td>
</tr>
<tr>
<td>Widowed</td>
<td>$40k</td>
<td>21%</td>
<td></td>
</tr>
<tr>
<td>Long-term relationship</td>
<td>$50k</td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$60k</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$70k</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$80k</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$90k</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$100k</td>
<td>33%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Above $250k</td>
<td>3%</td>
<td></td>
</tr>
</tbody>
</table>

Because of rounding error may not sum to 100

Among the five teaching dimensions, knowledge and credibility is the most important, followed by delivery and organization. (Note: Knowledge and credibility will be abbreviated during analysis to knowledge, and organization and preparation will be shortened to organization.) Using a one-sample t-test to determine whether the dimensions are equally important (meaning each receives 20 points of the maximum 100), the authors found rapport, knowledge, and fairness statistically significant from 20 (Table 2). Knowledge is the most
important, while rapport and fairness are less important. Organization received almost exactly 20 points, which means it is important, but does not differ from the mean. Hypothesis one is supported.

<table>
<thead>
<tr>
<th>Teaching Dimensions</th>
<th>t (df)</th>
<th>P</th>
<th>mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rapport: approachability/accessibility/personality/empathy</td>
<td>-4.03 (80)</td>
<td>.000</td>
<td>16.53</td>
</tr>
<tr>
<td>Delivery: communication/personal style/relaying information</td>
<td>-0.90 (80)</td>
<td>.371</td>
<td>19.31</td>
</tr>
<tr>
<td>Knowledge and credibility: expertise/experience/intelligence</td>
<td>5.67 (80)</td>
<td>.000</td>
<td>27.64</td>
</tr>
<tr>
<td>Organization and preparation: clarity/thoroughness/instructional material</td>
<td>-0.12 (80)</td>
<td>.907</td>
<td>19.90</td>
</tr>
<tr>
<td>Fairness: performance evaluation/assignments</td>
<td>-4.03 (80)</td>
<td>.000</td>
<td>16.88</td>
</tr>
</tbody>
</table>

1 Scale: 0 (lowest) to 100 (highest)

Latent Class Cluster Analysis

The AIC, BIC, Log Likelihood, and classification error both increase from the four- to three-cluster solution, after increasing slightly from the four- to five-cluster solution, indicating the four-cluster solution is best (Wedel and Kamakura, 2000). The dendrogram from a hierarchical cluster analysis indicates a five-cluster solution. The five-cluster solution also produced a tiny cluster. We chose the more parsimonious four-cluster solution. $R^2$ (standard) is 31 percent for the four-cluster solution; thus, 31 percent of class membership can be predicted from the observed variables. $R^2$ is 16 percent for rapport, 53 percent for delivery, 30 percent for knowledge, 1 percent for organization (important, but little variability among clusters), and 29 percent for fairness (Table 3). All, except organization, are statistically significant. Weekly hours spent studying ($p<.004$) and gender ($p<.08$) are statistically significant. Undergraduate degree and parenthood were not statistically significant but are included for descriptive purposes.

<table>
<thead>
<tr>
<th>Question/Covariate</th>
<th>Wald</th>
<th>p-</th>
<th>$R^2$</th>
</tr>
</thead>
</table>

Table 3

Cluster Solution (means and percentages)
Cluster one is 45 percent of the 81 respondent sample size, while cluster two is 23 percent, cluster three 20 percent, and cluster four 13 percent (Table 4). Cluster one values knowledge and delivery most, above 20, with rapport and fairness below 20. Cluster one is predominately male (64%) non-parents (42%), who graduated with an undergraduate degree in business (59%). They study an average of 9.9 hours weekly. Cluster two values everything equally. They are slightly more males (53%) than females, mostly non-parents (68%), who graduated with an undergraduate degree in business (63%). They study an average of 15 hours weekly. Cluster three unequivocally values knowledge. They are mostly female (87%) parents (73%), who graduated with an undergraduate degree in non-business (56%). They study an average of 23 hours weekly. Cluster four values knowledge and to a lesser extent fairness. They are evenly split by gender, with most being non-parents (40%) and undergraduate business majors (70%). They study an average of nine hours weekly. Hypothesis two is supported.

### Table 4

<table>
<thead>
<tr>
<th>Variable and Covariates / Clusters</th>
<th>One</th>
<th>Two</th>
<th>Three</th>
<th>Four</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>45%</td>
<td>23%</td>
<td>20%</td>
<td>13%</td>
</tr>
<tr>
<td>Rapport</td>
<td>17.86</td>
<td>19.61</td>
<td>14.02</td>
<td>10.00</td>
</tr>
<tr>
<td>Delivery</td>
<td>23.84</td>
<td>19.96</td>
<td>14.13</td>
<td>10.00</td>
</tr>
<tr>
<td>Knowledge</td>
<td>25.21</td>
<td>19.95</td>
<td>38.12</td>
<td>34.00</td>
</tr>
<tr>
<td>Organization</td>
<td>19.70</td>
<td>20.45</td>
<td>18.72</td>
<td>21.50</td>
</tr>
<tr>
<td>Fairness</td>
<td>14.26</td>
<td>20.03</td>
<td>14.38</td>
<td>24.50</td>
</tr>
</tbody>
</table>
CONCLUSION

This research was designed to provide insight into graduate students’ perceptions of teaching excellence and to determine whether identifiable segments exist. Knowledge dominates overall in importance and among most segments. A faculty member’s expertise, experience, and intelligence are critical. This would be expected since graduate students are more worldly both professionally and personally and not as susceptible to superficial success. This may account for why rapport is the lowest ranked dimension, with each cluster assigning it a value less than 20. Fairness, overall, is less important, although one segment lists it as more important. Organization is important for all clusters, but did not differ by cluster.

For the first segment, knowledge is the most important dimension followed closely by delivery. They are close to the bottom in study hours. It is the largest group of males. The faculty member’s personal style, communication, and how he/she relays information is important. They seem to want to be entertained. Imparting that knowledge through communication is an essential nexus between the sender (faculty) and receiver (student).

The second segment values everything. Students are not as concerned about how that knowledge was acquired, just that it is present. Merely possessing knowledge does not translate into teaching excellence. Students expect faculty to be approachable and empathize with them. They are almost evenly split by gender, and have the second highest amount of hours studied.

Segment three is the hard workers. They study nearly three times more than the segment studying the least. Almost three-quarters are parents and they have the lowest percentage of undergraduate business graduates, which probably puts them at a disadvantage in comparison to

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1 Scale: 1 (greatly increase my desire to buy) to 5 (greatly decrease my desire to buy)
business graduates who have taken classes in most business disciplines. A staggering 87 percent are female. Knowledge is paramount; the other dimensions pale in comparison.

Knowledge is also paramount among those studying least (segment four) as if they want faculty to compensate for their lack of effort. Fairness in performance evaluations and assignments and organization (i.e., clarity, thoroughness, and instructional material) are also important. They comprise the largest group of undergraduate business majors and are evenly split by gender. For many, the classes may be similar to what they experienced as undergraduates, just more complex. The degree seems most important. They appear to want faculty to supplement their lack of motivation.

**IMPLICATIONS**

Knowledge is key. Knowledge can be conveyed by discussing credentials at the start the semester, developing exercises that illustrate concepts, displaying relevance for the material, and relating to student experiences. Most graduate programs require extensive group work. The identifiable segments may assist in that process. Like-minded students could be aggregated into segments or groups could be mixed to create situations where students pressure each other to perform to higher standards. Classes must be interactive, which if done properly, addresses all dimensions. Wilson et al. (2005) found “good teaching is developed from experience, education, personal reading and reflection, and interaction with colleagues” (p. 83).

**RECOMMENDATIONS FOR FUTURE RESEARCH**

Class size also may be a moderating factor, with modifications necessary if a class exceeds a certain size (Smart, Kelley, and Conant, 2003). Course duration and delivery method may impact results. Would students in an eight-week course respond similarly to those in a 16-
week format? Is the establishment of rapport crucial in a shorter class where time is limited? Do students online as opposed to face-to-face classes differ in their perceptions of teaching excellence (Bangert, 2005)? Does student major and class type (i.e., quantitative or qualitative) impact results? Future research can examine whether faculty and students would evaluate the dimensions equally (Grunenwald and Ackerman, 1986). This study does not deal with the root cause of perception, be it the media, socioeconomic background, generational, or personality. Finally, the study could be expanded internationally. Liu and Meng (2009) found “evidence that characteristics of a good Chinese teacher are similar to those identified in Western countries” (p. 326). They found no differences among teachers, students, and parents on what constitutes good teaching, except that good faculty “demonstrate the ability to communicate effectively with students” (p. 325).

**LIMITATIONS OF THIS STUDY**

This study was only done at one non-secular institution. Although physical environment and class atmosphere have been cited as important in good teaching, they were not explored in our study (Parpala and Lindblom-Ylanne, 2007). Additionally, other research in the field of teaching excellence indicates that there are several distinct ways in which professors conduct classes that “are more effective than others in motivating business students to learn and to retain information” from classes (Bruneau and Campbell, 2002, p. 11; Bruneau and Campbell 2004). Finally, respondents completed the study in a brand new state-of-the-art facility.

**REFERENCES**


Latent Gold (2005), Version 4.5.0, Belmont, Ma.


