

# Predictors of Student Satisfaction in a Large Psychology Undergraduate Program

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Psychology is one of the most popular undergraduate majors in North America, yet few studies have examined psychology majors' views of their degree program. The purpose of the present study was to identify the factors that contribute to students' satisfaction with their psychology degree. The participants were psychology majors ( $N = 237$ ) graduating from a large Canadian undergraduate program. Three cohorts of graduating students (classes of 2013, 2014, and 2015) completed a comprehensive exit survey. Multiple regression analyses indicated that key predictors of students' satisfaction with their degree program included the quality of teaching in lectures, level of academic challenge, and opportunities for research experience. Additional analyses showed that students with a research thesis requirement reported significantly higher satisfaction than students in a conventional course-based major. These and other findings lead to several recommendations for increasing students' satisfaction in psychology undergraduate programs.

*Keywords:* student satisfaction, psychology undergraduate program, teaching quality, undergraduate research, academic challenge

Psychology is one of the most popular undergraduate majors in North America (The Princeton Review, 2015). For example, according to the most recently available data in Canada (2008–2009), psychology is the third most popular major after liberal arts and sciences and general business/commerce (Canadian Association of University Teachers, 2011–2012). The most recent data published by the National Center for Education Statistics (U.S. Department of Education, 2013) indicated that psychology ranked fourth behind business, social sciences, and health services as the undergraduate program that conferred the most degrees in 2011–2012. Despite this strong interest, many departments have struggled to obtain the resources necessary to accommodate demand for their undergraduate programs, and for some departments one consequence has been larger classes and higher student-to-faculty ratios (Ontario Confederation of University Faculty Associations [OCUFA], 2014). At the same time, the increasing number of psychology programs has made it challenging for established departments to attract and retain the best students, as many students have more than one option to consider when planning their undergraduate education. These competing demands have motivated some departments to examine their programs from a student perspective and to consider

student feedback in their strategic planning and decision-making.

Although there have been several recent studies examining psychology graduate programs in Canada (Bedi, 2016; Carleton, Peluso, & Asmundson, 2010; Farrell et al., 2016; Votta-Bleeker, Tiessen, & Murdoch, 2016), psychology undergraduate programs and students have received relatively little attention. The purpose of the present study was to identify the factors that are associated with students' satisfaction with their psychology undergraduate program. Understanding the factors that contribute to higher student satisfaction provides departments with the information necessary to optimize the allocation of their limited resources in the context of competing demands.

## Assessing Student Satisfaction

*Student satisfaction* is a widely used measure of program quality and has been defined in a variety of ways. For example, Bean and Bradley (1986) defined student satisfaction as “a pleasurable emotional state resulting from a person’s enactment of the role of being a student” (p. 398). More recently, Elliott and Healy (2001) described student satisfaction as a “short-term attitude resulting from an evaluation of the student’s educational experience” (p. 2). Letcher and Neves (2010) argued that student satisfaction is best thought of as the “favourability of a student’s subjective evaluations of the various outcomes and experiences associated with education” (p. 3; see also Hunt, 1977; Oliver, 1989). Clearly, student satisfaction is a complex construct consisting of multiple dimensions that incorporates many subjective appraisals. As a consequence, a thorough assessment of students’ satisfaction will by necessity be multidimensional and take numerous factors into account.

There are several reasons why departments should consider student satisfaction when evaluating their programs. Although

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the perspective that students should be viewed as consumers of education is controversial (Clayson & Haley, 1990; Gruber et al., 2012; Hennig-Thurau, Langer, & Hansen, 2001), many institutions perceive and market education as a paid service (Letcher & Neves, 2010; Oldfield & Baron, 2000; Sines & Duckworth, 1994). Consistent with this perspective, Eliophotou Menon (2002) argued that low levels of student satisfaction reflect a failure on the part of an institution to serve its “customers” and to ensure that their educational services are competitive in the marketplace. Sines and Duckworth (1994) were more emphatic, stating that,

it's time for educational institutions to face two facts: [T]hey are in a competitive battle for students, and students are customers . . . students are increasingly seeking out those institutions offering them the treatment they believe they deserve as paying customers. (p. 2)

A comprehensive examination of undergraduate education (Hacker & Dreifus, 2010) reached the same conclusion, and the fact that tuition has been increasing at a rate higher than inflation (Cain, 2016; Hacker & Dreifus, 2010; OCUFA, 2014) no doubt contributes to this perception. Considered from this perspective, understanding the most important factors that contribute to student satisfaction allows departments to direct their resources to maximize the benefits that higher satisfaction yields.

Additional benefits for departments that can increase student satisfaction include increased student recruitment and retention (Juillerat & Schreiner, 1996; Patterson, Johnson, & Spreng, 1997; Reisberg, 1999; Schreiner, 2009; Schreiner & Nelson, 2013). With respect to retention, Schreiner and Nelson assessed student satisfaction and retention in a wide variety of degree programs in a sample of 29,383 undergraduates attending 61 universities across the United States. A major goal of their study was to determine whether student satisfaction predicts persistence in university. They found that student satisfaction accounted for about 35% of the variance in students' intentions to reenroll the following year. Schreiner and Nelson also found that student satisfaction significantly predicted retention one year later. With respect to recruitment, student satisfaction data contribute to university rankings, which are widely consulted by prospective students and parents (Brown, Wood, Ogden, & Maltby, 2015). Moreover, satisfied students are more likely to recommend their degree program to others (Childers, Williams, & Kemp, 2014; Clemes, Gan, & Kao, 2007), a fact of obvious importance for recruitment. Several studies have found that the benefits of increased student satisfaction in specific programs generalize to the entire institution (e.g., Einarson & Matier, 2005; Elliott, 2002; Juillerat & Schreiner, 1996; Schreiner, 2009; Schreiner & Nelson, 2013; Umbach & Porter, 2002). For these reasons, departments that are able to improve student satisfaction will likely have greater success recruiting and retaining the best students.

In addition to these benefits, research has shown that higher levels of student satisfaction are associated with academic and personal gains for students. Academic advantages include increased motivation (Elliott & Shin, 2002), educational involvement (Finney & Finney, 2010), class attendance (Clemes, Gan, & Kao, 2007), and higher achievement (Pike, 1993; Flores, 2014). The higher academic achievement of satisfied students

may act as a mediator between satisfaction and retention (Einarson & Matier, 2005; Thomas & Galambos, 2004; Umbach & Porter, 2002). Researchers have also noted that departments that make an effort to understand students' positive and negative experiences acknowledge the importance of the student voice in helping to shape their educational experience (Braxton, Bray, & Berger, 2000; Kane, Williams, & Cappuccini-Ansfield, 2008). This can be a significant acknowledgment for many students, as a common concern of undergraduates is that they are undervalued members of the university community and that their input is not important (e.g., Williams, 2011), a perception that can negatively influence student motivation, academic achievement, and retention. Ultimately, and regardless of whether one adopts a consumer-oriented approach or a student success perspective, departments will benefit from efforts to understand and improve student satisfaction.

### Previous Research on Student Satisfaction

Although a number of studies have examined student satisfaction, the literature has largely been limited to studies assessing predictors of satisfaction within specialized courses (online, modular, technical, etc.; e.g., Anderson, Tredway, & Calice, 2015; Beqiri, Chase, & Bishka, 2010; Biasutti, 2011; Flores, 2014; Palmer & Holt, 2009; Zhu, 2012), vocational programs, and business administration and management programs (e.g., Clemes et al., 2007; DeShields, Kara, & Kaynak, 2005; Oldfield & Baron, 2000). Despite the limited scope of this research, several factors that contribute to higher student satisfaction have been identified. The most consistent predictor of higher satisfaction is quality of instruction—students who rate the quality of instruction in their courses highly are more satisfied with their experience (e.g., Curran & Rosen, 2006; Guolla, 1999; Schreiner & Nelson, 2013). Other predictors with more varied support include the provision of career information (e.g., Ahmad, 2015), opportunities to be involved in faculty research (e.g., Bowman & Waite, 2003; Rogers, Kranz, & Ferguson, 2012), student–faculty interaction (e.g., Browne, Kaldenberg, Browne, & Brown, 1998; Clemes et al., 2007), and program advising (e.g., Corts, Lounsbury, Saundargas, & Tatum, 2000; Tessema, Ready, & Malone, 2012).

Few studies have examined predictors of satisfaction for students in psychology programs specifically (for a recent review, see Green, Hood, & Neumann, 2015). Most of these studies have focused on satisfaction with a single course rather than examining overall satisfaction with a degree program (e.g., Bowman & Waite, 2003; Brewer, Dewhurst, & Doran, 2012; Butterfield, 2015; Lyke & Frank, 2012; Maki & Maki, 2003; Rogers et al., 2012; Sain & Brigham, 2003). Moreover, researchers who have examined program satisfaction have typically employed a confirmatory approach, selecting a single factor for examination and testing the strength of its association with students' level of satisfaction (e.g., Holmes, 2014; Malouff, Hall, Schutte, & Rooke, 2010). For example, Malouff et al. (2010) focused specifically on the use of motivational learning techniques and found that these techniques improved students' satisfaction in their psychology courses. In a quite different study, Holmes (2014) examined students' scientist and practitioner interests and found that students with a strong

interest in research valued the scientific emphasis of their psychology program, whereas students with strong applied interests were less likely to be satisfied with their major and less likely to complete their degree.

Considered together, previous studies that have examined factors that contribute to student satisfaction have provided important information, but they have not provided a comprehensive understanding of the key factors that predict student satisfaction in a psychology degree program. In our view, an exploratory approach is necessary for developing such an understanding given that the key factors that predict satisfaction have not been conclusively identified in the literature. An exploratory approach has been adopted successfully by other investigators studying student satisfaction; for example, Oldfield and Baron (2000) used an exploratory methodology to assess predictors of satisfaction for students majoring in business administration. In the present study, we adopted a similar approach, by first documenting the factors that students identified as being related to their satisfaction (via focus groups) and then creating a survey that incorporated these factors to assess their ability to predict student satisfaction.

### The Present Study

The purpose of the present study was to identify the key predictors of psychology majors' satisfaction with their degree program. The participants were graduates of a large psychology undergraduate program (with over 700 majors), comparable in size and organization to many 4-year psychology programs in Canada and the United States. As noted, we used an exploratory approach to derive our initial set of predictors, using focus groups of students to identify common themes relating to student satisfaction (e.g., quality of teaching in lectures, career information, student-faculty interaction). Like Ahmad (2015), we reasoned that student satisfaction with a program is best assessed during students' final year, because graduating students have the most experience with the program. In addition, graduating students are at an important transition in which they are mindful of the steps they will take after they graduate to pursue their career objectives, a perspective that likely provokes an assessment of their experiences in a program. On the basis of the themes identified during the focus groups, an online survey was created and distributed to students graduating in 2013, 2014, and 2015. Our analyses focused on the relative importance of a set of 10 potential predictors of student satisfaction.

We also examined whether student satisfaction was related to three important demographic variables—whether students worked full- or part-time during their studies, whether students were members of the psychology student club, and the type of degree program students had completed (a conventional course-based major or an honors program with a research thesis requirement). We predicted that student satisfaction would be lower when students were working full- or part-time (because they would have less time to dedicate to their studies) and would be higher when students were members of the student club (because of their greater involvement in and identification with their major). We also expected that satisfaction would be higher for students in the honors degree program (who completed a faculty-supervised re-

search thesis during their final year) relative to students who were in the conventional course-based psychology degree program, because honors thesis students would typically receive more mentorship and research experience.

### Method

**Participants.** Participants were students in the psychology undergraduate program at the University of Calgary, a large urban university located in Calgary, Alberta, Canada, a city with a population of approximately 1.2 million. In the fall of 2015, the university had a student enrollment of approximately 30,000 (about 24,000 undergraduates and 6,000 graduate students); the Department of Psychology consisted of 36 full-time faculty and six support staff, and there were approximately 80 graduate students (MSc/PhD) and 700 undergraduate majors (BA/BSc).

Participants were recruited via an e-mail sent to all graduating psychology majors in April of 2013 ( $n = 127$ ), 2014 ( $n = 129$ ), and 2015 ( $n = 163$ ). A total of 237 students completed the entire survey (56.5% of all graduating psychology majors during the 3 years of data collection); another 12.1% started the survey but did not complete at least 50% of it (the data from these students were excluded from the analyses reported below). The final sample also excluded students who reported completing less than 75% of their courses at the university (i.e., students who had transferred from other institutions, 4.6%).

The mean age of participants was 23.9 ( $SD = 4.5$ ) and 86.1% identified as female. Most reported working full- or part-time during their final year of studies (71.3%), with those who worked reporting an average of 10.4 hours of work per week ( $SD = 9.5$ ). Most participants expected to receive a bachelor of arts (BA) degree at graduation (63.5%) and the remainder expected to receive a bachelor of science (BSc) degree. Approximately half of the final sample (113 of 237, or 47.6%) were in the honors degree program, which required students to complete a faculty-supervised research project and thesis during their final year of studies; the remainder were conventional psychology majors who were not required to complete a research project as part of their degree (although many of these students reported acquiring some research experience, as either a paid or volunteer research assistant). Students in the honors degree program were overrepresented in the final sample given the percentage of honors thesis students in a typical graduating class (approximately 30%), which suggests that they were more inclined to complete the survey than conventional majors.

**Materials.** The survey was designed to assess students' satisfaction with the psychology program along 10 dimensions: (a) quality of teaching in lectures, (b) quality of teaching in labs, (c) student-faculty interaction, (d) level of academic challenge, (e) opportunities for research experience, (f) variety of courses available, (g) opportunities for class discussions, (h) opportunities to write about views and ideas, (i) program advising, and (j) career information. As noted, these dimensions were identified during two 90-min focus groups with senior psychology students that took place prior to the creation of the survey (8 to 12 students participated in each group). Focus group participants were asked to identify themes that could be used to predict satisfaction with the psychology program and created a set of potential items with the

assistance of the focus group leader; these items were subsequently edited and refined for use in the survey.

In the survey, each of the 10 dimensions identified via the focus groups was represented by a single item (e.g., “Please rate your satisfaction with the quality of teaching in Psychology lectures”); each item was rated on a 7-point scale ranging from *very satisfied* to *very unsatisfied*, with intermediate points on the scale labelled *satisfied*, *somewhat satisfied*, *neutral*, *somewhat dissatisfied*, and *dissatisfied*. To facilitate interpretation, prior to the data analyses these responses were numerically coded from +3 (*very satisfied*) to -3 (*very unsatisfied*), with *neutral* coded as 0. The survey included demographic questions (age, sex, type of degree program, membership in the psychology student club, number of hours a week working full- or part-time) that were used in several of the analyses reported subsequently. Students could navigate forward and backward in the survey.<sup>1</sup>

Satisfaction with the psychology program was measured with two items: “Please rate your overall satisfaction with your experience in the Psychology program” (rated on a 7-point scale ranging from *very satisfied* to *very dissatisfied*), and “How likely are you to recommend the Psychology program to others?” (rated on a 7-point scale ranging from *very likely*, *likely*, *somewhat likely*, *undecided*, *somewhat unlikely*, *unlikely*, to *very unlikely*). These items were placed near the beginning and near the end of the survey, respectively. Responses to both of these items were coded on a +3 to -3 scale, with *neutral/undecided* coded as 0. Not surprisingly, responses to these two items were correlated ( $r = .71$ ,  $p < .001$ ), but we reasoned that there was potential value in having satisfaction measured both directly (“Please rate your overall satisfaction with your experience in the Psychology program”) and indirectly (“How likely are you to recommend the Psychology program to others?”). We therefore used both measures in our analyses and determined whether the predictors would be the same or different for these two measures.

**Procedure.** In April 2013, 2014, and 2015, an e-mail describing the survey was sent to all undergraduate psychology majors registered to graduate during the June convocation. The e-mail included a hyperlink to the survey, which was administered via Qualtrics, a web-based survey tool ([www.qualtrics.com](http://www.qualtrics.com)). To encourage participation, students who completed the survey were entered in a draw for one of three \$50.00 (CAN) gift certificates. The study was approved by the institutional research ethics board, and all participants provided informed consent. Most students completed the survey in less than 20 min.

## Results

To identify the key predictors of student satisfaction, we carried out several multiple regression analyses. For each analysis the predictors were the 10 items described earlier, namely, quality of teaching in lectures, quality of teaching in labs, student-faculty interaction, level of academic challenge, opportunities for research experience, variety of courses available, opportunities for class discussions, opportunities to write about views and ideas, program advising, and provision of career information. Descriptive statistics for these predictors and correlations among them are listed in Tables 1 and 2, respectively. All predictors were entered into the regression analyses simultaneously, as we had no a priori reasons to give priority to a specific item or set of items.<sup>2</sup> Given the

Table 1

*Descriptive Statistics for the Two-Criterion Variables (“Overall Satisfaction With Psychology Program” and “Likelihood to Recommend the Program to Others”) and the 10 Predictor Variables*

Variable	<i>M</i>	<i>SD</i>	<i>SE</i>
Overall satisfaction with psychology program	1.69	1.10	.07
Likelihood to recommend program to others	1.43	1.41	.09
Quality of teaching in lectures	1.81	1.16	.07
Quality of teaching in labs	1.49	1.31	.08
Student-faculty interaction	1.25	1.48	.09
Level of academic challenge	1.64	1.14	.07
Opportunities for research experience	1.09	1.69	.11
Variety of courses available	1.11	1.61	.10
Opportunities for class discussions	1.56	1.33	.08
Opportunities to write about views and ideas	.98	1.48	.09
Program advising	.79	1.50	.09
Career information	-.03	1.68	.11

number of regression analyses carried out, we used an alpha level of .01 to determine statistical significance in order to reduce the probability of making Type I errors.

For the first regression analysis, the dependent variable was overall satisfaction with the psychology program (assessed by the item “Please rate your overall satisfaction with your experience in the Psychology program”). Together the predictors accounted for a significant percentage of the variance in the satisfaction ratings ( $R = .79$ ,  $R^2 = .63$ , adjusted  $R^2 = .62$ ),  $F(10, 211) = 35.66$ ,  $p < .001$ . As shown in Table 3, only three predictors were statistically significant ( $p < .01$ ): quality of teaching in lectures, level of academic challenge, and opportunities for research experience (in order of importance based on their semipartial correlations of .33, .25, and .13). For each of these predictors, higher ratings on the *very unsatisfied* to *very satisfied* scale were associated with greater satisfaction with the psychology degree program.

The second regression analysis used responses on the item “I would recommend the Psychology program to others” as the measure of student satisfaction. The predictors accounted for a significant percentage of the variance in these ratings ( $R = .67$ ,  $R^2 = .45$ , adjusted  $R^2 = .42$ ),  $F(10, 211) = 16.68$ ,  $p < .001$ . About 20% less of the variance was accounted for in this measure of student satisfaction (42% vs. 62% in the analysis of the overall satisfaction variable described earlier), but the same set of predictors was statistically significant. That is, as we found in the analysis of the overall satisfaction ratings, quality of teaching in lectures, level of academic challenge, and opportunities for research experience were the only significant predictors (with semipartial correlations of .27, .23, and .15, respectively; see Table 4). Higher levels of satisfaction for each of these predictors were associated with a higher likelihood to recommend the program. These results show that measuring satisfaction in terms of students’ likelihood of recommending the program produces the same set of predictors compared with

<sup>1</sup> The survey can be downloaded from [www.psyc.ualgary.ca/CCD/CS-Lab/Study\\_Materials/Student\\_Satisfaction\\_Survey/](http://www.psyc.ualgary.ca/CCD/CS-Lab/Study_Materials/Student_Satisfaction_Survey/)

<sup>2</sup> Analyses using a step-wise regression procedure produced the same results.

Table 2  
Correlations Between the Predictor Variables

Predictor	1	2	3	4	5	6	7	8	9	10
1. Quality of teaching in lectures	—									
2. Quality of teaching in labs	.46	—								
3. Student-faculty interaction	.58	.32	—							
4. Level of academic challenge	.43	.36	.40	—						
5. Opportunities for research experience	.36	.25	.68	.40	—					
6. Variety of courses available	.40	.30	.41	.31	.37	—				
7. Opportunities for class discussions	.38	.37	.41	.34	.36	.37	—			
8. Opportunities to write about views and ideas	.51	.31	.62	.33	.64	.40	.52	—		
9. Program advising	.44	.23	.58	.37	.51	.37	.32	.53	—	
10. Career information	.33	.23	.54	.37	.53	.39	.31	.52	.58	—

Note. All  $p$  values < .001.

when satisfaction is measured with a direct question, although the percentage of variance accounted for is much lower in the former case.<sup>3</sup>

**Student satisfaction by degree program.** We predicted that student satisfaction would differ between students in the honors degree program (who completed a faculty-supervised research thesis during their final year) and students who were in the conventional course-based degree program. Comparisons between these two groups of students on the 10 key predictors and the two satisfaction variables (overall satisfaction and likelihood to recommend) are shown in Table 5. Honors thesis students ( $n = 113$ ) were significantly more satisfied with student–faculty interaction and opportunities for research experience than were conventional majors ( $n = 124$ ). They were also significantly more satisfied with program advising and career information. With respect to their overall satisfaction with the psychology program, honors thesis students' satisfaction was significantly higher than that of conventional majors, and honors thesis students were significantly more likely to recommend the program than conventional majors. These results indicate that students who complete a research thesis experience significantly higher satisfaction with their degree program than those who pursue a conventional course-based degree.

Given these differences in the satisfaction of honors thesis students and conventional majors, we carried out separate regression analyses for these two groups to determine if the significant predictors of satisfaction identified in the regression analyses described earlier (which included both honors thesis students and conventional majors) would be the same for honors thesis students and majors when their data were analyzed separately. The same set of 10 predictors was used in these analyses.

For the overall satisfaction variable (assessed by the item “Please rate your overall satisfaction with your experience in the Psychology program”), for honors thesis students, the predictors accounted for a significant percentage of the variance in the satisfaction ratings ( $R = .84$ ,  $R^2 = .70$ , adjusted  $R^2 = .67$ ),  $F(10, 94) = 21.81$ ,  $p < .001$ . There were two significant predictors: quality of teaching in lectures,  $t(94) = 7.84$ ,  $p < .001$ , and level of academic challenge,  $t(94) = 3.93$ ,  $p < .001$  (the semipartial correlations were .44 and .22, respectively). For conventional majors, the predictors accounted for slightly less variance in the overall satisfaction ratings than they did for honors thesis students, ( $R = .78$ ,  $R^2 = .61$ , adjusted  $R^2 = .58$ ),  $F(10, 106) = 16.69$ ,  $p < .001$ , but the same two predictors were statistically significant:

quality of teaching in lectures,  $t(106) = 3.69$ ,  $p < .001$ , and level of academic challenge,  $t(94) = 4.33$ ,  $p < .001$  (the semipartial correlations were .22 and .26, respectively). Note that, unlike the results of the analysis that combined both honors thesis students and conventional majors, opportunities for research experience was not a significant predictor in either of these analyses. This outcome is likely due to a restriction of range within each group on the measure of research experience; although there was substantial variability between these groups on this measure, there was limited variability within each group.

Separate regression analyses for honors thesis students and conventional majors were also carried out for the “likelihood to recommend” variable (assessed by the item “I would recommend the Psychology program to others”). For honors thesis students, the predictors accounted for a significant percentage of the variance in the likelihood to recommend ratings ( $R = .75$ ,  $R^2 = .56$ , adjusted  $R^2 = .52$ ),  $F(10, 94) = 12.14$ ,  $p < .001$ . Quality of teaching in lectures,  $t(94) = 6.24$ ,  $p < .001$ , and level of academic challenge,  $t(94) = 4.10$ ,  $p < .001$ , again emerged as significant predictors (the semipartial correlations were .43 and .28, respectively). For conventional majors, the percentage of variance accounted for was lower than it was for honors thesis students ( $R = .64$ ,  $R^2 = .40$ , adjusted  $R^2 = .35$ ),  $F(10, 102) = 6.91$ ,  $p < .001$ , and only level of academic challenge was significant in predicting conventional

<sup>3</sup> Analysis of the distributional characteristics of the criterion variables and predictors indicated that responses on most of the items were negatively skewed, as students were generally satisfied with the quality of teaching, level of academic challenge, and the other variables assessed (as shown in Table 1, the means ranged from  $-0.03$  to  $1.81$  on a scale from  $-3$  to  $+3$ ). We expect that this would be the case when surveying graduating students in many psychology programs because highly dissatisfied students would tend to switch majors or move to other institutions prior to their graduation year. To determine what impact this may have had on our analyses, we transformed each variable by first reflecting its values (creating a positively skewed distribution) and then using a logarithmic function ( $\log 10$ ) to normalize the distribution prior to carrying out the regression analyses. The regression analyses with these transformed variables produced very similar results—for the overall satisfaction variable and the likelihood to recommend variable the significant predictors ( $p < .01$ ) were quality of teaching in lectures, level of academic challenge, and opportunities for research experience, which were the same predictors identified in the analyses of the untransformed data. The only difference was that provision of career information was a significant predictor of overall satisfaction in the analysis of the transformed data ( $p = .004$ ), whereas in the analysis of the untransformed data it was not ( $p = .076$ ).

Table 3  
Results of the Multiple Regression Analysis for the Criterion Variable “Overall Satisfaction With Your Experience in the Psychology Program”

Predictor	<i>r</i>	<i>b</i>	<i>SE</i>	$\beta$	sr	<i>t</i>	<i>p</i>
Quality of teaching in lectures	.670	.446	.056	.464	.33	7.91	<.001
Quality of teaching in labs	.398	-.035	.043	-.042	-.03	.81	.418
Student-faculty interaction	.550	.006	.051	.008	.01	.12	.900
Level of academic challenge	.594	.278	.047	.300	.25	5.88	<.001
Opportunities for research experience	.523	.130	.041	.204	.13	3.16	.002
Variety of courses available	.344	-.041	.034	-.061	-.05	1.21	.228
Opportunities for class discussions	.380	.007	.041	.008	.01	.15	.874
Opportunities to write about views and ideas	.515	.058	.047	.077	.05	1.21	.226
Program advising	.387	-.040	.041	-.053	-.04	.96	.335
Career information	.433	.064	.036	.100	.08	1.78	.076

Note. *r* = zero-order correlation with criterion variable. *b* = regression coefficient (unstandardized). *SE* = standard error of regression coefficient.  $\beta$  = standardized regression coefficient. sr = semi-partial correlation. *t* = *t* statistic for regression coefficient. *p* = probability value for *t* statistic.

majors’ likelihood to recommend,  $t(102) = 3.30, p = .001$  (the semipartial correlation was .25). Taken together, the results of these analyses reinforce the conclusion that quality of teaching and level of academic challenge are important predictors of students’ overall satisfaction and their likelihood to recommend their program to others.

**Student satisfaction and employment.** We predicted that student satisfaction would be negatively affected when students were working full- or part-time because they would have less time to dedicate to their studies. Consistent with this prediction, there was a significant correlation between the number of hours worked per week and students’ ratings of satisfaction,  $r(246) = -.18, p < .01$ , with higher numbers of hours worked associated with lower satisfaction.

To explore whether this association held for both honors students and conventional majors, we analyzed the satisfaction ratings using a  $2 \times 2$  analysis of variance (ANOVA), with degree program (honors thesis student vs. conventional major) and employment status (working vs. not working) as between-subjects factors (the percentage of honors thesis students and conventional majors who worked was 46.9% and 53.1%, respectively). The analysis revealed significant main effects of degree program,  $F(1, 233) =$

9.89,  $MSE = 11.41, p = .002$ , and employment status,  $F(1, 233) = 5.62, MSE = 6.49, p = .02$ , but no interaction,  $F(1, 233) = 1.00, MSE = 1.15, p = .31$ . Consistent with the correlation described earlier, students who worked reported lower satisfaction than those who did not work ( $M = 1.60$  vs.  $1.96$ ). Honors students reported greater satisfaction than conventional majors, as discussed previously (see Table 5). Despite the more rigorous requirements of the honors program, the absence of an interaction indicated that the difference in satisfaction between students who worked and students who did not work was no more pronounced for honors thesis students than it was for conventional majors.

Interestingly, a different pattern of results emerged in the corresponding analyses of the likelihood to recommend ratings. First, the correlation between the number of hours worked per week and the likelihood to recommend ratings was not significant,  $r(246) = -.13, p = .06$ . Second, the only significant effect to emerge in the ANOVA was the main effect of degree program,  $F(1, 233) = 17.96, MSE = 33.79, p < .001$ , which reflected the previously discussed finding that honors thesis students were more likely to recommend the program than were conventional majors (see Table 5). Neither the main effect of employment status nor the interaction were significant,  $F(1, 233) = 1.38, MSE = 2.61, p = .24$ , and

Table 4  
Results of the Multiple Regression Analysis for the Criterion Variable “Likelihood to Recommend the Psychology Program to Others”

Predictor	<i>r</i>	<i>b</i>	<i>SE</i>	$\beta$	sr	<i>t</i>	<i>p</i>
Quality of teaching in lectures	.516	.484	.091	.385	.27	5.29	<.001
Quality of teaching in labs	.276	-.119	.068	-.110	-.09	1.74	.082
Student-faculty interaction	.407	-.116	.081	-.121	-.07	1.43	.152
Level of academic challenge	.504	.325	.074	.274	.23	4.38	<.001
Opportunities for research experience	.444	.195	.065	.239	.15	2.98	.003
Variety of courses available	.280	-.040	.054	-.046	-.04	.74	.456
Opportunities for class discussions	.390	.162	.067	.154	.13	2.40	.017
Opportunities to write about views and ideas	.424	.012	.076	.013	.01	.16	.873
Program advising	.284	-.105	.065	-.110	-.08	1.61	.108
Career information	.392	.127	.056	.158	.12	2.26	.024

Note. *r* = zero-order correlation with criterion variable. *b* = regression coefficient (unstandardized). *SE* = standard error of regression coefficient.  $\beta$  = standardized regression coefficient. sr = semi-partial correlation. *t* = *t* statistic for regression coefficient. *p* = probability value for *t* statistic.

Table 5  
*Comparisons Between Honors Thesis Students and Conventional Majors*

Variable	Honors	Majors	<i>t</i>	<i>p</i>
Overall satisfaction with psychology program	1.91 (.99)	1.50 (1.15)	2.91	.004
Likelihood to recommend program to others	1.78 (1.26)	1.10 (1.48)	3.72	<.001
Quality of teaching in lectures	1.89 (1.06)	1.74 (1.24)	1.00	.317
Quality of teaching in labs	1.58 (1.29)	1.42 (1.32)	.91	.362
Student-faculty interaction	1.57 (1.33)	.95 (1.56)	3.26	.001
Level of academic challenge	1.70 (1.27)	1.58 (1.02)	.77	.440
Opportunities for research experience	1.79 (1.41)	.46 (1.67)	6.55	<.001
Variety of courses available	1.21 (1.62)	1.02 (1.59)	.86	.389
Opportunities for class discussions	1.64 (1.34)	1.50 (1.32)	.76	.446
Opportunities to write about views and ideas	1.12 (1.43)	.85 (1.52)	1.35	.177
Program advising	1.13 (1.47)	.48 (1.47)	3.34	.001
Career information	.29 (1.72)	-.33 (1.59)	2.83	.005

*Note.* Means are on a scale from +3 (*very satisfied*) to -3 (*very unsatisfied*). Standard deviations are in parentheses. *t* = *t* statistic for independent groups *t* test. *p* = probability value for *t* statistic.

$F(1, 233) = 3.65$ ,  $MSE = 6.88$ ,  $p = .06$ , respectively. Students who worked were not significantly less likely to recommend the program than those who did not work ( $M = 1.38$  vs.  $1.57$ ), and this was true for honors thesis students and conventional majors (hence the lack of an interaction). Assuming that the differences observed reflect causal processes, the overall pattern of results for these two dependent measures suggests that although working full- or part-time has a negative impact on students' satisfaction with their degree program, it does not reduce the likelihood that students will recommend their program to others.

**Student satisfaction and membership in the psychology student club.** Finally, we predicted that students who were members of the psychology student club ( $n = 81$ ) would report higher satisfaction than those who were not members ( $n = 156$ ), due to their increased engagement and identification with the program. Surprisingly, this was not the case. We examined the effect of student club membership using a  $2 \times 2$  ANOVA, with the factors club membership (members vs. nonmembers) and degree program (honors thesis students vs. conventional majors). (Honors thesis students were more likely to be club members than conventional majors; 54.9% vs. 45.1%.) This analysis produced a main effect of degree program,  $F(1, 233) = 7.94$ ,  $MSE = 9.35$ ,  $p = .005$  (as shown in Table 5), but no main effect of club membership,  $F(1, 233) = 1.60$ ,  $MSE = 1.88$ ,  $p = .20$ , and no interaction,  $F < 1$ . The same results were obtained in the ANOVA analysis of the likelihood to recommend ratings: there was a main effect of degree program,  $F(1, 233) = 14.12$ ,  $MSE = 26.83$ ,  $p < .001$ , no main effect of club membership,  $F(1, 233) = 2.50$ ,  $MSE = 4.76$ ,  $p = .11$ , and no interaction,  $F < 1$ . Student club members were no more satisfied with the program than were those who were nonmembers ( $M = 1.61$  vs.  $1.74$ ) and were no more likely to recommend the psychology program than were nonmembers ( $M = 1.30$  vs.  $1.51$ ). Thus, club membership was not associated with higher satisfaction, nor did it influence the likelihood that students would recommend the program to others.

## Discussion

The purpose of this study was to identify the factors that predict students' satisfaction with their undergraduate psychology program. We used focus groups of graduating students to identify

common themes relating to student satisfaction and created an online survey that was distributed to three cohorts of graduating students (the classes of 2013, 2014, and 2015). Multiple regression analyses were used to assess the relative importance of 10 predictors of student satisfaction derived from the common themes identified in the focus groups (quality of teaching in lectures, quality of teaching in labs, student-faculty interaction, level of academic challenge, opportunities for research experience, variety of courses available, opportunities for class discussions, opportunities to write about views and ideas, program advising, and career information). In what follows, we first discuss our main findings and recommendations, and we then discuss the limitations of our study and directions for future research.

**Predictors of program satisfaction.** Although the focus groups identified 10 variables that could potentially contribute to student satisfaction, analyses of the survey data indicated that a much smaller number of variables accounted for most of the variance in the satisfaction ratings. For the sample as a whole (i.e., ignoring the distinction between honors thesis students and conventional majors), only quality of teaching in lectures, level of academic challenge, and opportunities for research experience significantly predicted student satisfaction. The regression analysis indicated that the majority of the variance in the satisfaction ratings was explained by these three predictors, which suggests that they are important contributors to students' satisfaction with their psychology degree program. We also found that these three predictors were important when predicting the likelihood that students would recommend their degree program to others.

Quality of teaching in lectures and level of academic challenge may be especially important predictors of student satisfaction because they significantly predicted satisfaction for both honors thesis students and majors. The finding that quality of teaching, in particular, predicted satisfaction for all students, regardless of whether they were pursuing a conventional or honors degree, is consistent with previous research showing that instructional quality is a significant contributor to student satisfaction in a wide variety of contexts (e.g., Bigne, Moliner, & Sanchez, 2003; Corts et al., 2000; Curran & Rosen, 2006; Elliott & Healy, 2001; Guolla, 1999; Smimou & Dahl, 2012; Tessema et al., 2012). There is a large literature on students' evaluations of university teaching and

the utility and psychometric validity of such ratings (e.g., Marsh, 2007; Marsh & Roche, 1997, 2000; Perry & Smart, 2007), and our results highlight the importance of this research. From the students' perspective, satisfaction with the quality of teaching in courses is positively associated with overall satisfaction and the likelihood to recommend their degree program, and so it is advantageous for departments to properly assess teaching quality and to stay abreast of this literature.

It is notable that, for both honors thesis students and conventional majors, level of academic challenge predicted satisfaction, given that some studies have reported that students provide more positive course evaluations in courses where they receive higher grades (e.g., Childers et al., 2014; Maki & Maki, 2003). These studies suggest that some students do not prefer to be challenged academically, an interpretation supported by Maki and Maki's (2003) finding that a lighter course load was associated with higher student satisfaction. On the other hand, Bain (2004) noted that although course evaluations tend to be higher when students expect to receive higher grades, students typically give higher evaluations in courses that both challenge them intellectually and are perceived to support them in meeting those challenges, relative to courses that students perceive to be easy or in which little learning occurs. It is unclear whether Bain's findings are directly relevant to our results because we did not assess students' perceptions of support and we examined predictors of program satisfaction rather than course evaluations. Nevertheless, our results lend support to the view that many students prefer to be challenged academically and derive greater satisfaction from their undergraduate experience when this is the case.

Our results also show that opportunities for research experience are an important contributor to student satisfaction. Our results are therefore consistent with previous studies that have documented the value of research experience for students' academic engagement and achievement, as well as for their personal and career development (Brewer et al., 2012; Henkel, 2006; Kuh, 2007; Rogers et al., 2012; Ware, Badura, & Davis, 2002). For example, undergraduates who take part in research demonstrate stronger scientific thinking (Henkel, 2006), writing skills (Ware et al., 2002), and are more likely to pursue graduate level study (Kuh, 2007). Research also suggests that students recognize the numerous benefits of being involved in research whether or not they intend to pursue a career in the sciences (Brewer et al., 2012; Rogers et al., 2012). Our study thus contributes to the growing literature documenting the advantages of undergraduate research for students, faculty, and departments (e.g., Russell, Hancock, & McCullough, 2007; Wayment & Dickson, 2008).

**Satisfaction of honors thesis students versus majors.** We found that honors thesis students were significantly more satisfied than conventional majors with the level of academic challenge in their program, student-faculty interaction, and research opportunities. Honors thesis students were also more satisfied with the provision of career information and program advising. Most important, students in the honors thesis program were significantly more satisfied with their degree program and were more likely to recommend their program to others.

These findings suggest that the more enriched educational experience of honors thesis students produces a higher level of satisfaction along multiple dimensions. However, it is important to keep in mind that honors thesis students tend to differ from

conventional majors in ways that could contribute to the differences that we observed. Honors students constitute a select group of students in that they typically have higher grades than conventional majors and are usually selected via a competitive application process designed to identify students with above average research interests and potential. Further research is necessary to determine to what extent the differences we observed reflect the impact of the honors thesis experience on students' satisfaction versus the impact of greater academic success and motivation.

**Student satisfaction and employment.** The effect of full- or part-time work on students' satisfaction revealed that students who worked full- or part-time while completing their degree were less satisfied than students who did not. Further analyses revealed that working had a negative impact on the satisfaction of both honors thesis students and conventional majors. Other researchers have reported that full- and part-time work is associated with lower student satisfaction, although they did not distinguish between honors thesis students and conventional majors in their studies. For example, Tessema, Ready, and Astanie (2014) found that the number of hours that senior undergraduate students worked was negatively associated with satisfaction. This association is likely due to the complexities associated with balancing the competing demands of work and school, which of course becomes more difficult as the number of hours worked increases. Although the honors thesis students in our study were balancing work with more rigorous academic and research requirements (relative to the requirements for conventional majors), there was no evidence that their satisfaction was negatively affected by working any more than it was for majors. Another interesting finding was that students who worked reported lower satisfaction with the program but were not less likely to recommend the program to others. This outcome suggests that students are able to take into account their personal circumstances in their recommendation decision.

**Student satisfaction and club membership.** In many psychology departments there is an undergraduate club or student organization that provides opportunities for students to gather, network, and participate in social events and information sessions. We found that students who were members of the psychology club were no more satisfied with their degree program and no more likely to recommend the program than students who were not club members, and this was true for both honors thesis students and conventional majors. This finding was somewhat surprising, as one might expect that students involved in a club would experience higher satisfaction due to their greater engagement and identification with their program and peers (e.g., Fischer, 2007, found that students' social ties within the campus community significantly predicted satisfaction). On the other hand, membership in a student club does not necessarily reflect greater engagement, and even if it did, one would expect that the degree of engagement would vary among club members.

The absence of a difference between club members and non-members in our study may also be attributed to the fact that our participants were about to graduate. That is, many student clubs' efforts focus on connecting students with each other to build a sense of community, a goal that may be more beneficial to students in the first years of their program when they likely know few of their peers. If so, participating in a student club was likely less valued by students in our study than more proximal factors such as quality of instruction, academic challenge, and research opportu-

nities. It is also possible that membership in a student club might have greater opportunity to influence satisfaction in departments that do not offer an honours thesis option or similar research-intensive experience. To the extent that completing a research thesis provides students opportunities to share similar experiences and develop a sense of community, departments that do not offer such a program may find that membership in a psychology club does influence student satisfaction.

**Implications for psychology programs.** The results of our study have several implications for administrators and faculty who wish to improve the satisfaction of students in a psychology degree program. By identifying the key predictors of student satisfaction in our sample, we have provided departments with the information necessary to engage in evidence-based decision-making and planning. Taken together, our findings provide clear direction to departments that seek to optimize and focus their resources on enhancing student experiences. Fortunately, for most of the predictors identified, it is possible for many departments to envision ways to modify existing policies and practices to increase students' satisfaction along the relevant dimensions.

The importance of teaching quality as a major predictor of student satisfaction underscores the value of promoting faculty participation in activities that can improve the quality of teaching in courses (e.g., teaching workshops and seminars; teaching and learning conferences; peer feedback) and the value of promoting engagement with the extensive literature on the scholarship of teaching and learning (e.g., Hattie, 2009; Perry & Smart, 2007). Of course, the effectiveness of these activities is strongly related to the importance that a department (and institution) places on teaching quality; faculty are unlikely to be motivated to improve their teaching if there is neither support nor incentives to do so. The provision of significant incentives can be an issue in research-focused departments that value research success (e.g., publications, grants) more than teaching success. What should be kept in mind, however, is that in this study students' satisfaction with teaching quality was strongly related to their overall satisfaction with their degree program and the likelihood they would recommend their program to others. Significant improvements in either measure would be consistent with the goals of a research-focused department, given that it could enhance a department's reputation and its ability to recruit the best applicants to its graduate programs and thesis-based honors programs.

The second key result was that students' perceptions of the level of academic challenge were positively related to their satisfaction, and this was true for both honors thesis students and conventional majors. This outcome should reassure faculty and administrators that challenging students academically will not invariably result in lower levels of satisfaction. On the contrary, our results contribute to the literature that suggests that creating an academically rigorous curriculum can produce higher student satisfaction, so long as instructors make efforts to ensure that students feel supported and receive adequate feedback on their performance (Bain, 2004). Challenging students academically is an important goal of higher education, but to do so effectively, students should feel confident that their efforts will be recognized and rewarded.

With respect to opportunities for research experience, our results suggest that departments should look for a variety of ways to provide undergraduate students with research experiences in addition to an honors or senior research thesis. The provision of course

credit for time spent working in laboratories would be a simple way to provide such experience to a larger and more diverse group of undergraduate students, including those who may decide not to pursue a thesis-based degree. Although many students volunteer as research assistants, providing academic credit for this activity allows a student's work to be formally recognized and counted toward his or her degree program, which likely increases the attractiveness of such opportunities for students. In addition, for some faculty members this arrangement may offer an incentive to supervise such students because it grants them formal recognition of their supervisory activity. Providing academic credit for single semester research projects, fieldwork, and part-time internships prior to students' final year are other options for providing research opportunities other than the traditional senior year research thesis.

### Limitations and Directions for Future Research

Several limitations of this study deserve consideration. First, we used single-item measures to gauge both our criterion variables (overall student satisfaction and likelihood to recommend) and our predictors (teaching quality, level of academic challenge, opportunities for research experience, etc.). The limitations of single-item measures have been known for some time (Churchill, 1979; Peter, 1979) and multiple-item measures are generally acknowledged to be superior to single-item measures, especially when a construct is complex. On the other hand, some studies have found that single- and multiple-item measures of complex constructs, such as job satisfaction and brand attitudes, are highly correlated (e.g., Wanous, Reichers, & Hudy, 1997) and exhibit comparable levels of predictive validity (e.g., Bergkvist & Rossiter, 2007).

Another limitation of single-item measures is that they lack specificity. In the present study, for example, our use of a single-item to measure satisfaction with research opportunities masked potential differences between satisfaction with the quantity versus the quality of such research experience. Multiple-item measures of student satisfaction do exist (e.g., the Noel-Levitz Student Satisfaction Inventory; Bryant, 2006). However, we are aware of no measure that would have allowed us to assess the 10 factors identified in our focus groups as important contributors to student satisfaction. Moreover, given the length of our survey, we were forced to make difficult decisions when selecting scales and items in an effort to balance the number of items with the time required of participants to complete them. Realistically, we knew that students were busy at the time of year we recruited them (in April, during the final exam period), and that we could not expect to recruit a large sample if the survey was lengthy and time consuming. Accordingly, we chose to use single-item measures for our criterion and predictor variables to minimize the demand on students' time and attention while maximizing the breadth of variables we could include in our analyses. Researchers should carefully weigh the advantages and disadvantages of single-item measures when assessing student satisfaction in their undergraduate programs.

As previously noted, a second limitation of our study is that students in the honours program were overrepresented in our final sample (relative to their proportion in a typical graduation class), with the end result that approximately equal numbers of honours thesis students and conventional majors completed our survey. Of

course, the fact that honours thesis students were more likely to complete the survey is very likely related to their greater satisfaction with their undergraduate experience. To mitigate this selection effect, we conducted our analyses on the full sample (collapsing across type of student) and then separately for honours thesis students and conventional majors. In future studies, developing strategies to increase the response rate for conventional majors would help to avoid unrepresentative samples. At the same time, the large number of honours thesis students in our sample allowed us to test for differences between these students and conventional majors and to assess whether the predictors of satisfaction were the same for both groups of students; a smaller number of honours thesis students would have made such comparisons (especially the regression analyses) problematic.

Third, although we intentionally surveyed graduating students on the assumption that, in comparison to more junior students, they would be more familiar with the program and therefore in the best position to evaluate it, it is possible that this decision may have influenced our results in important ways. For example, some studies (e.g., Billups, 2008; Juillerat, 2000) have observed an inverse relationship between student satisfaction and year in program, such that satisfaction decreases as students' progress through their degree. If student satisfaction tends to decrease in this manner, then perhaps there are corresponding temporal changes in the factors that predict satisfaction. If so, testing a cross-section of students who are at varying stages of program completion or conducting a longitudinal study of student satisfaction would provide a more complete picture of the predictors of student satisfaction. If certain factors predict student satisfaction more effectively at different points in program than at others, then this information would enable departments to develop targeted strategies to maximize student satisfaction and retention through-out students' programs.

Fourth, our research assessed predictors of student satisfaction in a single psychology undergraduate program. Although we are confident that the findings of this study can be used to inform similar programs, the single site nature of the research may limit the generalizability of our findings to programs that are similar in size and focus (i.e., research-oriented departments with large undergraduate and graduate programs). The extent to which our findings generalise to institutions that are undergraduate focused and to psychology undergraduate programs outside of Canada is also unclear. Questions about the generalizability of our findings will remain unresolved until researchers evaluate the utility of these same predictors for students in other undergraduate programs.

Finally, although the predictors considered in this study accounted for a significant percentage of the variance in student satisfaction ratings (62%), they left considerable variability unaccounted for. This indicates that variables that were not captured by our focus groups also contribute to student satisfaction. It is likely that many of these variables are idiographic (e.g., a student's personal or family challenges; a poor fit between the student's interests and their major) and would be challenging to measure accurately, but this should be a goal of future studies nevertheless. It may also be the case that students do not have insight into all of the factors that contribute to their satisfaction with their degree program (see Bargh & Morsella, 2008). For this reason, it may be useful to ask other stakeholders (e.g., program administrators,

program advisors, faculty) what factors they consider important to student satisfaction and to incorporate these factors into student satisfaction assessments.

## Conclusions

The results of this study highlight the importance that psychology majors place on the quality of the teaching in their courses and the academic challenge they experience during their studies. The opportunity to acquire research experience is also highly valued, to the extent that students who complete a research thesis are generally more satisfied with their degree program than those who do not. These findings will be informative for psychology departments seeking to improve the satisfaction of students in their undergraduate programs.

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## Résumé

La psychologie est l'un des programmes d'études de premier cycle les plus populaires en Amérique du Nord. Pourtant, très peu d'étudiants se sont penchés sur l'opinion des diplômés au sujet de leur programme. L'objectif de la présente étude était de déterminer les facteurs qui contribuent à la satisfaction des étudiants envers leur diplôme en psychologie. Les participants étaient des personnes ayant obtenu un baccalauréat spécialisé en psychologie ( $N = 237$ ) dans une grande université canadienne. Trois cohortes (ayant terminé en 2013, 2014 et 2015) ont répondu à un questionnaire d'enquête de sortie exhaustif. Des analyses de régressions multiples ont permis de déterminer les principales variables prédictives de la satisfaction des étudiants à l'égard du programme d'études, tels la qualité de l'enseignement, le niveau du défi intellectuel et les possibilités de travaux de recherche. Des analyses additionnelles ont révélé que les étudiants devant soumettre un mémoire de recherche ont rapporté un niveau de satisfaction significativement plus élevé que ceux qui ont suivi un programme composé uniquement de cours. Ces résultats ainsi que d'autres mènent à plusieurs recommandations visant à accroître la satisfaction des étudiants des programmes de premier cycle en psychologie.

*Mots-clés* : satisfaction des étudiants, programme de premier cycle en psychologie, qualité de l'enseignement, recherche au premier cycle, défi intellectuel.

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## References

- Ahmad, S. Z. (2015). Evaluating student satisfaction of quality at international branch campuses. *Assessment & Evaluation in Higher Education*, 40, 488–507. <http://dx.doi.org/10.1080/02602938.2014.925082>
- Anderson, G., Tredway, C., & Calice, C. (2015). A longitudinal study of nursing students' perceptions of online course quality. *Journal of Interactive Learning Research*, 26, 5–21.
- Bain, K. (2004). *What the best college teachers do*. Cambridge, MA: Harvard University Press.
- Bargh, J. A., & Morsella, E. (2008). The unconscious mind. *Perspectives on Psychological Science*, 3, 73–79. <http://dx.doi.org/10.1111/j.1745-6916.2008.00064.x>
- Bean, J. P., & Bradley, R. K. (1986). Untangling the satisfaction-performance relationship for college students. *The Journal of Higher Education*, 57, 393–412. <http://dx.doi.org/10.2307/1980994>

- Bedi, R. P. (2016). A descriptive examination of Canadian counselling psychology doctoral programs. *Canadian Psychology, 57*, 83–91. <http://dx.doi.org/10.1037/cap0000047>
- Beqiri, M. S., Chase, N. M., & Bishka, A. (2010). Online course delivery: An empirical investigation of factors affecting student satisfaction. *Journal of Education for Business, 85*, 95–100. <http://dx.doi.org/10.1080/08832320903258527>
- Bergkvist, L., & Rossiter, J. R. (2007). The predictive validity of multiple-item versus single-item measures of the same constructs. *Journal of Marketing Research, 44*, 175–184. <http://dx.doi.org/10.1509/jmkr.44.2.175>
- Biasutti, M. (2011). The student experience of a collaborative e-learning university module. *Computers & Education, 57*, 1865–1875. <http://dx.doi.org/10.1016/j.compedu.2011.04.006>
- Bigne, E., Moliner, M. A., & Sanchez, J. (2003). Perceived quality and satisfaction in multi service organizations: The case of Spanish public services. *Journal of Services Marketing, 17*, 420–442. <http://dx.doi.org/10.1108/08876040310482801>
- Billups, F. D. (2008, October). *Measuring college student satisfaction: A multi-year study of the factors leading to persistence*. Paper presented at the Annual Meeting of the Northeastern Educational Research Association, Rocky Hill, CT.
- Bowman, L. L., & Waite, B. M. (2003). Volunteering in research: Student satisfaction and educational benefits. *Teaching of Psychology, 30*, 102–106. [http://dx.doi.org/10.1207/S15328023TOP3002\\_03](http://dx.doi.org/10.1207/S15328023TOP3002_03)
- Braxton, J. M., Bray, N. J., & Berger, J. B. (2000). Faculty teaching skills and their influences on the college student departure process. *Journal of College Student Development, 41*, 215–227.
- Brewer, G., Dewhurst, A. M., & Doran, D. (2012). Undergraduate research projects: Practice and perceptions. *Psychology Learning & Teaching, 11*, 208–217. <http://dx.doi.org/10.2304/plat.2012.11.2.208>
- Brown, G. D. A., Wood, A. M., Ogden, R. S., & Maltby, J. (2015). Do student evaluations of university reflect inaccurate beliefs or actual experience? A relative rank model. *Journal of Behavioral Decision Making, 28*, 14–26. <http://dx.doi.org/10.1002/bdm.1827>
- Browne, B., Kaldenberg, D., Browne, W., & Brown, D. (1998). Student as customer: Factors affecting satisfaction and assessments of institutional quality. *Journal of Marketing for Higher Education, 8*, 1–14. [http://dx.doi.org/10.1300/J050v08n03\\_01](http://dx.doi.org/10.1300/J050v08n03_01)
- Bryant, J. L. (2006). Assessing expectations and perceptions of the campus experience: The Noel-Levitz Student Satisfaction Inventory. *New Directions for Community Colleges, 134*. San Francisco, CA: Jossey-Bass.
- Butterfield, B. S. (2015). *Mind the gap: A mixed methods study of student satisfaction with faculty performance and course instruction in higher education* (Unpublished doctoral dissertation). Minneapolis, MN: University of Minnesota.
- Cain, P. (2016, September 9). University tuition fees in Canada rise 40 percent in a decade. *Global News*. Retrieved from <http://globalnews.ca/news/2924898/university-tuition-fees-rise-40-per-cent-in-a-decade/>
- Canadian Association of University Teachers. (2011–2012). *CAUT almanac of post-secondary education in Canada*. Ottawa, Ontario, Canada: Author.
- Carleton, R. N., Peluso, D. L., & Asmundson, G. J. G. (2010). Assessing the research activity of Canadian psychology departments with graduate programmes. *Canadian Psychology, 51*, 164–176. <http://dx.doi.org/10.1037/a0020193>
- Chen, H., Cohen, P., & Chen, S. (2010). How big is a big odds ratio? Interpreting the magnitudes of odds ratios in epidemiological studies. *Communications in Statistics Simulation and Computation, 39*, 860–864. <http://dx.doi.org/10.1080/03610911003650383>
- Childers, C., Williams, K., & Kemp, E. (2014). Emotions in the classroom: Examining environmental factors and student satisfaction. *Journal of Education for Business, 89*, 7–12. <http://dx.doi.org/10.1080/08832323.2012.738258>
- Churchill, G. A. (1979). A paradigm for developing better measures of marketing constructs. *Journal of Marketing Research, 16*, 64–73. <http://dx.doi.org/10.2307/3150876>
- Clayson, D. E., & Haley, D. A. (1990). Student evaluations in marketing: What is actually being measured? *Journal of Marketing Education, 12*, 9–17. <http://dx.doi.org/10.1177/027347539001200302>
- Clemes, M., Gan, C., & Kao, T. (2007). University student satisfaction: An empirical analysis. *Journal of Marketing for Higher Education, 17*, 292–325. <http://dx.doi.org/10.1080/08841240801912831>
- Corts, D. P., Lounsbury, J. W., Saudargas, R. A., & Tatum, H. E. (2000). Assessing undergraduates' satisfaction with their major department: A method and case study. *College Student Journal, 34*, 399–408.
- Curran, J. M., & Rosen, D. E. (2006). Student attitudes toward college courses: An examination of influences and intentions. *Journal of Marketing Education, 28*, 135–148. <http://dx.doi.org/10.1177/0273475306288401>
- DeShields, O. W., Jr., Kara, A., & Kaynak, E. (2005). Determinants of business student satisfaction and retention in higher education: Applying Herzberg's two-factor theory. *International Journal of Educational Management, 19*, 128–139. <http://dx.doi.org/10.1108/09513540510582426>
- Einarson, M. K., & Matier, M. W. (2005). Exploring race differences in correlates of seniors' satisfaction with undergraduate education. *Research in Higher Education, 46*, 641–676. <http://dx.doi.org/10.1007/s11162-004-4138-0>
- Eliophotou Menon, M. (2002). The mission of universities and the vocational paradigm: An investigation of students' perceptions. *Journal of Vocational Education and Training, 54*, 515–532. <http://dx.doi.org/10.1080/13636820200200217>
- Elliott, K. M. (2002). Key determinants of student satisfaction. *Journal of College Student Retention, 4*, 271–279. <http://dx.doi.org/10.2190/B2V7-R91M-6WXR-KCCR>
- Elliott, K. M., & Healy, M. A. (2001). Key factors influencing student satisfaction related to recruitment and retention. *Journal of Marketing for Higher Education, 10*, 1–11. [http://dx.doi.org/10.1300/J050v10n04\\_01](http://dx.doi.org/10.1300/J050v10n04_01)
- Elliott, K., & Shin, D. (2002). Student satisfaction: An alternative approach to assessing this important concept. *Journal of Higher Education Policy and Management, 24*, 197–209. <http://dx.doi.org/10.1080/1360080022000013518>
- Farrell, A. H., Semplonius, T., Shapira, M., Zhou, X., Laurence, S., Willoughby, T., . . . Evans, A. D. (2016). Research activity in Canadian developmental psychology programs. *Canadian Psychology, 57*, 76–82. <http://dx.doi.org/10.1037/cap0000040>
- Finney, T. G., & Finney, R. Z. (2010). Are students their universities' customers? An exploratory study. *Education + Training, 52*, 276–291. <http://dx.doi.org/10.1108/00400911011050954>
- Fischer, M. J. (2007). Settling into campus life: Difference by race/ethnicity in college involvement and outcomes. *The Journal of Higher Education, 78*, 125–161. <http://dx.doi.org/10.1353/jhe.2007.0009>
- Flores, A. M. (2014). *Student satisfaction with an online university and its mentoring program as predictors of student academic performance* (Doctoral dissertation). Retrieved from <http://search.proquest.com/docview/1466304636>
- Green, H. J., Hood, M., & Neumann, D. L. (2015). Predictors of student satisfaction with university psychology courses: A review. *Psychology Learning & Teaching, 14*, 131–146.
- Gruber, T., Lowrie, A., Brodowsky, G. H., Reppel, A. E., Voss, R., & Chowdhury, I. N. (2012). Investigating the influence of professor characteristics on student satisfaction and dissatisfaction: A comparative study. *Journal of Marketing Education, 34*, 165–178. <http://dx.doi.org/10.1177/0273475312450385>
- Gumport, P. J., Iannozzi, M., Shaman, S., & Zemsky, R. (1997). *Trends in United States higher education: From massification to post massification*. Stanford, CA: The National Center for Postsecondary Improvement, Stanford University.

- Guolla, M. (1999). Assessing the teaching quality to student satisfaction relationship: Applied customer satisfaction research in the classroom. *Journal of Marketing Theory and Practice*, 7, 87–97. <http://dx.doi.org/10.1080/10696679.1999.11501843>
- Hacker, A., & Dreifus, C. (2010). *Higher education? How colleges are wasting our money and failing our kids—And what we can do about it*. New York, NY: Times Books.
- Hartman, D. E., & Schmidt, S. L. (1995). Understanding student/alumni satisfaction from a consumer's perspective. *Research in Higher Education*, 36, 197–217. <http://dx.doi.org/10.1007/BF02207788>
- Hattie, J. A. C. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. London, UK: Routledge.
- Henkel, L. (2006). Increasing student involvement in cognitive aging research. *Educational Gerontology*, 32, 505–516. <http://dx.doi.org/10.1080/03601270600723684>
- Hennig-Thurau, T., Langer, M., & Hansen, U. (2001). Modeling and managing student loyalty: An approach based on the concept of relationship quality. *Journal of Service Research*, 3, 331–344. <http://dx.doi.org/10.1177/109467050134006>
- Holmes, J. D. (2014). Undergraduate psychology's scientific identity dilemma: Student and instructor interests and attitudes. *Teaching of Psychology*, 41, 104–109. <http://dx.doi.org/10.1177/0098628314530339>
- Hunt, K. H. (1977). CS/D—Overview and future directions. In K. H. Hunt (Ed.), *Conceptualization and measurement of consumer satisfaction and dissatisfaction* (pp. 455–488). Cambridge, MN: Marketing Science Institute.
- Juillerat, S. L. (2000). Assessing the expectations and satisfaction of sophomores. In L. A. Schreiner & J. A. Pattengale (Eds.), *Visible solutions for invisible students: Helping sophomores succeed* (pp. 19–30). Columbia, SC: University of South Carolina, National Resource Center for The First-Year Experience and Students in Transition.
- Juillerat, S. L., & Schreiner, L. (1996). The role of student satisfaction in the assessment of institutional effectiveness. *Assessment Update*, 8, 8–9. <http://dx.doi.org/10.1002/au.3650080108>
- Kane, D., Williams, J., & Cappuccini-Ansfield, G. (2008). Student satisfaction surveys: The value in taking an historical perspective. *Quality in Higher Education*, 14, 135–155. <http://dx.doi.org/10.1080/13538320802278347>
- Kemp, N., & Grieve, R. (2014). Face-to-face or face-to-screen? Undergraduates' opinions and test performance in classroom vs. online learning. *Frontiers in Psychology*, 5, 1278. <http://dx.doi.org/10.3389/fpsyg.2014.01278>
- Kuh, G. D. (2007). *Experiences that matter: Enhancing student learning and success*. Bloomington, IN: Center for Postsecondary Research.
- Letcher, D. W., & Neves, J. S. (2010). Determinants of undergraduate business student satisfaction. *Research in Higher Education Journal*, 6, 1–26.
- Looney, M. S., Thomas, J. H., & McDaniel, C. R. (2000, May). *More data on the effectiveness of a career course for psychology majors*. Poster session presented at the Annual Meeting of the Midwestern Psychological Association, Chicago, IL.
- Lyke, J., & Frank, M. (2012). Comparison of student learning outcomes in online and traditional classroom environments in a psychology course. *Journal of Instructional Psychology*, 39, 245–250.
- Maki, R. H., & Maki, W. S. (2003). Prediction of learning and satisfaction in web-based and lecture courses. *Journal of Educational Computing Research*, 28, 197–219. <http://dx.doi.org/10.2190/DXJU-7HGJ-1RVP-Q5F2>
- Malouff, J. M., Hall, L., Schutte, N. S., & Rooke, S. E. (2010). Use of motivational teaching techniques and psychology student satisfaction. *Psychology Learning & Teaching*, 9, 39–44. <http://dx.doi.org/10.2304/plat.2010.9.1.39>
- Marsh, H. W. (2007). Students' evaluations of university teaching: Dimensionality, reliability, validity, potential biases and usefulness. In R. P. Perry & J. C. Smart (Eds.), *The scholarship of teaching and learning in higher education: An evidence-based perspective* (pp. 319–383). New York, NY: Springer.
- Marsh, H. W., & Roche, L. A. (1997). Making students' evaluations of teaching effectiveness effective. *American Psychologist*, 52, 1187–1197. <http://dx.doi.org/10.1037/0003-066X.52.11.1187>
- Marsh, H. W., & Roche, L. A. (2000). Effects of grading leniency and low workload on students' evaluations of teaching: Popular myth, bias, validity, or innocent bystanders? *Journal of Educational Psychology*, 92, 202–228. <http://dx.doi.org/10.1037/0022-0663.92.1.202>
- National Center for Education Statistics, U.S. Department of Education. (2013). *Digest of Education Statistics 2013*. Washington, DC: National Center for Education Statistics.
- Oldfield, B. M., & Baron, S. (2000). Student perceptions of service quality in a UK university business and management faculty. *Quality Assurance in Education*, 8, 85–96. <http://dx.doi.org/10.1108/09684880010325600>
- Oliver, R. L. (1989). Processing satisfaction response in consumption: A suggested framework and response proposition. *Journal of Consumer Satisfaction, Dissatisfaction & Complaining Behavior*, 2, 1–16.
- Ontario Confederation of University Faculty Associations. (2014). *Data check: Class sizes continue to grow at Ontario Universities*. Retrieved from <http://ocufa.on.ca/blog-posts/data-check-class-sizes-continue-to-grow-at-ontarios-universities/>
- Palmer, S. R., & Holt, D. M. (2009). Examining student satisfaction with wholly online learning. *Journal of Computer Assisted Learning*, 25, 101–113. <http://dx.doi.org/10.1111/j.1365-2729.2008.00294.x>
- Patterson, P. G., Johnson, L. W., & Spreng, R. A. (1997). Modeling the determinants of customer satisfaction for business-to-business professional services. *Journal of the Academy of Marketing Science*, 25, 4–17. <http://dx.doi.org/10.1007/BF02894505>
- Perry, R. P., & Smart, J. (Eds.). (2007). *The scholarship of teaching and learning in higher education: An evidence-based perspective*. Utrecht, The Netherlands: Springer. <http://dx.doi.org/10.1007/1-4020-5742-3>
- Peter, P. J. (1979). Reliability: A review of psychometric basics and recent marketing practices. *Journal of Marketing Research*, 16, 6–17. <http://dx.doi.org/10.2307/3150868>
- Pike, G. R. (1993). The relationship between perceived learning and satisfaction with college: An alternative view. *Research in Higher Education*, 34, 23–40.
- Reisberg, L. (1999, October 8). Colleges struggle to keep would-be drop-outs enrolled. *The Chronicle of Higher Education*, 46, A54–A56.
- Rogers, D. L., Kranz, P. L., & Ferguson, C. J. (2012). A strategy for involving undergraduates in research. *Journal of Hispanic Higher Education*, 11, 55–66. <http://dx.doi.org/10.1177/1538192711435558>
- Russell, S. H., Hancock, M. P., & McCullough, J. (2007). The pipeline. Benefits of undergraduate research experiences. *Science*, 316, 548–549. <http://dx.doi.org/10.1126/science.1140384>
- Sain, R., & Brigham, T. A. (2003). The effect of a threaded discussion component on student satisfaction and performance. *Journal of Educational Computing Research*, 29, 419–430. <http://dx.doi.org/10.2190/8GBE-MUMJ-AHHF-NA3K>
- Schreiner, L. A. (2009). *Linking student satisfaction and retention*. Coralville, IA: Noel-Levitz.
- Schreiner, L. A., & Nelson, D. D. (2013). The contribution of student satisfaction to persistence. *Journal of College Student Retention*, 15, 73–111. <http://dx.doi.org/10.2190/CS.15.1.f>
- Shaker, E., & Macdonald, D. (2014). *Tier for two: Managing the optics of provincial tuition fee policies*. Ottawa, Ontario, Canada: Canadian Centre for Policy Alternatives.
- Sines, R. G., Jr., & Duckworth, E. A. (1994). Customer service in higher education. *Journal of Marketing for Higher Education*, 5, 1–15. [http://dx.doi.org/10.1300/J050v05n02\\_01](http://dx.doi.org/10.1300/J050v05n02_01)

- Smimou, K., & Dahl, D. W. (2012). On the relationship between students' perceptions of teaching quality, methods of assessment, and satisfaction. *Journal of Education for Business, 87*, 22–35. <http://dx.doi.org/10.1080/08832323.2010.550339>
- Tessema, M., Ready, K., & Astanie, M. (2014). Does part-time job affect college students' satisfaction and academic performance (GPA)? The case of a mid-sized public university. *International Journal of Business Administration, 5*, 1–10. <http://dx.doi.org/10.5430/ijba.v5n2p50>
- Tessema, M., Ready, K., & Malone, C. (2012). Effect of gender on college students' satisfaction and achievement: The case of a midsized Midwestern public university. *International Journal of Business and Social Science, 3*, 1–11.
- The Princeton Review. (2015, August 13). *Top ten most popular majors*. Retrieved from <http://www.princetonreview.com/college-advice/top-ten-college-majors>
- Thomas, E. H., & Galambos, N. (2004). What satisfies students? Mining student-opinion data with regression and decision tree analysis. *Research in Higher Education, 45*, 251–269. <http://dx.doi.org/10.1023/B:RIHE.0000019589.79439.6e>
- Umbach, P., & Porter, S. R. (2002). How do academic departments impact student satisfaction? Understanding the contextual effects of departments. *Research in Higher Education, 43*, 209–234. <http://dx.doi.org/10.1023/A:1014471708162>
- Votta-Bleeker, L., Tiessen, M., & Murdoch, M. (2016). A snapshot of Canada's psychology graduates: Initial analysis of the 2015 Psychology Graduates Survey. *Canadian Psychology, 57*, 172–180. <http://dx.doi.org/10.1037/cap0000059>
- Wanous, J. P., Reichers, A. E., & Hudy, M. J. (1997). Overall job satisfaction: How good are single-item measures? *Journal of Applied Psychology, 82*, 247–252. <http://dx.doi.org/10.1037/0021-9010.82.2.247>
- Ware, M. E., Badura, A. S., & Davis, S. F. (2002). Using student scholarship to develop student research and writing skills. *Teaching of Psychology, 29*, 151–154.
- Wayment, H. A., & Dickson, K. L. (2008). Increasing student participation in undergraduate research benefits students, faculty, and department. *Teaching of Psychology, 35*, 194–197. <http://dx.doi.org/10.1177/009862830803500307>
- Williams, O. (2011, December 9). Ratings due to 'staff seeing students as unimportant', claims Manchester University. *Mancunian Matters*. Retrieved from <http://www.mancunianmatters.co.uk/content/091256611-low-student-satisfaction-ratings-due-staff-seeing-students-unimportant-claims>
- Zhu, C. (2012). Student satisfaction, performance, and knowledge construction in online collaborative learning. *Journal of Educational Technology & Society, 15*, 127–136.

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