What makes a successful educational experience?

An exploration of the factors that contribute to student satisfaction and goal achievement

Abstract

This paper explores the concept of a successful educational experience by looking at factors that influence satisfaction and goal achievement. A regression model was developed to further investigate the major influences on students’ overall evaluation of their education.

A success measure was created by combining respondents’ ratings for satisfaction and goal achievement. The factors shown to affect success scores fall into four broad categories: those external to the institution attended, for example, age and gender; institutional, such as an institution’s location or size; program, relating directly to the programs offered; and intersecting, which refers to students’ outcomes, such as further education or employment.

The majority of the factors shown to have a significant effect on the success score are in the program area, with curriculum and quality of teaching showing the most influence. However, all on its own, the outcome of a training-related job has a significant impact on the success score.

Introduction

There are many objective ways to define student success—completing a credential, achieving a high GPA, going on to further education, getting a job—but evaluating a successful educational experience from the student’s point of view should involve more subjective measures. The BC College and Institute Student Outcomes (CISO) Survey provides a wealth of subjective information. Other than the objective demographic information and the basic yes/no outcomes questions, the respondents are asked what they thought of their programs, why they enrolled, if they were prepared for further education or employment, how satisfied they were, and so on. The definition of success used in this paper is based on student assessment, in particular, on responses to two questions from the survey: “How satisfied are you with the education you received?” and “To what extent did you achieve your most important objective for enrolling?”

The objectives of this paper were, first, to explore the concept of a successful educational experience for the student by looking at factors that influence satisfaction and goal achievement and, second, to develop a statistical model that can be used to investigate the major influences on students’ overall evaluation of their educational experience.

The approach used in this study is similar to a previous paper on student satisfaction (Understanding Student Satisfaction (Issue Paper Vol. 3 No. 1), which used 2002 CISO results), but this new paper will take a more in-depth look at the factors that influence former students’ assessments of their educational experience. These factors have been separated into levels: the
factors that are under an institution’s control (programs and services) and those that are not (students’ characteristics and financial circumstances). Students’ outcomes (employment and further education) may be related to the programs they took, but are not under the institutions’ direct control. Understanding how program or institution factors can influence students’ evaluation of their success can help institutions improve their students’ educational experiences.

Data for this paper come from the 2004 and 2005 CISO surveys. The two years of data are combined for most of the analysis. There were 18,000 respondents in 2004 and 17,671 in 2005.

This analysis uses a success measure, which combines the ratings given for satisfaction (on a scale of 1 to 4, where 1=not at all satisfied and 4=completely satisfied) with the ratings for achievement of the respondent’s most important objective for enrolling (from 1 to 4, where 1=not met at all and 4=completely met). Satisfaction and goal achievement can be expressed two ways: as a percentage of those who answer positively (completely or mainly satisfied and completely or mostly met their goals) or as a mean score. For each measure, a majority of former students indicated they were satisfied and met their goals; the means for satisfaction and goal achievement were 3.24 and 3.27 respectively. Using the combined measure, respondents’ overall mean success score was 3.25.

External Factors

Many factors can have an effect on students’ satisfaction with the education they received at their institutions and on their estimation of their goal achievement. Demographic factors, such as age, gender, Aboriginal status, or previous post-secondary education are all important considerations in an institution’s analysis of student ratings, but they are not things that can be changed; that is, they are “external” to the institution’s sphere of influence.

Typically, older students and females give higher ratings to satisfaction and achievement of their goals—that is, they are more likely to say they were completely or mainly satisfied with their education and that they completely or mostly met their most important objective for enrolling. This means that they also scored higher on the subjective success measure.

Aboriginal students gave higher ratings, while those who learned English as a second language gave lower ratings. If respondents had taken previous post-secondary education, they tended to be more satisfied with their educational experience. Those who had to interrupt their studies or take studies part time because of financial difficulties generally had lower success ratings.
Institutional factors are those that relate to the institution, not the student. Some of these are within the ability of the institution to change, while others are not. For example, institutional factors include institution size, location (region of BC), type and length of programs offered, facilities, and services. For this analysis, the CISO participating institutions were grouped into three size categories: small, medium, and large. It appeared that former students from small institutions were more likely to rate their experience as successful; there was an interaction with program type, however. While former Applied students tended to have higher success scores, students from small institutions who took Arts and Sciences programs were the most likely to feel their educational experience was successful; theirs was the highest success score—the number of respondents in this category was small, though (n=419).

Similarly, former students from shorter programs had higher success scores than those from longer programs. Those who took 3–6 month programs had an average score of 3.38, while respondents who were in 13–36 month programs scored 3.23. There were differences by program area, as well. The highest ratings were given by former students from nursing and health-related programs (3.49)—regardless of the length of their programs.

The success scores of respondents also varied by region, although there was some interaction with institution size, since the Lower Mainland is mostly made up of large institutions, while Northern BC and the Interior and Kootenays do not have any large institutions.

Other institutional factors include the facilities and services that are provided to students. The 2005 CISO survey included an extensive set of questions that asked respondents to rate
the quality of various services and facilities at their institutions. To determine if these factors were related to success, correlation analyses were performed. Correlations showed that the ratings of these institutional factors were associated with the success score, but this does not explain the relationship or imply causation.

Of the facilities and services institutions provide to students, learning support services, such as tutoring and mentoring, and program, personal, and career counselling were positively correlated with respondents’ evaluation of their educational experience. (As an illustration, those who said their learning support services were “very good” had an average score of 3.46 on the success measure, compared with 2.90 for those who felt the service was adequate to very poor.) Admissions and registration procedures and facilities also correlated positively with students’ success scores, although the correlation was not as strong.

**Program Factors**

Program factors are those that institutions may have the most ability to change. They fall into two areas; the first is based on former students’ evaluations of skill development—that is, on how well their studies helped them develop certain skills.

For this analysis, the skills that respondents evaluated were grouped into three skill sets: analytical, technical, and communications. Analytical skills include the ability to resolve problems, think critically, and to learn on one’s own. Technical skills include mathematics and using computers and other equipment. Communications skills are writing, reading, speaking, and working effectively with others.

In general, former students thought their programs had done a good job of giving them opportunities to develop skills—on scales that ranged from 1 to 5 (1=very poorly and 5=very well), respondents’ average scores were over 4.

The second area under program factors is based on respondents’ ratings of the quality of their programs. Responses to a number of survey questions have been grouped into four factors: teaching, curriculum, equipment and materials, and encouragement in class.

Teaching includes the quality of instruction and the availability and helpfulness of instructors; components of curriculum comprise organization of the program, being up to date, and covering the standards and topics used in the field; and equipment and materials includes computers, other equipment, textbooks, and library materials. Encouragement in class includes ratings of encouragement to think in new ways, opportunities for class discussion, and acquiring skills to combine information to create new ideas. Practical experience (that is, respondents’ evaluation of the balance of practical experience and instruction in their program) is included as a factor on its own.

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**Respondents gave high ratings to the opportunities they were given to develop skills**

<table>
<thead>
<tr>
<th>Skills</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analytical skills</td>
<td>4.15</td>
</tr>
<tr>
<td>Communication skills</td>
<td>4.13</td>
</tr>
<tr>
<td>Technical skills</td>
<td>4.01</td>
</tr>
</tbody>
</table>

**Respondents’ ratings of program quality varied; teaching was rated the highest**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching</td>
<td>4.21</td>
</tr>
<tr>
<td>Encouragement in Class</td>
<td>4.11</td>
</tr>
<tr>
<td>Curriculum</td>
<td>4.10</td>
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<tr>
<td>Practical Experience</td>
<td>3.92</td>
</tr>
<tr>
<td>Equipment &amp; Materials</td>
<td>3.86</td>
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</tbody>
</table>
Respondents gave high ratings to teaching—again on a scale of 1 to 5 (1=very poor and 5=very good). Curriculum was in the middle, while equipment and materials did not score as high.

With one exception, the highest ratings for program quality and opportunities to develop skills were from females, 30 and older, who had taken Arts and Sciences programs—the exception was technical skills, which got the highest rating from the males under 30 who had taken Applied programs.

By program area, most of the highest ratings for skill development and program quality were given by students from Health Related programs and Education and Library Science. It’s encouraging to note that the highest rating for each factor came from respondents who took programs that were related to that factor; for example, the highest rating for curriculum was from former Education and Library Science students.

Generally, the items that were rated higher by respondents had higher positive correlations to the *success* score. The strongest correlation between ratings and *success* was in the area of curriculum, with teaching and encouragement in class ranking next. The opportunities given to develop skills—communication, analytical, and technical—followed, in that order. Ratings of equipment and materials had a weaker positive correlation with the measurement of *success*.

### Intersecting Factors

Intersecting factors could also be called student outcomes. While outcomes, such as the final grade point average (GPA) achieved, further studies taken, or training-related employment obtained, are often related to the programs that students took, they are not under institutions’ control.

There were strong correlations between the outcomes of students and how they rated their education. Students who were in training-related employment at the time of the survey tended to be very satisfied with their education and to say that they achieved their objectives for enrolling. Likewise, students who were taking further studies gave high ratings to these measures; as did those with higher GPAs (their final GPA from their program).
Not surprisingly, former students with the highest GPAs (3.0 to 4.0) tended to have higher success scores, as did those who were continuing their education or those who were employed in occupations they considered to be related to the programs they took.

The respondents who were in another program of study at the time of the survey and whose goal for enrolling in their program had been to complete the requirements to transfer to another program had a higher-than-average success score: 3.34. On the other hand, the respondents who were employed (including those who were in training-related employment) and who had enrolled for job-related reasons did not have appreciably higher success scores than those who enrolled for other reasons.

Interestingly, the former students who had more than one reason for enrolling in their programs were more likely to say their educational experience was successful, regardless of outcome. In fact, the more goals they had, the more successful they thought they were. This pattern held whether respondents were working, studying, or working and studying at the time of the survey.

### A Success Model

What factors contribute to a student’s successful educational experience? Correlation procedures show the individual factors that are associated with a student’s success score, but do not explain how factors affect success. A regression analysis, on the other hand, allows an assessment of the influence of several independent variables simultaneously and in relation to one another. Regression techniques were used to model the relative influences of selected factors (i.e., independent variables) on success (the dependent variable).

An initial regression model was generated using most of the independent variables described in this paper. While this model explained (or predicted) 43.2 percent of the variability in the success score a number of the variables did not contribute significantly. A stepwise regression method was used—with all the initial variables—to reduce the number of variables for the final model. The procedure starts with the most significant variable and keeps adding until all the variables that contribute significantly have been included. The result showed that eight of the variables entered accounted for most of the variability explained by the model.

To confirm this result, these eight variables were entered again into a regression—by themselves they explained or predicted

<table>
<thead>
<tr>
<th>Variable or Index</th>
<th>Unstandardized Coefficients (B)</th>
<th>Standardized Coefficients ($\beta$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>-0.0464</td>
<td></td>
</tr>
<tr>
<td>Training-related job</td>
<td>0.131</td>
<td>0.251</td>
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<td>Curriculum</td>
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<td>Teaching</td>
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<td>Communication skills</td>
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<tr>
<td>Final GPA</td>
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<td>0.111</td>
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<td>Practical experience</td>
<td>0.066</td>
<td>0.101</td>
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<tr>
<td>Further studies</td>
<td>0.131</td>
<td>0.096</td>
</tr>
<tr>
<td>Located outside Lower Mainland</td>
<td>0.046</td>
<td>0.032</td>
</tr>
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</table>
41 percent of the variability in the success score.\textsuperscript{11} The output from the analysis includes two coefficients: the standardized coefficient (\(\beta\)), which puts all the variables on the same scale so their relative contributions to the model can be assessed, and the unstandardized coefficients (B), which can be used in calculations to predict success.

While this final regression model contains a mix of factors, it should be noted that none of the external factors are included. Even though students' age and gender have persistent effects on program ratings and other results, they did not make a significant contribution in the regression analysis. Most of the variables that were significant were from the program factors, although some intersecting factors (especially training-related employment) contributed significantly to students’ estimation of success. During the course of the analysis using all factors, there was some indication that learning support services, from the institutional factors, would contribute something to the success score, but additional data are needed to confirm this. The only other institutional factor that makes a significant—albeit small—contribution is attending an institution that was located outside the Lower Mainland.\textsuperscript{12}

The program factors that show the most influence on success are: curriculum, teaching, communication skills, and practical experience. These items alone explain 32.6 percent of the variation in the success score.

Although the model shown here was developed using system-level data, each institution could use a similar procedure to model their own data and examine the factors that most influence the success scores of their students.

The following diagram illustrates the relative contributions of the factors in the regression model.
Conclusion

This exploration of the factors that influence students’ estimation of the success of their educational experience included the creation of a success measure, which was based on former students’ overall satisfaction with their education and the extent to which their most important objective for enrolling was met.

The factors that affect success scores fall into different categories, from items that are completely external to an institution’s influence, such as a student’s age or gender, to those that are directly related to an institution’s programs, such as curriculum and quality of teaching.

In addition, institutional factors have an effect; for example, students from smaller institutions are likely to have higher success scores, while those from the Lower Mainland have the lowest. The services offered by an institution, especially learning support services, can also have a positive impact on the final success score.

Student outcomes—especially training-related employment, but also final grade point average (GPA) and further studies—all have impacts on the success score. These are called intersecting factors because while institutions cannot control students’ outcomes, they are obviously related to the type of institution students attended, the programs they took, and the services they used.

The factors that institutions may have the most ability to change are in the program area—the regression model developed to illustrate the factors that affect success showed program factors to be the most significant overall, although the intersecting factor, training-related employment, had a large impact on its own. Of the program factors, curriculum, teaching, communication skills, and practical experience show the most influence on success.

Understanding how program or institutional factors can influence students’ evaluation of their success can help institutions improve their students’ educational experiences. While each institution could have a different result, at the system level, students are more likely to achieve their goals and be satisfied with their education if their institutions maintain high teaching standards and have curricula that are relevant, up-to-date, and include practical experience and a focus on communication skills.

About the BC College and Institute Student Outcomes Survey

The BC College and Institute Student Outcomes Survey (CISO) is an annual province-wide survey of former students from BC’s public colleges, university colleges, and institutes, and from Thompson Rivers University. It is conducted with funding from the Ministry of Advanced Education and from the post-secondary institutions. Former students are contacted 9 to 20 months after completing all, or a significant portion, of their program of study and asked to evaluate their educational experience and to talk about their employment outcomes, further education, and personal development.

The results of the survey are used by the institutions to improve programs and services. The Ministry of Advanced Education uses the information for post-secondary policy development and accountability. Students, parents, and the general public can view Student Outcomes Reports through the BC Student Outcomes web site (http://outcomes.bcstats.gov.bc.ca/SORS/) or Education Planner (http://www.educationplanner.bc.ca/) to help them make informed post-secondary education choices.

The British Columbia Outcomes Working Group (OWG) oversees the survey project. The OWG is a long-standing partnership among the Ministry of Advanced Education, colleges, university colleges, institutes, Thompson Rivers University, and a number of system-wide organizations: the Senior Academic Administrators’ Forum, the Senior Educational Services Administrators’ Forum, the BC Registrars’ Association, and the BC Council on Admissions and Transfer.

For more information on the CISO project, please see http://outcomes.bcstats.gov.bc.ca/.

Endnotes

1 Since 2005, the satisfaction measure has changed: 2005 was the last year that the scale used was: “completely satisfied,” “mainly satisfied,” “partially satisfied,” or “not at all satisfied.”
2 The question, Did you learn English as a second language? was not asked in 2004; the results shown are from 2004 data only.
3 Small institutions (n=7) have fewer than 600 respondents from 2004 and 2005; medium institutions (n=6) have from 600 to 2000; and large institutions (n=9) have over 2000 respondents.
4 “Applied” programs are programs designed to lead to employment in a specific field.
5 Arts and Sciences programs consist of courses in the liberal arts, humanities, and social or physical sciences and generally lead to further studies.

6 Two methods of correlation were used: Pearson’s correlation coefficient and Spearman’s rho. The latter is appropriate for nonparametric data and was run to confirm the results—the coefficients reported in the chart are Pearson’s r. All results were highly significant.

7 Respondents to the CISO survey were asked to rate how well their program helped them to develop 10 different skills; their responses were grouped thematically into the three skill sets described. For each skill set, the variables were averaged on a case-by-case basis, giving each respondent a mean score. The skill sets were confirmed with factor and reliability analyses.

8 The grouped rating scores were created the same way as the skill sets described above.

9 The questions to do with finances were not included—the finances variables cannot be used in the same regression analysis as the variables from the services questions, since the respondents answer either the finances questions or the services questions, not both.

10 For this model, 24 variables were entered, including the indexes described in earlier sections of this paper. The R-Square was .432; the adjusted R-Square was .417. This model actually used data from 2005 only, since the services questions (part of the institutional factors) were not asked in 2004.

11 This model used data from 2004 and 2005, since none of the factors that were based on the services questions were included. The coefficients listed were statistically significant (p<.001).

12 Taking into account the fact that most of the Lower Mainland institutions are large, the initial model did include the variable for size of institution, but its contribution turned out to be negligible.