

## DOCUMENT RESUME

ED 480 921

HE 036 146

AUTHOR Belcheir, Marcia J.  
TITLE What Predicts Perceived Gains in Learning and in Satisfaction.  
Research Report 2001-02.  
INSTITUTION Boise State Univ., ID. Office of Institutional Assessment.  
REPORT NO BSU-RR-2001-02  
PUB DATE 2001-05-00  
NOTE 16p.; For the related study of student engagement, see HE 036 144.  
PUB TYPE Reports - Research (143)  
EDRS PRICE EDRS Price MF01/PC01 Plus Postage.  
DESCRIPTORS \*College Students; Higher Education; \*Individual Development;  
\*Prediction; \*Satisfaction; Student Attitudes; Student Surveys  
IDENTIFIERS \*Boise State University ID; \*National Survey of Student Engagement;  
Student Disengagement

## ABSTRACT

This study is a followup to a study that reported on the results of the National Survey of Student Engagement (NSSE) for Boise State University freshmen and seniors. This study examined which of the many activities on the NSSE best predicted personal estimates of growth while at Boise State as well as perceived satisfaction with the university. Data from 200 freshmen and 243 seniors indicate that asking students to work hard and think at higher levels pays off in growth. Students reporting more growth also reported working harder than they thought they could to meet an instructor's expectations and taking courses that placed more emphasis on the mental activities of analysis, application, evaluation, and synthesis. Social experiences were also found to be an important part of growth, especially personal and analytical growth. Faculty feedback and interactions with students also help students grow, just as combining academic and community experiences increases growth. The most important variable in predicting satisfaction was whether the student would choose Boise State again if starting over. The quality of relationships with faculty and administration were also important factors. Demographic variables relate to growth, but are not as important as some other measures. (SLD)

Reproductions supplied by EDRS are the best that can be made  
from the original document.

# Research Reports

Institutional Assessment  
Boise State University

## **What Predicts Perceived Gains in Learning and in Satisfaction**

**Research Report 2001 – 02**

**Marcia J. Belcheir**

**Coordinator, Office of Institutional Assessment**

**Boise State University**

**May 2001**

### ABSTRACT

This study was a follow-up to RR 2000-04, which reported on the results of the National Survey of Student Engagement (NSSE) for Boise State freshmen and seniors. The purpose of this study was to uncover which of the many activities included on the NSSE best predicted personal estimates of growth while at Boise State as well as satisfaction with the institution.

Measures of growth fell into three categories: personal, analytical, and communications skills. Satisfaction was measured by an item that asked students to evaluate their educational experience so far. The variables used to predict growth and satisfaction covered classroom experiences, out-of-class experiences and activities, and demographic items such as gender, age, credit load, and major.

Among the findings of the report:

**Asking students to work hard and think at higher levels pays off in growth.** Students reporting more growth also report working harder than they thought they could to meet an instructor's expectations and taking courses that place more emphasis on the mental activities of analysis, application, evaluation, and synthesis.

**Social experiences are also an important part of growth, especially personal and analytic growth.** Students who felt Boise State provides the support they need to thrive socially also report more personal growth. Contact with students from other backgrounds is also important; so is time spent on co-curricular activities.

**Faculty feedback and interactions with students also help students grow.** This includes frequency of feedback on academic performance, discussions about career plans, and use of e-mail.

U.S. DEPARTMENT OF EDUCATION  
Office of Educational Research and Improvement  
EDUCATIONAL RESOURCES INFORMATION  
CENTER (ERIC)

- This document has been reproduced as received from the person or organization originating it.
- Minor changes have been made to improve reproduction quality.

- Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

PERMISSION TO REPRODUCE AND  
DISSEMINATE THIS MATERIAL HAS  
BEEN GRANTED BY

Marcia J. Belcheir, Coordinator  
Office of Institutional Assessment

TO THE EDUCATIONAL RESOURCES  
INFORMATION CENTER (ERIC)

1

**Combining academic and community experiences increases growth.** Specifically, students who participated in community-based projects as part of a course also rated themselves more highly in personal growth. Off-campus work also related to growth in communication skills.

**The most important variable in predicting satisfaction is whether the student would choose Boise State again if starting over.** Some have speculated that because so many Boise State students are place-bound without many options for an education, satisfaction and continued enrollment are less closely linked at BSU than at those institutions where students are freer to change location. This finding indicates, however, that the two are still strongly related at Boise State.

**The quality of relationships with faculty and administration also are important factors in predicting satisfaction.** Academics, however, also plays a role. Working off-campus decreases satisfaction with Boise State.

**Demographic variables relate to growth, but are not as important as some other measures.** Women report growing more personally, while men report growing more analytically. Other factors include number of credits, transfer status, and major. No demographic variable was significant enough to include in predicting satisfaction.

## WHAT PREDICTS PERCEIVED GAINS IN LEARNING AND IN SATISFACTION FOR BOISE STATE STUDENTS?

Last year Boise State University participated in the first administration of the National Survey of Student Engagement (NSSE). The NSSE provides a new approach to measuring institutional quality by focusing on the activities that promote learning rather than on the more traditional measures of quality such as reputation and freshman SAT scores. A prior report (RR 2000-04) detailed the responses from Boise State students and provided comparisons to other institutions who participated in the survey. Findings revealed that Boise State students were much more likely to be working and caring for children than were students elsewhere. In addition, while Boise State was modestly below the average on a number of engagement and satisfaction items, when the items were combined into benchmarks, Boise State was markedly below other institutions in all five benchmark areas: level of academic challenge, active and collaborative learning, student interactions with faculty members, enriching educational experiences, and supportive campus environment.

Knowing that our students and our metropolitan environment are somewhat different than elsewhere, it was felt that Boise State needed better information on which activities were related to the greatest perceived gains in learning and satisfaction for our unique student group. The findings will provide Boise State with a better perspective in knowing where to begin improvement work, focusing particularly on those variables that the institution has at least some control over.

### PURPOSE OF THE STUDY

---

This study sought to answer the following questions:

1. What best predicts growth while in college at Boise State University?
2. What best predicts overall satisfaction with the institution?

By answering these questions, Boise State can use the information to decide where to place additional resources, whether those resources are time, money, people, or space. Indeed, this study is being completed in time to be a part of the President's 2001 Annual Planning Meeting, so these very questions can be addressed.

This study, then, provides a springboard for discussion for department chairpersons, area heads, student services personnel, vice presidents, and the president to plan for change. To help organize the discussion, variables which relate to growth and satisfaction will be identified as in-class variables, out-of-class variables, or demographic variables.

## METHODOLOGY

---

To participate in the NSSE survey, Boise State sent a file containing names and addresses of all freshmen and seniors. The NSSE staff then drew a random sample of 1,000—500 BSU freshmen and 500 BSU seniors. About 45% of those surveyed from Boise State responded; this study will include data from 200 freshmen and 243 seniors. Further details on student demographics can be found in RR 2000-04.

To determine the underlying factors in student growth, a maximum likelihood factor analysis with Varimax rotation was conducted on the 14 items where students assessed their growth (see Appendix A for a copy of the survey). The best fit was obtained for three factors. Factor 1, named Personal Growth, included items such as “understanding yourself” and “being honest and truthful.” Factor 2, named Analytic Growth, included items such as “analyzing quantitative problems” and “thinking critically and analytically.” Factor 3, named Communication Growth, included the items “writing clearly and effectively” and “speaking clearly and effectively.” Factor scores were then formed for each student that reflected the student’s ratings on his/her personal, analytic, and communication growth. The results of the factor analysis can be found in Table 1.

These three factor scores (personal growth, analytic growth, communication growth) became the dependent variables in the prediction equations. A fourth dependent variable to measure student satisfaction was based on an item that asked students to evaluate their entire educational experience so far. Students could pick one of four choices in their evaluation: excellent (4), good (3), fair (2), or poor (1).

The predictor variables could generally be classified as falling into one of three categories: in-class, out-of-class (or general environment), or demographic. The in-class variables from the survey included 20 items on academic activities such as frequency of class presentations and feedback on performance, 4 items on the amount of reading and writing, one item on the main types of examinations they took, and 5 items on level of mental activities encountered in their classes (e.g., memorization, analysis, synthesis).

The out-of-class predictor variables included estimates of time spent weekly on studying, working on- and off-campus, caring for dependents, co-curricular activities, and relaxing and socializing. Other items which fell in this category included 5 items on student perceptions of the extent the university emphasized support and development in several areas, 3 items on relationships (faculty, students, administration), and one where students were asked in they would go to the same institution again if starting over.

Demographic items included class (freshman or senior), gender, age, credit load, and whether the student transferred or began their college education at Boise State. In addition, student majors were divided into eight categories and included as demographic variables (Business, Education, Engineering, Health-related fields, Humanities, Physical sciences, Social sciences, and Other).

While a number of approaches were tried to select the best set of variables for each prediction equation, the stepwise approach to regression was ultimately settled upon. In this approach, all variables that met the 0.15 significance level to enter and stay were included in the model. This subset of variables was then used in further regression equations until only variables with  $p < .10$  remained in the final model. To determine if freshmen and seniors needed separate equations to predict growth and satisfaction, interaction terms for class (freshmen or senior) with the other variables were tested for significance; results indicated that the same equation could be applied to both groups.

## RESULTS

---

### What best predicts personal growth?

Predicting the amount of personal growth students believe they have experienced involved a combination of 12 variables (see Table 2). Five were considered to be “in-class” variables, five were “out-of-class” variables, and two were demographic variables. The regression equation, however, only accounted for about 25% of the variability in personal growth scores, indicating that many other factors remain to be identified.

The equation indicated that students who perceive themselves as having grown more personally had in class:

- Worked harder than they thought they could to meet an instructor’s standards or expectations compared to their peers
- Received less prompt feedback on their academic performance than did students who felt they had grown less
- Took more courses where the emphasis was on making judgments about the value of information, arguments, or methods compared to their peers
- Participated in more community-based projects as part of a regular course
- Re-wrote papers or assignments less than their peers

Out of class, students who grew more personally were more likely to:

- Feel BSU emphasized providing the support needed to thrive socially
- Have fewer serious conversations with students of a different race or ethnicity
- Have more serious conversations with students whose religious beliefs, political opinions or personal values are very different
- Evaluate their entire educational experience positively
- Feel the college emphasized contact among students from different economic, social and racial or ethnic backgrounds

Gender also played a role with women generally believing they had grown more personally than men did. In addition, students who were enrolled for a heavier course load felt they had grown more personally compared to students taking fewer credits.

### What predicted growth in analytical ability and critical thinking skills?

The model used to predict growth in analytical and critical thinking skills was a better fit than the one for personal growth. The equation accounted for about 40% of the variability in analytical growth and included 13 variables. Three variables were in-class variables; seven were out-of-class variables, and three were demographic variables. Details are provided in Table 3.

Looking at in-class activities, students who indicated they grew more in their analytical skills also:

- Took more courses that emphasized analyzing the basic elements of an idea, experience or theory such as examining a particular case in depth
- Took more courses that emphasized applying theories or concepts to practical problems or in new situations
- Received more prompt feedback from faculty on their academic performance.

Out of class, students who grew more analytically also:

- Evaluated their entire educational experience more positively
- More frequently discussed ideas from their readings or classes with others outside of class
- Were more positive about the extent that BSU encourages contact among students from different economic, social and racial or ethnic backgrounds
- Spent more hours per week participating in co-curricular activities
- More frequently used e-mail to communicate with an instructor or other students
- Felt more positive about the extent that BSU emphasizes providing the support needed to help them succeed
- spent more time working for pay **on-campus**

A number of demographic variables were also important in predicting analytical growth. Gender was again a significant factor. However, in this case, men generally felt that they had grown more analytically than the women did. Also, students who transferred to BSU felt they had grown more analytically than did students who began their college career here. Business majors as a group generally felt they had grown more in their analytical skills than did students with other majors.

### What predicts growth in communication skills?

It was about as difficult to predict communication growth as it was to predict personal growth. While the communication growth equation also had 13 variables, it only accounted for 27% of the variance in student estimates of communication growth. Five of the variables were from in-class items, five were out-of-class items, and three were demographic items. See Table 4 for details.

In terms of activities that occur in class, students who grew more in communication skills also:

- Made more class presentations
- Worked harder than they thought they could to meet an instructor's standards or expectations

- Wrote more written papers or reports of fewer than 20 pages
- Took more essay exams or open-ended problems instead of multiple-choice tests
- Took more courses that emphasized synthesizing and organizing ideas, information, or experiences into new, more complex interpretations and relationships

Out of class, these students also:

- Felt more positively about their entire educational experience compared to students who indicated they had grown less in communication skills
- Talked more often about career plans with a faculty member or advisor
- Were less involved in tutoring other students
- Had fewer serious conversations with other students whose religious beliefs, political opinions, or personal values were very different
- Spent more hours working for pay **off-campus**

Again, demographics played a role in predicting communication growth. Students who majored in one of the social sciences or in business or one of the humanities also felt their communication skills improved more than did students with other majors.

What predicts student satisfaction with the entire educational experience?

It was easier to predict satisfaction with the educational experience compared to the three growth areas. Perhaps the reduced variance played a role. Perhaps it is simply easier to predict satisfaction than growth. Whatever the reason, the final regression equation accounted for 60% of the variability in satisfaction ratings and included ten variables (see Table 5). Some of the variables had already appeared in one or more of the growth equations; others were new to the satisfaction equation.

The variable that was most predictive of overall satisfaction was whether or not students would go to the same college again if starting all over ( $r=.63$ ). Not surprisingly, students who more strongly indicated they would start again at Boise State also had higher satisfaction ratings. Also, students who indicated that they had grown more in their analytic skills and their communication skills were likely to also give higher satisfaction ratings.

In addition, all of the in-class variables in this equation had already appeared in predicting student growth. Specifically, students who indicated they more frequently had to work harder than they thought they could to meet an instructor's standards were also more satisfied with their educational experience. So were students who made more in-class presentations. On the other hand, students who often had to rewrite their papers several times were less satisfied.

Shifting to the larger academic environment, students who gave higher ratings on the quality of their relationships with faculty members and with administrative personnel and offices were also more satisfied with their overall educational experience. Again, the supportive academic environment variable showed up as a significant predictor of satisfaction with those students who rated the university higher on this aspect also giving higher ratings to the quality of their overall educational experience. In addition, students who worked more hours off campus were less satisfied with their entire educational experience. This relationship is opposite to the finding on



growth in communication where students who worked more hours also rated themselves as having grown more in this area.

## DISCUSSION

---

This study sought to discover what variables included in the National Survey of Student Engagement (NSSE) best predicted growth and satisfaction for Boise State University students. Predictions were developed for three growth areas (personal, analytical, and communication) and for a general satisfaction measure where students evaluated their entire academic experience as excellent, good, fair or poor. For all three growth areas, a combination of variables covering the classroom experience, out-of-class experience, and student demographics were needed to best explain the dependent variable. Satisfaction was best predicted by in-class and out-of-class variables; demographics failed to play a strong role in satisfaction.

The data provided the best explanation for the satisfaction measure ( $R^2=.60$ ) followed by the prediction of growth in analytic skills ( $R^2=.40$ ). Personal growth and communication skills growth were more difficult to predict ( $R^2=.26$  and  $.27$  respectively). Still, the variables that emerged for each growth area helped provide signposts for improving the educational experience of students.

Perhaps the biggest finding from the study was the confirmation that asking students to work hard and think at higher levels pays off in growth. For example, the frequency that students reported they had worked harder than they thought they could to meet an instructor's expectations was one of the most predictive variables for both personal and communications growth. In addition, students who reported their courses placed more emphasis on the mental activities of analysis, application, evaluation, and/or synthesis also reported more growth in one of more of the three areas. Using more essay exams, writing more short papers, and making more class presentations also correlated with growth in communication skills.

Social experiences also were an important part of growth, especially personal and analytic growth. The variable which related most highly to personal growth was the extent that students thought that Boise State provided the support needed to thrive socially. Other important variables in personal growth were frequency of serious conversations with students with different religious beliefs or political opinions and the extent that students felt Boise State encouraged contact among students from different backgrounds.

It was somewhat surprising to find that social experiences also played a role in analytic growth. Students who indicated that they had grown more analytically also discussed ideas from class with others outside of class (perhaps as a form of processing) and spent more time participating in co-curricular activities. Those who grew more analytically also felt more strongly that Boise State encouraged contact among students from different backgrounds, probably because that was their experience.

Growth in communication skills, on the other hand, showed little relationship to social contacts. In fact, the one "social" item from the survey included in the regression equation had a negative

relationship. It indicated that students who had grown more socially than their peers also said they had *fewer* serious conversations with students who held different beliefs. This finding is somewhat difficult to explain, and the author is inclined to believe that the relationship will probably not be found again when the NSSE survey is next administered.

As found in prior research, faculty feedback and interactions with students also helped students grow. The frequency of prompt feedback from faculty on students' academic performance was a factor in growing both personally and analytically. However, the relationship between frequency of feedback and growth was different for the two areas. In the case of personal growth, less feedback was related to more growth, perhaps because students were forced to rely more upon themselves and deal with uncertainty. For analytic growth, more feedback was related to greater growth. In addition, students who talked more frequently about their career plans with faculty (or an advisor) grew more in their communication skills. Interactions did not have to be face-to-face. Students who used e-mail more to communicate with faculty (and other students) also indicated they had grown more analytically.

There were also indications that combining academic and community experiences increased growth. Specifically, students who had participated in a community-based project as part of a course also rated themselves more highly in personal growth. Students who spent more hours working off-campus also experienced more growth in communication skills, a finding that might be explained by the use of the developing oral and written skills on the job.

The general environment played a bigger role in increased student satisfaction than it did overall for growth. The quality of relationships with faculty and administration were very important factors in predicting satisfaction. So were perceptions of the college as a place which provided the support that students needed to help them succeed.

Academics, however, were still an important part of the satisfaction equation. Both growth in analytic skills and growth in communication skills were included when predicting satisfaction. Two in-class items were also included: frequency of class presentations and frequency that students felt they had worked harder than they thought they could to meet an instructor's standards.

One in-class variable that showed a negative relationship to satisfaction was the number of times that students re-wrote papers, with students who said they had re-written more papers also showing lower satisfaction levels. A similar negative relationship between re-writing and personal growth was found. This leads the author to speculate that while instructors may think of this behavior as part of the editing process and a factor in improving writing, students may view the same thing with frustration and see it as showing a lack of clarity in the original assignment. Alternatively, these students may have poorer writing skills that also relate to reduced satisfaction and personal growth. If this were the case, however, the number of re-writes should appear as a predictor of growth in communication skills. This was not found.

Any discussion of satisfaction must note that by far the most important variable in predicting satisfaction was whether students said they would choose Boise State again if starting all over. The finding is intriguing mainly because Boise State has had few competitors in the region.

Most Boise State students are place-bound and if they want an economical education, Boise State is the only choice. Therefore, some have speculated that satisfaction would play a smaller role in the decision to continue at Boise State than at institutions with more competitors. This finding hints, however, that satisfaction is still strongly linked to continued enrollment at Boise State.

Though demographics are beyond the control of the university, they also played a part in both growth and satisfaction. As found for previous studies, students who work tended to be less satisfied with their educational experience. Gender was also a factor with women growing more personally and men growing more analytically. Students taking more credits felt they grew more personally, while students who transferred to Boise State felt they grew more analytically than those who began their college career at BSU.

The major that students were taking was also significant in some cases. Being a business major increased analytic and communications skills growth, while majoring in the social sciences or humanities increased communications growth. While major could be considered a demographic variable and beyond the control of the institution, it could also reflect what students do in and out of class and thus also reflect program quality.

This study provides some guidelines for improving the academic experience for students at Boise State. One weakness, however, is that the study is based on self-report and personal perceptions. We make the assumption that what students say about their experiences—at least their in-class experiences—is based on what actually happens in class. It would be useful, however, to determine how the courses that students take relate to their perceptions of growth. Perhaps a future study can tie down the contributions of particular courses to perceived growth in learning, both in general education and in the major.

Table 1. Factor loadings<sup>1</sup> and communalities

To what extent has your college education contributed to:	Personal Growth	Analytic Growth	Communication Growth	Communality	Weight
Understanding yourself	.81			.69	3.20
Being honest and truthful	.74			.57	2.35
Learning effectively on your own	.59	.40		.54	2.17
Understanding people of other racial and ethnic backgrounds	.59			.43	1.76
Working effectively with others	.51			.43	1.75
Contributing to the welfare of your community	.48			.31	1.44
Analyzing quantitative problems		.69		.54	2.18
Thinking critically and analytically		.66		.61	2.59
Using computing and information technology		.42		.23	1.30
Acquiring job or work-related knowledge and skills		.38		.24	1.31
Acquiring a broad general education		.37		.29	1.41
Writing clearly and effectively			.71	.62	2.63
Speaking clearly and effectively			.69	.68	3.14
Voting in elections				.13	1.15
Total:				6.32	14.40
Weighted variance explained by factor	6.36	4.20	3.83		
Unweighted variance explained by factor	2.80	2.02	1.50		

<sup>1</sup> Loadings of .35 and above are displayed to help reveal the factor structure.

Table 2. Final regression equation for predicting scores on the personal growth factor<sup>2</sup>

Variable	Parameter Est.	Std. Error	t-value	Pr > t
Intercept	-2.089	0.286	-7.29	<.0001
To what extent does your institution emphasize providing the support you need to thrive socially (ENVSOCAL)	0.244	0.051	4.75	<.0001
<i>How often have you worked harder than you thought you could to meet an instructor's standards or expectations (WORKHARD)</i>	0.212	0.047	4.54	<.0001
How often have you had serious conversations with students of a different race or ethnicity than your own (DIVRSTUD)	-0.143	0.047	-3.07	.0023
<i>How often have you received prompt feedback from faculty on your academic performance (FACFEED)</i>	-0.149	0.051	-2.91	.0038
<i>Gender (1=male, 2=female) (GENDER)</i>	0.222	0.080	2.78	.0057
<i>How often have you had serious conversations with other students whose religious beliefs political opinions, or personal values were very different from yours (DIFFSTUD)</i>	0.141	0.051	2.78	.0056
To what extent does your coursework emphasize making judgments about the value of information, arguments, or methods (EVALUATE)	0.116	0.043	2.69	.0074
How often have you participated in a community-based project as part of a regular course (COMMPROJ)	0.142	0.054	2.63	.0089
<i>How often have you rewritten a paper or assignment several times (REWROPAP)</i>	-0.101	0.041	-2.45	.0146
<i>How would you evaluate your entire educational experience (ENTIREXP)</i>	0.140	0.063	2.22	.0272
<i>To what extent does your college emphasize encouraging contact among students from different economic, social and racial or ethnic backgrounds (ENVDIVRS)</i>	0.106	0.049	2.16	.0312
Was your enrollment this term less than ½ time, about ½ time, almost full-time, or full-time (ENRLSTAT)	0.078	0.043	1.81	.0718

<sup>2</sup> R<sup>2</sup>=.2593, Adjusted R<sup>2</sup>=.2377

Table 3. Final regression equation for growth in analytical ability<sup>3</sup>

Variable	Parameter Est.	Std. Error	t-value	Pr > t
Intercept	-2.77	0.241	-11.47	<.0001
To what extent does your coursework emphasize analyzing the basic elements of an idea, experience or theory such as examining a particular case in depth (ANALYZE)	0.227	0.045	5.08	<.0001
<i>How would you evaluated your entire educational experience (ENTIREXP)</i>	0.268	0.060	4.50	<.0001
To what extent does your coursework emphasize applying theories or concepts to practical problems or in new situations (APPLYING)	0.159	0.039	4.05	<.0001
Began college at your current institution (1) or started elsewhere (2) (ENTER)	0.242	0.071	3.41	.0007
<i>Gender (1=male, 2=female) (GENDER)</i>	-0.230	0.068	-3.38	.0008
How often have you discussed ideas from your reading or classes with others outside of class (OOCIDEAS)	0.128	0.041	3.16	.0017
<i>To what extent does your college emphasize encouraging contact among students from different economic, social and racial or ethnic backgrounds (ENVDIVRS)</i>	0.109	0.039	2.78	.0057
How many hours per week do you spend participating in co-curricular activities (COCURRIC)	0.084	0.032	2.57	.0105
How often have you used e-mail to communicate with an instructor or other students (EMAIL)	0.077	0.036	2.14	.0329
Major in business (MABUSI)	0.168	0.080	2.10	.0364
<i>How often have you received prompt feedback from faculty on your academic performance (FACFEED)</i>	0.084	0.044	1.92	.0552
<i>To what extent does your college emphasize providing the support you need to help you succeed (ENVSUPRT)</i>	-0.080	0.048	-1.67	.0960
How many hours per week do you spend working for pay on campus (WORKON)	0.045	0.027	1.66	.0969

<sup>3</sup> R<sup>2</sup>=.3959, Adjusted R<sup>2</sup>=.3753

Table 4. Final regression equation for growth in communication skills<sup>4</sup>

Variable	Parameter Est.	Std. Error	t-value	Pr > t
Intercept	-2.401	0.244	-9.84	<.0001
<i>How would you evaluate your entire educational experience (ENTIREXP)</i>	0.264	0.055	4.83	<.0001
<i>How often have you made a class presentation (CLPRESEN)</i>	0.181	0.046	3.98	<.0001
<i>How often have you worked harder than you thought you could to meet an instructor's standards or expectations (WORKHARD)</i>	0.172	0.044	3.93	.0001
Major in the Social Sciences (MASOCI)	0.334	0.096	3.46	.0006
Number of written papers or reports of fewer than 20 pages (WRITEFEW)	0.093	0.034	2.71	.0070
Nature of examinations taken (1=mostly multiple choice, 7=mostly essay or open-ended problems) (EXAMS)	0.058	0.023	2.53	.0118
How often have you talked about career plans with a faculty member or advisor (FACPLANS)	0.115	0.049	2.34	.0198
How often have you tutored or taught other students (TUTOR)	-0.121	0.052	-2.33	.0205
To what extent does your coursework emphasize synthesizing and organizing ideas, information, or experiences into new, more complex interpretations and relationships (SYNTHEZ)	0.097	0.044	2.22	.0274
<i>How often have you had serious conversations with other students whose religious beliefs, political opinions, or personal values were very different from yours (DIFFSTUD)</i>	-0.091	0.044	-2.09	.0370
<i>How many hours do you spend working for pay off-campus (WORKOFF)</i>	.031	0.015	2.01	.0452
Major in business (MABUSI)	0.180	0.092	1.96	.0505
Major in the humanities (MAHUMA)	0.209	0.114	1.84	.0669

<sup>4</sup> R<sup>2</sup>=.2718, Adjusted R<sup>2</sup>=.2464

Table 5. Final regression equation for predicting students' evaluation of their entire educational experience<sup>5</sup>

Variable	Parameter Est.	Std. Error	t-value	Pr > t
Intercept	0.920	0.146	6.31	<.0001
If you could start over again, would you go to the same institution you are now attending (SAMECOLL)	0.322	0.033	9.68	<.0001
<i>To what extent does your college emphasize providing the support you need to help you succeed (ENVSUPRT)</i>	0.145	0.032	4.46	<.0001
Quality of relationships with faculty members (ENVFAC)	0.074	0.020	3.77	.0002
Quality of relationships with administrative personnel and offices (ENVADM)	0.050	0.016	3.16	.0017
Analytical growth factor	0.091	0.030	3.07	.0023
<i>How often have you rewritten a paper or assignment several times (REWROPAP)</i>	-0.059	0.023	-2.59	.0100
<i>How often have you made a class presentation (CLPRESEN)</i>	0.066	0.027	2.46	.0142
<i>How many hours per week do you work for pay off campus (WORKOFF)</i>	-0.023	0.009	-2.46	.0100
Communication growth factor	0.071	0.030	2.35	.0191
<i>How often have you worked harder than you thought you could to meet an instructor's standards or expectations (WORKHARD)</i>	0.047	0.027	1.74	.0826

<sup>5</sup> R<sup>2</sup>=.5966, Adjusted R<sup>2</sup>=.5866





**U.S. Department of Education**  
Office of Educational Research and Improvement (OERI)  
National Library of Education (NLE)  
Educational Resources Information Center (ERIC)



## REPRODUCTION RELEASE

(Specific Document)

### I. DOCUMENT IDENTIFICATION:

Title: What Predicts Perceived Gains in Learning and In Satisfaction - Research Report 2001-02	
Author(s): Marcia J. Belcheir	
Corporate Source:	Publication Date: May 2001

### II. REPRODUCTION RELEASE:

In order to disseminate as widely as possible timely and significant materials of interest to the educational community, documents announced in the monthly abstract journal of the ERIC system, *Resources in Education* (RIE), are usually made available to users in microfiche, reproduced paper copy, and electronic media, and sold through the ERIC Document Reproduction Service (EDRS). Credit is given to the source of each document, and, if reproduction release is granted, one of the following notices is affixed to the document.

If permission is granted to reproduce and disseminate the identified document, please CHECK ONE of the following three options and sign at the bottom of the page.

The sample sticker shown below will be affixed to all Level 1 documents

The sample sticker shown below will be affixed to all Level 2A documents

The sample sticker shown below will be affixed to all Level 2B documents

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

*Sample*

---

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

**1**

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL IN MICROFICHE, AND IN ELECTRONIC MEDIA FOR ERIC COLLECTION SUBSCRIBERS ONLY, HAS BEEN GRANTED BY

*Sample*

---

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

**2A**

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY

*Sample*

---

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

**2B**

**Level 1**



Check here for Level 1 release, permitting reproduction and dissemination in microfiche or other ERIC archival media (e.g., electronic) and paper copy.

**Level 2A**



Check here for Level 2A release, permitting reproduction and dissemination in microfiche and in electronic media for ERIC archival collection subscribers only

**Level 2B**



Check here for Level 2B release, permitting reproduction and dissemination in microfiche only

Documents will be processed as indicated provided reproduction quality permits.  
If permission to reproduce is granted, but no box is checked, documents will be processed at Level 1.

*I hereby grant to the Educational Resources Information Center (ERIC) nonexclusive permission to reproduce and disseminate this document as indicated above. Reproduction from the ERIC microfiche or electronic media by persons other than ERIC employees and its system contractors requires permission from the copyright holder. Exception is made for non-profit reproduction by libraries and other service agencies to satisfy information needs of educators in response to discrete inquiries.*

Signature: <i>M. Belcheir</i>	Printed Name/Pos: Marcia J. Belcheir, Coordinator Office of Institutional Assessment	
Organization/Address: Boise State University 1910 University Drive Boise, Idaho 83725	Telephone: (208) 426-1117	FAX: (208) 426-3779
	F-Mail Address: mbelcheir@boisestate.edu	Date: 8-22-03

### III. DOCUMENT AVAILABILITY INFORMATION (FROM NON-ERIC SOURCE):

If permission to reproduce is not granted to ERIC, or, if you wish ERIC to cite the availability of the document from another source, please provide the following information regarding the availability of the document. (ERIC will not announce a document unless it is publicly available, and a dependable source can be specified. Contributors should also be aware that ERIC selection criteria are significantly more stringent for documents that cannot be made available through EDRS.)

Publisher/Distributor:
Address:
Price:

### IV. REFERRAL OF ERIC TO COPYRIGHT/REPRODUCTION RIGHTS HOLDER:

If the right to grant this reproduction release is held by someone other than the addressee, please provide the appropriate name and address:

Name:
Address:

### V. WHERE TO SEND THIS FORM:

Send this form to the following ERIC Clearinghouse:
---

However, if solicited by the ERIC Facility, or if making an unsolicited contribution to ERIC, return this form (and the document being contributed) to:

**ERIC Processing and Reference Facility**  
4483-A Forbes Boulevard  
Lanham, Maryland 20706

Telephone: 301-552-4200  
Toll Free: 800-799-3742  
FAX: 301-552-4700  
e-mail: [info@ericfac.piccard.csc.com](mailto:info@ericfac.piccard.csc.com)  
WWW: <http://ericfacility.org>