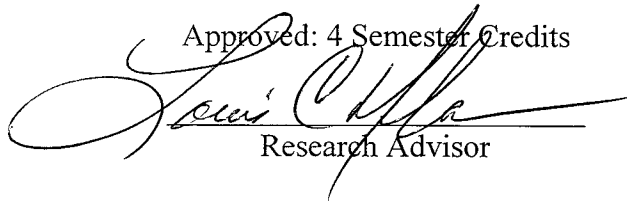ALUMNI FOLLOW-UP

STUDY

by

Sandy Croke

A Research Paper
Submitted in Partial Fulfillment of the
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in

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Research Advisor

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ABSTRACT

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The Budget, Planning and Analysis Office surveys individuals who received degrees the previous year as well as those who received degrees three years ago. The perceived need for this study is to insure that UW-Stout continues to develop and maintain itself as a high-quality institution. Satisfaction trends among three cohorts are examined to insure that UW-Stout is providing its graduates with a quality education. The null hypothesis of this study states that there are no statistically significant differences between cohorts. This would be expected if there were no significant changes in recruitment and/or educational and instructional processes. Alternatively, the results can represent improvements or declines in satisfaction ratings. The trend analyses completed in this research study coupled with detailed description of the level of satisfaction

demonstrated by the overall cohort and specific programmatic sub-compartments of each

cohort provide useful information for organizational management.

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CHAPTER I: INTRODUCTION

Every other year the Budget, Planning and Analysis Office surveys individuals who received degrees the previous year as well as those who received degrees three years before.

Statement of the Problem

The perceived need for this study is to insure that UW-Stout continues to develop and maintain itself as a high-quality institution.

Purpose of the Study

Information from this study is used to evaluate academic programs and other services offered by the university to students while they are attending UW-Stout. The results are also used to determine changes to curriculum and services that would make UW-Stout graduates better trained to meet the needs of employers.

Limitations of the Study

One limitation of the study is that all alumni from the three cohorts could not be contacted because of invalid addresses. Another limitation is that those that did respond self-selected so bias may be present.

Methodology

All participants received a postcard informing them of the upcoming survey. Two weeks later, the general survey was sent. All non-respondents received another postcard reminding them to return the survey. About two weeks later, another survey was sent to non-respondents. ANOVA, T-tests and chi-square analyses were conducted to determine if there were any significant differences between the 1998, 2000, and 2002 graduates.

CHAPTER II: LITERATURE REVIEW

The purpose of this study is to describe recent trends in satisfaction of UW-Stout graduates. More specifically, it seeks to map satisfaction metrics across three cohort groups of undergraduate and graduate degree recipients (1998, 2000, and 2002). This analysis will determine if statistically and socially significant differences are demonstrated across the cohorts, and if such differences exist if they represent strengths and/or opportunities for improvement within the university. Student satisfaction is viewed as a key measure of institutional success in student preparation, and also as a primary mechanism of recruitment and long-term viability of the university.

A college education can be thought of as a product that is purchased by customers and as this, it must meet the customer's expectations. The customer is not only the student, but is also the parents, the businesses and industries, and the community leaders. All of these stakeholders have different concerns and needs. "Parents want an education system which enables their children to become self-fulfilled and productive members of society; business and industry want a system which produces graduates who can do the work to make their enterprises successful; and community leaders want a system which produces graduates who are able to contribute to the well being of society" (Attitudes and Satisfaction with Education, 1998, p. 57).

To create and keep a competitive advantage, customer satisfaction must be an integral part of organizations (Goode, 2002). This is one of the main reasons universities are interested in their graduates' satisfaction. One of the most commonly used advertising techniques for universities is the word-of-mouth approach. Satisfied customers are more likely to encourage others to attend the university they themselves attended.

According to Halstead, Hartman, and Schmidt (1994) there are two major components, the intellectual environment and employment preparation, which lead to student satisfaction with educational programs. The intellectual environment includes quality of instruction, interactions with faculty and staff, and student engagement. All three of these dimensions are thought to influence overall satisfaction with both the University and the program.

The quality of instruction is a key factor influencing satisfaction (Chadwick & Ward, 1987; Hearn, 1985). Researchers have found several factors that students perceive as qualities of a good instructor (Quality of Instruction, 1996). These include being enthusiastic about teaching, stimulating curiosity, presenting different points of view, and making subjects understandable. Feldman (1976) defined quality of instruction as having eight components: (1) clarity, (2) classroom management, (3) knowledge, (4) intellectually stimulating, (5) organized, (6) enthusiasm, (7) fairness, and (8) approachability.

Many researchers have shown that there is a link between teacher efficacy and students' knowledge and skills (Thompson & Joshua-Shearer, 2002). According to Wenglinsky (2000), teachers who majored or minored in the subject they teach are more prepared and therefore provide better instruction. "Effective teachers have high and clear expectation, model what they want students to do, upgrade their skills and knowledge base continuously, use multiple strategies to make the content comprehensible to all students, believe that all students can learn, and utilize an additive versus deficit pedagogy" (Thompson & Joshua-Shearer, 2002, p. 2).

Graham and Gisi (2000) examined alumni satisfaction with the instructional climate. They found that this plays an important part in student outcomes. "The results of this study showed that satisfaction with instructional elements such as instructional strategies, overall quality of instruction, and class size had a dramatic and consistent impact on the overall college rating and learning outcomes" (Graham & Gisi, 2000, p. 288).

Several researchers (Austin, Korn, & Green, 1987; Pike, 1991) have found that faculty-student interaction greatly influences student satisfaction. Researchers have reported that students who interact more often with faculty have greater satisfaction with the college environment (Medved & Heisler, 2002). According to Pascarella (1980, p. 544), "with the influence of student pre-enrollment traits held constant, significant positive associations exist between extent and quality of student-faculty informal contact and students attitudes toward college, intellectual and personal development, and their institutional persistence."

A recent survey by the Pew Charitable Trusts (National Survey of Student Engagement) examined student interaction with their professors (Teaching Times, 2001). The more contact students had with their teachers the better outcomes resulted. It was through these interactions that teachers became role models, mentors, and guides. Some common reasons for faculty-student interactions include: discussing grades or assignments, talking about career plans, discussing ideas, getting feedback on academic performance, working on research projects, and working on activities other than coursework.

In addition to studying faculty-student interactions, the National Survey of Student Engagement (NSSE) also examines student engagement. Included in this idea are activities that are traditionally associated with learning: reading and writing, preparing for class, and interacting with teachers (Kuh, 2001). Also included are activities such as working with peers on projects, problem solving tasks, and community service (Kuh, Gonyea, Palmer, 2001). Similarly, other related research has shown that student involvement leads to greater satisfaction with their college experience (Abrahamowicz, 1988; Hartley & Berkowitz, 1983).

The second component identified by Halstead, et al. (1994) is employment preparation. According to Halstead, et al., "This may be the most important factor used by students when deciding to attend a university and for evaluating an educational program" (1994, p. 120). For most students, getting a job after graduation is their main goal. Therefore it is very important that universities include employment preparation in their curriculums. It should include career planning, resume writing, interview skills, and employment seeking strategies. Chadwick and Ward (1987) found that the value of students' degrees in the job market greatly determined whether or not they would recommend their school. Satisfaction with their level of career development and rate of advancement also affect their satisfaction with their college.

All of the above dimensions, quality of instruction, faculty/staff interactions with students, overall engagement, and employment preparation, are of concern to UW-Stout. The University wants to thrive and survive in a very competitive market. In order to do so, it must provide quality in all of these aspects. Only with quality will alumni be satisfied and will continue to encourage others to attend UW-Stout.

To insure that UW-Stout is providing its graduates with a quality education the satisfaction trends will be examined. Three cohort groups (1998, 2000, and 2002) will have their satisfaction metrics mapped. The level of satisfaction will be measured. Then the three cohort groups will be compared. If no significant differences among the groups exist, this will mean that satisfaction is stable. However, if differences do exist, these will show strengths or areas for improvement. This data will then be used to suggest causal relationships among satisfaction and the previously mentioned dimensions.

CHAPTER III: METHODOLOGY

To insure that UW-Stout continues to develop and maintain itself as a high-quality institution, the students' satisfaction should be considered. This chapter will include descriptions of the nature of the hypotheses, the process of subject selection, the instrument, the data collection procedures, the data analysis, and the limitations of the study.

Hypotheses

As in any research, the null hypothesis of this study would state that there are no statistically significant differences between cohorts. If the null hypothesis were true, this would indicate consistent levels of satisfaction among the cohorts of graduates. The null hypothesis would be expected if there were no significant changes in recruitment and/or educational and instructional processes. Alternately, one could hypothesize that the results would represent improvements or declines in satisfaction ratings. These trend analyses coupled with detailed description of the level of satisfaction demonstrated by the overall cohort and specific programmatic sub-compartments of each cohort will provide useful information for organizational management.

Subject Selection and Description

The sample was drawn from the alumni at the University of Wisconsin-Stout. As shown in Table 1, a total of 3,564 alumni were solicited. All alumni contacted were from the graduating classes of 1998, 2000, and 2002. The data for the 1998 cohort was collected in a study completed in 2002. All alumni were given an incentive, a UW-Stout window cling, to participate. The total response rate was 38.1% (N = 1358). This is typical for surveys sent through the mail.

Table 1.

<u>Response Rates Split By Cohort.</u>

Cohort	Solicited	Returned	Response Rate
1998	949	373	39.3%
2000	1,212	412	34.0%
2002	1,403	573	40.8%

Instrumentation

While three questionnaires were deployed in the mailing process, a general survey, a program specific survey, and an employer survey, this study will only analyze results from the general survey. This survey consisted of a variety of Likert-type and qualitative items. All of the Likert scales were five points with the scale ranging from one to five. Nine different sets of anchors were used. These included definitely no/definitely yes and very low/very high for satisfaction items related to the overall experience. For degree of influence related to general satisfaction, the semantic anchors used were none/strong. In addition, very poor/very good, not related/directly related, very unsatisfied/very satisfied, very poor/exceptional, much less prepared/much better prepared, and very little/very much were also used as anchors. Three items assessed satisfaction related to the overall experience at UW-Stout (one item) as well as the graduate's specific program/major (two items). These general satisfaction measures were followed by a 17-item battery assessing the effectiveness of the University in personal skill development; followed by a one page of demographic and employment questions; followed by three items that assessed satisfaction with employment preparation, nine

items assessing the overall educational quality received at UW-Stout, two items reflecting a cost-benefit analysis and finally, one item assessed the value of ethnic study.

Data Collection Procedures

Data from the class of 1998 was collected in a previous wave of this study in 2002. All alumni who graduated in 2000 or 2002 were sent a postcard in January 2004 informing them about the upcoming survey and asking them to watch for it. Two weeks later, the general survey was sent. Included with the survey was a cover letter from the Chancellor, and the window cling incentive. Approximately three weeks later, in March 2004, a second postcard was sent to non-respondents again asking them to complete the survey. Two and a half weeks after this, the survey was sent again to the non-respondents.

Data Analysis

A number of statistical analyses were used in this study. A detailed descriptive analysis was performed at the cohort level. This was then segmented to the program level. Correlational analysis and factor analysis were completed to investigate the pattern of association among satisfaction measures and define consistent themes.

Subsequent analyses of individual satisfaction items and aggregated scales were examined overall. When appropriate, between cohort effects were examined using a one-way ANOVA. This analysis was also performed on segmented programmatic data when sufficient statistical power existed. The smaller programs were analyzed using multiple Independent T-tests to achieve the same result.

Limitations

One limitation of the study is that all alumni from the three cohorts could not be contacted because of invalid addresses. Another limitation is that those that did respond self-selected so bias may be present. Also, the analysis of only three graduate cohorts satisfies only the most fundamental requirements for trend analysis, and moreover, the timing of the data collection in the early *post partum* years will likely confound the self-reported measures, especially the global preparation metrics, with other factors such as the historical fluctuations of the national economy and its impact on employment opportunities.

CHAPTER IV: RESULTS

The alumni at UW-Stout were surveyed to insure that UW-Stout remains a high quality institution. The survey was sent to 1998, 2000, and 2002 graduates. Exact statistical significance values are reported in the tables below and should be interpreted at two levels (.05 & .01). Due to the large number of statistical test performed within this report, differences and associations that meet the first level criteria ($.01 \leq p < .05$) should be used solely for exploratory purposes. Those that meet the second level criteria ($p < .01$) adjusted for likely Type-I error should be interpreted with caution due to the small increments of change observed.

Overall Program Effectiveness

As shown in Table 2, satisfaction levels for the effectiveness of one's program were significantly higher in 1998 and 2000 than in 2002.

Table 2.

<u>One-Way ANOVA Analysis of Overall Program Effectiveness.</u>

	Mean 1998	Mean 2000	Mean 2002	N	F value	Signif of F
Would you attend UW-Stout?	4.46	4.47	4.44	1359	0.20	0.82
Would you enroll in the same program?	4.07	3.94	4.04	1349	1.54	0.22
Overall effectiveness of your program	4.04	4.01	3.90	1358	4.48	0.01*

Note 1: *, p<.05; **, p<.01
Note 2: The first two questions were rated on the following scale: 1 = "Definitely no", 5 = "Definitely yes"
Note 3: The third question was rated on the following scale: 1 = "Very low", 2 = "Low", 3 = "Moderate", 4 = "High", 5 = "Very high"

Personal Development

Table 3 shows that satisfaction levels regarding personal development are relatively consistent across the three cohorts. There are only two items on which satisfaction levels differ significantly among the three cohorts. The 2000 cohort is significantly more satisfied than the 1998 and 2002 cohorts, with UW-Stout's contribution to their ability to speak and present ideas effectively. They are also significantly more satisfied than the 1998 cohort with UW-Stout's contribution to their development of an appreciation of the arts.

Table 3.

One-Way ANOVA Analysis of Personal Development.

	Mean 1998	Mean 2000	Mean 2002	N	F value	Signif of F
Writing effectively	3.54	359	3.56	1353	0.31	0.73
Speaking or presenting ideas effectively	3.82	3.97	3.87	1360	3.70	0.03*
Using mathematics or statistics	3.30	3.28	3.32	1357	0.26	0.78
Using computers and info. technology	3.61	3.69	3.76	1358	2.61	0.07
Solving problems	3.95	3.99	3.94	1358	0.57	0.57
Organizing information	3.94	4.00	3.90	1358	1.72	0.18
Analyzing information	3.90	3.92	3.91	1357	0.09	0.91
Making decisions	3.95	3.89	3.86	1356	1.13	0.32
Conducting a research study	3.85	3.87	3.90	1359	0.29	0.75
Working in teams	4.22	4.22	4.11	1359	2.55	0.08*
Providing leadership	4.05	4.07	3.96	1358	2.15	0.12
Thinking creatively	4.02	3.98	3.96	1360	0.57	0.57
Understanding diverse cultures	3.58	3.54	3.48	1357	1.02	0.36
Caring for your personal "wellness"	3.26	3.34	3.31	1358	0.70	0.50
Developing a critically examined set of values	3.38	3.45	3.38	1352	0.68	0.51
Developing an appreciation of the arts	3.00	3.22*	3.09	1358	3.60	0.03*
Appreciating the need for racial equity	3.31	3.37	3.28	1359	0.87	0.42

Note 1: *, $p<.05$; **, $p<.01$ Note 2: 1 = "None", 5 = "Strong"

Employment

The levels of satisfaction on two items related to employment differ significantly as shown in Table 4. Alumni of the 1998 cohort are significantly more satisfied in the level of preparation they received from UW-Stout than are alumni from the 2002 cohort. The 2002 cohort is also significantly less satisfied than the 1998 and 2000 cohorts with their level of career development.

Table 4.

One-Way ANOVA Analysis of Employment.

	Mean 1998	Mean 2000	Mean 2002	N	F value	Signif of F
Preparation for employment	4.00	3.84	3.79	1341	6.91	0.00**
Level of career development	3.93	3.84	3.70	1335	6.60	0.00**
Rate of advancement	3.73	3.63	3.61	1328	1.40	0.25

Note 1: *, $p<.05$; **, $p<.01$
Note 2: The first question was rated on the following scale: 1 = "Very poor", 2 = "Poor", 3 = "Fair", 4 = " Good", 5 = "Very good"
Note 3: The last two questions were rated on the following scale: 1 = "Very unsatisfied", 5 = "Very satisfied"

Educational Aspects

Table 5 shows that five of the educational aspects have consistent levels of satisfaction over the three cohorts. Levels of satisfaction for overall faculty availability, quality of laboratory equipment, and quality of academic advising have changed relatively little. The value of education given the cost and investment of time is another

item that has stayed consistent over the three cohorts. The satisfaction levels also

remained constant regarding the contribution of UW-Stout's ethnic studies requirements.

Table 5.

One-Way ANOVA Analysis of Educational Aspects.

	Mean 1998	Mean 2000	Mean 2002	N	F value	Signif of F
Overall quality of instruction	4.11	4.11	4.01	1355	3.17	0.04*
Quality of instruction in courses directly related to your program of study	4.17	4.21	4.03	1354	6.55	0.00**
Overall faculty availability	4.16	4.16	4.09	1355	1.32	0.27
The availability of faculty who taught courses in your program	4.24	4.28	4.14	1355	3.60	0.03*
Course content	3.95	4.02	3.86	1355	4.75	0.01*
Course availability	3.91	3.94	3.70	1353	9.38	0.00**
Course scheduling (time of day)	4.04	3.98	3.89	1350	3.16	0.04*
Quality of laboratory equipment	3.91	3.93	3.86	1307	1.00	0.37
Quality of academic advising	3.85	3.82	3.70	1351	2.77	0.06
Value of education given the cost	4.15	4.11	4.04	1352	2.35	0.10
Training compared to others	3.95	3.84	3.76	778	3.44	0.03*
Ethnic studies requirements	3.20	3.07	3.08	1309	1.78	0.17

Note 1: *, $p<.05$; **, $p<.01$

Note 2: The first nine questions were rated on the following scale: 1 = "Very unsatisfied", 5 = "Very satisfied"

Note 3: The tenth question was rated on the following scale: 1 = "Very poor", 2 = "Poor", 3 = "Fair", 4 = "Good", 5 = "Exceptional"

Note 4: The eleventh question was rated on the following scale: 1 = "Much less prepared", 2 = Somewhat less prepared", 3 = "Same", 4 = "Somewhat better prepared", 5 = "Much better prepared"

Note 5: The final question was rated on the following scale: 1 = "Very little", 2 = "Little", 3 = "Some", 4 = "Quite a bit", 5 = "Very much"

Correlation Analysis

A summary statistic was computed for the contribution items (i.e., how did UW-Stout contribute to writing effectively; how did UW-Stout contribute to using math/stats) and for the education rating items (i.e., overall quality of instruction; overall faculty availability). The summary statistic for contribution and the summary statistic for education rating were significantly correlated ($r = .530$, $p < .001$), indicating 28% predictive capacity at the bivariate level.

The summary statistic for education rating was negatively correlated with the date graduated ($r = -.090$, $p < .01$). While this correlation is statistically significant due to the ample statistical power provided by such a large sample, the fact that cohort membership explains less than 1% of the variability of the composite education scale suggests that it affords no practical utility.

Factor Analysis

A factor analysis revealed eight major factors. The first factor, overall satisfaction with UW-Stout, explains 32.49% of the variance. It included twelve items including overall program effectiveness, enroll in same program again, and attend UW-Stout again. The second factor explained 7.05% of the variance and included the six items dealing with race equity, diversity, and art appreciation. The third factor explained 4.59% of the variance and included five items dealing with mathematical and problem solving ability. The fourth factor, which included three items dealing with the availability and scheduling of courses, explained 3.84% of the variance. The next factor included only two items about career development and advancement. This factor explained 3.12% of the variance. The sixth factor included only two items about organizing information and making

decisions. This factor explained 2.29% of the variance. The seventh factor explained 2.05% of the variance and included two items dealing with speaking and writing ability. The final factor explained only 1.83% of the variance and included five items dealing with teamwork and faculty availability.

Item Analysis by Cohort (See Appendix A)

Data segmented by undergraduate major and graduate program is reported in Appendix A at the end of this report. Insufficient data existed for some majors/programs either due to the size of some program or past data collection procedures, therefore data is not reported for these programs. Insufficient data is defined herein as (1) absence of the requisite *minimum of three data time points*, and/or (2) a *minimum of ten respondents for each time point*.

CHAPTER V: DISCUSSION

The purpose of this study is to evaluate academic programs and other services

offered by the university to students while they are attending UW-Stout. All students who

graduated in 1998, 2000, and 2002 were asked to participate. Non-respondents were sent

another invitation to participate a few weeks after the initial mailing. The main

hypothesis of this study was that the results would represent improvement or declines in

satisfaction ratings.

Limitations

One limitation of the study is that all alumni from the three cohorts could not be

contacted because of invalid addresses. Another limitation is that those that did respond

self-selected so bias may be present. Also, the analysis of only three graduate cohorts

satisfies only the most fundamental requirements for trend analysis, and moreover, the

timing of the data collection in the early *post partum* years will likely confound the self-

reported measures, especially the global preparation metrics, with other factors such as

the historical fluctuations of the national economy and its impact on employment

opportunities. Finally, these comparisons do not afford the ability to investigate within

cohort effects, thus not allowing the examination of change in satisfaction due to

increased experience in the world beyond the university.

Conclusions

UW-Stout has exhibited a high level of quality. This can be seen in the class of

2002's ratings. In all survey items, UW-Stout averages above the mid-point on the scale.

Most alumni of the class of 2002 would probably or definitely attend UW-Stout and/or

enroll in the same program. The level of overall program effectiveness in 2002 is moderate to high.

Only one item related to personal development, working in teams, was given a rating of medium to strong influence. All other personal development items were given a rating of intermediate to medium influence. This is still a high level of quality.

UW-Stout also has a high level of quality in relation to employment items. The class of 2002 rated UW-Stout as being fair to good in preparation for employment. They also said that they were satisfied to very satisfied with their level of career development and rate of advancement.

When examining educational factors, UW-Stout's level of quality continues to be superior. On four items assessing satisfaction with the quality of instruction and availability of faculty, the class of 2002 indicated that they were satisfied to very satisfied, as did their predecessors in the1998 and 2000 graduation cohorts. The other five items assessing satisfaction indicated a level of neutral to satisfied. When asked about the value of education, given the cost and time investment, alumni of 2002 gave UW-Stout a level of good to exceptional. Training compared to others was rated as being between same and somewhat better prepared. Finally, UW-Stout's ethnic studies requirements were rated between some and quite a bit for contribution to the development of skills to value diversity in personal and professional relationships.

In order to determine the strengths and areas for improvement, consistency over the three cohorts was examined. In the item analysis by cohort, the class of 2002 was significantly lower than the class of 1998 and the class of 2000 on five common items: overall program effectiveness, level of career development, overall quality of instruction,

quality of instruction in program, and course availability. These items should be the key focus for improvement.

Quality of instruction is a key factor influencing satisfaction, and the four most related measures of satisfaction, the items related to the quality of instruction and availability of faculty, consistently fall within the satisfied to very satisfied range and are the highest ratings given to UW-Stout by all three cohorts. Unfortunately, a decrease in satisfaction in both the overall quality and the quality of instruction within the program was observed across time. Given-the importance of these factors to the success of the university, further study should be conducted to investigate the systemic impact on instruction.

The decrease in satisfaction of overall program effectiveness is likely partly due to the decreases in satisfaction on the other four items, but also to the even greater declines observed with the administrative functions of course availability and course scheduling. According to Graham and Gisi (2000), overall college rating was impacted dramatically and consistently by overall quality of instruction and class size. Additionally, class size is directly related to instructor availability. As class sizes increase, instructor availability decreases. In other research by Chadwick and Ward (1987), satisfaction with the level of career development greatly affected satisfaction with the overall college.

Although the class of 2002 was did not rate any item significantly higher than the classes of 1998 or 2000, UW-Stout has two areas of strengths. There was a significant increase in the ratings from the class of 1998 to the class of 2000. Both items were in the personal development category. The first was, UW-Stout contributed to my ability to

speak/present ideas effectively. The second item was, UW-Stout contributed to my art appreciation.

As the above analysis shows, UW-Stout is doing some of the things that keep students satisfied. UW-Stout needs to continue to concentrate on these things. In addition, it needs to find a way to improve upon the areas where we see significant decrease from previous cohorts.

An opposite, alternative interpretation of these data is also possible. It could be that satisfaction *actually increased* over time as students came to more value the "hands on, minds on" instruction they receive at UW-Stout with increased experience in the world of work. If this were the case, we would observe the same pattern in the means as described above. This alternative hypothesis cannot be supported or falsified within the current data since these data only allow for between cohort comparisons and not within cohort change over time.

Recommendations

In order to get more accurate results, the response rate needs to increase. One way to do this is to keep more accurate address information. More frequent contact with alumni should be made to assure correct addresses. Another recommendation is to complete this study annually instead of every other year. This way trends could be more accurately measured and mapped.

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Appendix A: One-Way ANOVA Analysis by Program

Apparel Design/Development

Insufficient data was available for trend analysis.

Applied Math and Computer Science

Insufficient data was available for trend analysis.

Art

As Table 6 shows, there were six significant differences in this major. The cohorts differed significantly on their ratings of the overall effectiveness of their program. The three cohorts satisfaction levels also differed on their ratings of UW-Stout's contribution to their ability to work in teams, provide leadership, and write effectively. There were significant differences in the satisfaction levels of two educational aspects: course content and availability of courses.

Table 6.

<u>One-Way ANOVA Analysis of Art.</u>

	Mean 1998	Mean 2000	Mean 2002	N	F value	Signif of F
Overall program effectiveness	3.45	4.21	3.62	94	5.71	0.01*
How did UW-Stout contribute to: writing effectively	2.55	3.44	3.26	93	4.21	0.02*
How did UW-Stout contribute to: working in teams	3.00	4.06	3.62	95	3.75	0.03*
How did UW-Stout contribute to: providing leadership	2.91	3.94	3.58	95	4.33	0.02*
Course content	3.36	4.06	3.57	94	4.24	0.02*
Course availability	2.91	3.35	2.59	94	4.05	0.02*

Note 1: *, $p<.05$; **, $p<.01$
Note 2: The first question was rated on the following scale: 1 = "Very low", 2 = "Low", 3 = "Moderate", 4 = "High", 5 = "Very high"
Note 3: The next three questions were rated on the following scale: 1 = "None", 5 = "Strong"
Note 4: The last two questions were rated on the following scale: 1 = "Very unsatisfied", 5 = "Very satisfied"

Art Education

Insufficient data was available for trend analysis.

Construction

Insufficient data was available for trend analysis.

Dietetics

Insufficient data was available for trend analysis.

Early Childhood

As Table 7 shows, the cohorts differed significantly on their likelihood to attend UW-Stout again if they had to do it over.

Table 7.

<u>One-Way ANOVA Analysis of Early Childhood.</u>

	Mean 1998	Mean 2000	Mean 2002	N	F value	Signif of F
If you did it again, would you attend UW-Stout	4.41	4.79	4.77	93	3.39	0.04*

Note 1: *, p<.05; **, p<.01
Note 2: The first question was rated on the following scale: 1 = "Definitely no", 5 = "Definitely yes"

Family & Consumer Sciences Education

Insufficient data was available for trend analysis.

Food Systems and Technology

Insufficient data was available for trend analysis.

General Business Administration

No significant differences existed among the three cohorts.

Graphic Communications Management

Insufficient data was available for trend analysis.

Hotel, Restaurant & Tourism Management

No significant differences existed among the three cohorts.

Human Development & Family Studies

No significant differences existed among the three cohorts.

Industrial Technology (Engineering Technology)

As shown in Table 8, there were three significant differences in this major. The cohorts differed on their ratings of their preparation for employment and whether they would attend UW-Stout again if they had to do it over. The cohorts also differed on their ratings of UW-Stout's contribution to their ability to write effectively.

Table 8.

<u>One-Way ANOVA Analysis of Industrial Technology (Engineering Technology).</u>

	Mean 1998	Mean 2000	Mean 2002	N	F value	Signif of F
If you did it again, would you attend UW-Stout	4.39	4.88	4.33	62	4.04	0.02*
How did UW-Stout contribute to: writing effectively	3.67	4.19	3.22	61	7.26	0.00**
How well did UW-Stout prepare you for employment	4.11	3.40	4.06	59	3.83	0.03*

Note 1: *, p<.05; **, p<.01
Note 2: The first question was rated on the following scale: 1 = "Definitely no", 5 = "Definitely yes"
Note 3: The second question was rated on the following scale: 1 = "None", 5 = " Strong"
Note 4: The third question was rated on the following scale: 1 = "Very poor", 2 = "Poor", 3 = "Fair", 4 = "Good", 5 = "Very good"

Industrial Management

Insufficient data was available for trend analysis.

Manufacturing Engineering

As shown in Table 9, this major differed significantly on their satisfaction with the overall quality of instruction and on their ratings of UW-Stout's contribution to their ability to use mathematics or statistics.

Table 9.

One-Way ANOVA Analysis of Manufacturing Engineering.

	Mean 1998	Mean 2000	Mean 2002	N	F value	Signif of F
How did UW-Stout contribute to: using math/stats	4.05	4.58	3.77	53	7.01	0.00**
Overall quality of instruction	4.29	4.00	3.62	53	5.21	0.01*

Note 1: *, p<.05; **, p<.01
Note 2: The first question was rated on the following scale: 1 = "None", 5 = " Strong"
Note 3: The last question was rated on the following scale: 1 = "Very unsatisfied", 5 = "Very satisfied"

Marketing and Business Education

Insufficient data was available for trend analysis.

Packaging

Insufficient data was available for trend analysis.

Psychology

No significant differences existed among the three cohorts.

Retail, Merchandising and Management

This major was relatively stable. As Table 10 shows, only one significant

difference existed on the satisfaction with the quality of academic advising.

Table 10.

One-Way ANOVA Analysis of Retail Merchandising & Management.

	Mean 1998	Mean 2000	Mean 2002	N	F value	Signif of F
Quality of academic advising	3.71	4.40	4.18	41	3.69	0.03*

Note 1: *, p<.05; **, p<.01
Note 2: 1 = "Very unsatisfied", 5 = "Very satisfied"

Service Management

Insufficient data was available for trend analysis.

Technology Education

This major was also relatively stable. It too had only one significant difference between the cohorts—satisfaction with the availability of courses. This difference is shown in Table 11.

Table 11.

One-Way ANOVA Analysis of Technology Education.

	Mean 1998	Mean 2000	Mean 2002	N	F value	Signif of F
Course availability	4.00	3.71	3.29	65	3.64	0.03*

Note 1: *, p<.05; **, p<.01
Note 2: 1 = "Very unsatisfied", 5 = "Very satisfied"

Technical Communication

Insufficient data was available for trend analysis.

Telecommunication Systems

Insufficient data was available for trend analysis.

Vocational Rehabilitation

As Table 12 shows, the cohorts differed significantly on the ratings of the value of their education given the cost and time investment and on the ratings of UW-Stout's contribution to their ability to use mathematics or statistics.

Table 12.

<u>One-Way ANOVA Analysis of Vocational Rehabilitation.</u>

	Mean 1998	Mean 2000	Mean 2002	N	F value	Signif of F
How did UW-Stout contribute to: using math/stats	2.95	2.36	3.22	41	4.06	0.03
Given cost & time investment— value of education	4.57	3.91	3.90	42	3.65	0.04

Note 1: *, p<.05; **, p<.01
Note 2: The first question was rated on the following scale: 1 = "None", 5 = " Strong"
Note 3: The second question was rated on the following scale: 1 = "Very poor", 2 = "Poor", 3 = "Fair", 4 = "Good", 5 = "Exceptional"

Vocational Technical & Adult Education

Insufficient data was available for trend analysis.

Applied Psychology

Insufficient data was available for trend analysis.

Education

      Insufficient data was available for trend analysis.

Food and Nutritional Sciences

      Insufficient data was available for trend analysis.

Guidance and Counseling (Mental)

      Insufficient data was available for trend analysis.

Guidance and Counseling (School)

      Table 13 shows that there were six significant differences in this major. The first difference existed on the ratings of overall effectiveness of their program. The cohorts also differed on their ratings of UW-Stout's contribution to their ability to provide leadership and think creatively. Differences also existed in two of the employment items; satisfaction with their preparation for employment and satisfaction with their rate of advancement. Finally, a difference existed in the satisfaction levels for the quality of instruction.

Table 13.

One-Way ANOVA Analysis of Guidance & Counseling (School).

	Mean 1998	Mean 2000	Mean 2002	N	F value	Signif of F
Overall program effectiveness	4.60	4.27	3.75	37	5.94	0.01*
How did UW-Stout contribute to: providing leadership	4.44	4.09	3.56	36	3.78	0.03*
How did UW-Stout contribute to: thinking creatively	4.40	3.73	3.38	37	4.18	0.02*
How well did UW-Stout prepare you for employment	4.40	4.10	3.50	36	4.66	0.02*
Satisfaction with rate of advancement	4.50	3.75	3.81	34	3.83	0.03*
Overall quality of instruction	4.60	4.18	3.88	37	5.63	0.01*

Note 1: *, $p<.05$; **, $p<.01$
Note 2: The first question was rated on the following scale: 1 = "Very low", 2 = "Low", 3 = "Moderate", 4 = "High", 5 = "Very high"
Note 3: The next two questions were rated on the following scale: 1 = "None", 5 = " Strong"
Note 4: The fourth question was rated on the following scale: 1 = "Very poor", 2 = "Poor", 3 = "Fair", 4 = "Good", 5 = "Very good"
Note 5: The last two questions were rated on the following scale: 1 = "Very unsatisfied", 5 = "Very satisfied"

Home Economics

Insufficient data was available for trend analysis.

Hospitality and Tourism, MS

Insufficient data was available for trend analysis.

Industrial & Vocational Education

Insufficient data was available for trend analysis.

Industrial/Technology Education

Insufficient data was available for trend analysis.

Marriage & Family Therapy

Insufficient data was available for trend analysis.

Management Technology

Insufficient data was available for trend analysis.

Risk Control

Insufficient data was available for trend analysis.

School Psychology, MS

Insufficient data was available for trend analysis.

School Psychology, EdS

Insufficient data was available for trend analysis.

Training and Development

Insufficient data was available for trend analysis.

Vocational & Technical Education

Insufficient data was available for trend analysis.

Vocational Rehabilitation, MS

Insufficient data was available for trend analysis.