Satisfaction and Importance Factors in Athletic Training Education

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Objective: To examine various institution and student demographics and the ratings of Satisfaction (SAT) and Importance (IMP) for several programmatic variables within Athletic Training Education Programs (ATEPs).

Design and Setting: A survey of SAT and IMP ratings of programmatic variables conducted with accredited, entry-level ATEPs.

Subjects: Students enrolled in their final semester/term.

Measurements: Students' SAT and IMP was measured by asking students to rate, on a 10-point Likert scale, seven programmatic factors. Various institution/program (state versus private affiliation, athletic division, Carnegie classification, and university enrollment) and student (age, gender, self-reported grade point average) demographic data were collected.

Results: The sample consisted of 403 students from 99 institutions. Total SAT and IMP was computed by calculating the mean score across all seven factors. An analysis of variance showed a significant difference ($F_{2,275} = 4.25$, $P = .01$) for SAT within Carnegie classification with master's institution students more satisfied than doctoral institution students. A repeated measures analysis found significant differences ($F_{6,292} = 34.77$, $P < .001$) between SAT factors with students more satisfied with instructor availability than the other factors A repeated measures analysis found significant differences ($F_{6,292} = 53.64$, $P < .001$) between IMP factors with the quality of instruction in the major and quality of clinical experiences rated higher than the other factors

Conclusions: Our results revealed that the type of institution has a greater effect upon student ratings of SAT and IMP than the student characteristics themselves.

Key Words: Program satisfaction, education outcomes, programmatic evaluation, assessment, accreditation review

Institutions of higher education are part of a service industry that must compete for students, creating a decades-long reliance upon student satisfaction assessments. The available literature on the impact of the college experience on student development is vast, with four comprehensive reviews of the literature conducted to date.[1-4] Most of the previous literature studied university-wide satisfaction factors at a global level,[5-9] including how social life on campus and peer/faculty interactions affected student satisfaction at the university.

Elliot[5,6] determined that student centeredness and instructional effectiveness were the most predictive factors of overall student satisfaction. Derry and Brandenburg[10] studied undergraduate and graduate ratings of satisfaction within specific academic departments at a given institution. They identified personal value in studies, satisfaction with instructional procedures, satisfaction with faculty mentorship, and faculty accessibility as important indicators of student satisfaction. Schreiner and Juillerat[11-13] added a measure of importance to each factor to allow for the creation of a quadrant that intersects satisfaction and importance. This allows administrators to visualize each factor with respect to satisfaction and importance and to determine which factors need immediate attention. The published literature on programmatic-level evaluation of satisfaction is limited to specific institutions; therefore it is impossible to compare results from one institution to another.[1-14] No studies on programmatic-level student satisfaction with comparison data across institutions were found in the literature.

In this study, we adapted satisfaction factors found within the literature[1-14] and tailored them to Athletic Training. The additional measure of importance was added for each factor based upon the work of Schreiner and Juillerat.[11-13] The purpose of this study was to measure student satisfaction and importance at the programmatic-level with a standardized method that allows for comparison across institutions. The main objective of the research was to explore the relationships between various university/program and student demographics and their effect on student satisfaction and importance ratings of several programmatic factors.

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Methods

Instrumentation

An online instrument was developed to collect program satisfaction and importance ratings from students in their last term/semester in an accredited ATEP. The instrument was hosted on a Windows server, utilized a Microsoft Access database, and used .Net and XHTML web page programming language. During data collection, the instrument was migrated to a UNIX server, utilized an open-source SQL database, and used .Net and XHTML web page programming language.

Students were asked a series of questions designed to measure their satisfaction with, and importance of, seven programmatic factors that were identified from the literature[1-14] as significant factors in student satisfaction and pertinent to Athletic Training with its associated clinical education component. These programmatic factors were: use of technology in the classroom, career placement services, administration of overall program, course instruction within major, overall quality of advising about requirements and courses, quality of clinical experiences, and instructor availability outside of the teaching setting. Students were asked to rate each statement on a scale of 1-10, with a rating of 1 meaning 'not at all satisfied' and a rating of 10 meaning 'very satisfied' for each factor. An additional measure of importance was measured with a similar 1-10 rating, with a rating of 1 meaning 'not at all important' and a rating of 10 meaning 'very important', for each factor. Validity was established with a review of the factors by an advisory panel of five Athletic Training educators from around the nation. Each member of the panel was asked to review the content of the survey and the proposed methodology. Internal reliability (Cronbach alpha) was calculated for each subscale: Satisfaction (SAT) α = .85 and Importance (IMP) α = .82.

Subjects

Accredited Athletic Training Education Programs from each National Athletic Trainers' Association (NATA) district were solicited to participate in the study. Mass emails were generated by the NATA, messages were posted on Athletic Training list serve web sites, and peer networking methods were used for generating subjects. Institutional Review Board for Human Subjects approval was obtained from the host institution.

Results

Institution Demographics

The sample, presented in Table 1, consisted of 99 ATEPs (53 private affiliation, 46 public affiliation; Athletic division = 45 NCAA Division I, 18 NCAA Division II, 26 NCAA Division III, 6 NAIA Division I, 4 NAIA Division II; Carnegie classification = 40 Doctoral, 33 Masters, 25 Baccalaureate, and 1 Specialized; average university/college enrollment = 11,779 ± 12,257 students).

Student Demographics

The sample, presented in Table 1, consisted of 403 students (251 women, 152 men; average age = 22.8 ± 2.2 years with a range of 19 to 36 years; self-reported grade point average = 3.30 ± .38 grade points).

Table 1. - Sample Demographics

	#	%
Private affiliation	53	53.6
Public affiliation	46	45.4
Athletic affiliation*		
NCAA Division I	45	45.40
NCAA Division II	18	18.20
NCAA Division III	26	26.20
NAIA Division I	6	0.06
NAIA Division II	4	0.04
Carnegie classification		
Doctoral	40	40.40
Masters	33	33.30
Baccalaureate	25	25.20
Specialized	1	0.01
Male	152	37.7
Female	251	62.2

*National Collegiate Athletic Association (NCAA)
National Association of Intercollegiate Athletics (NAIA)

Satisfaction Ratings

Total SAT was calculated by computing the mean score across all seven programmatic satisfaction factors. Mean SAT was 7.45 ± 1.45. Independent t tests comparing satisfaction by student gender and institution type (state versus public) were not significant, though the gender comparison approached significance, P = .07. An analysis of variance comparing the Carnegie classification found a significant difference between students in master's and doctoral level institutions ($F_{2,275}$ = 4.25, P = .01) with a small effect size (partial η^2 = .03). Students in master's level institutions reported slightly higher SAT than students in doctoral level institutions. A comparison across three division classifications (NCAA Division I/II/III, and NAIA) also found a significant difference ($F_{2,295}$ = 3.47, P = .03) with a small effect size (partial η^2 = .02). Students in NCAA Division II and III institutions reported higher satisfaction than NCAA Division I. NCAA Division I and NAIA satisfaction levels were about the same. There were no significant correlations between satisfaction and age or grade point average. Descriptive statistics for these analyses are presented in Table 2.

Ratings of SAT were also analyzed for each of the seven programmatic factors and are presented in Table 3. A Wilks' Lambda repeated measures analysis found significant differences ($F_{6,292}$ = 34.77, P < .001) in SAT among the seven factors, with a large effect size (partial η^2 = .42). Follow-up paired samples t tests found that students were less satisfied with career placement and use of technology than the other five factors and more satisfied with instructor availability than the other factors.

Multivariate analyses of variance found no differences in SAT on the seven factors between student gender or institution type, but differences were found on several factors based upon

Table 2. Group Descriptive Statistics for Satisfaction (SAT)

Groups	N	M	SD
Female	184	7.33	1.53
Male	114	7.64	1.30
State Institution	147	7.52	1.42
Private Institution	151	7.38	1.48
Baccalaureate	94	7.46	1.40
Masters	80	7.81	1.26
Doctorate	104	7.16	1.58

Carnegie classification ($F_{14,538} = 1.95$, P = .02) with a small to medium effect size (partial $\eta^2 = .05$). Because the significant differences in overall SAT were driven by differences in SAT for the seven individual factors, follow-up analyses of variance for each factor were partially redundant and, consequently, were conducted at a conservatively adjusted significance level of .05/7 or .0071. At this alpha level, two factors differed in SAT between the Carnegie classifications. Students from master's level institutions were moderately more satisfied with administration (M = 7.81±1.67) as compared to students from doctoral level institutions (M = 6.86±2.12), P = .004. Moreover, students from master's level institutions were more satisfied with the quality of instruction (M = 8.09±1.59) as compared to students from doctoral level institutions (M = 7.12±1.94), P = .001. Differences on the same two factors were also found when schools were compared based on athletic affiliation (NAIA, NCAA Division II/III, and NCAA Division I), A Wilks' Lambda repeated measures analysis found significant differences ($F_{14, 578} = 2.85$, P ≤ .001) with a medium effect size (partial $\eta^2 = .07$). NCAA Division II/III students were more satisfied with administration (M = 7.71±1.98) than NCAA Division I students (M = 6.92±2.14), P =.002. Moreover, NCAA Division II/III students were more satisfied with quality of instruction (M=8.03±1.72) than either NCAA Division I (M=7.25±1.89) or NAIA (M=7.0±1.46), P ≤ .001. There were no significant correlations between SAT on any of the factors and age or grade point average.

Importance Ratings

Total IMP was calculated by computing the mean score across all seven factors. Mean IMP was 8.84 ± 1.02.

Independent t tests and analyses of variance found no significant differences in overall IMP between student gender, institution type, Carnegie classification, and athletic affiliation. There were no significant correlations between IMP and age or grade point average.

Ratings of IMP were analyzed for each of the seven factors and are presented in Table 4. A Wilks' Lambada repeated measures found significant differences ($F_{6,292} = 53.64$, P < .001) in IMP among the seven factors, with a large effect size (partial $\eta^2 = .52$). Follow-up paired samples t tests found that the use of technology rated significantly less important than the other factors and quality of instruction in the major and quality of clinical experiences were rated higher than the other factors.

Multivariate analyses of variance found no significant differences in IMP on the seven factors between genders or Carnegie classification, but significant differences ($F_{7,290} = 3.42$, P = .002) were found based upon institution type, with a medium effect size (partial $\eta^2 = .08$). Follow-up independent t tests found that the significant variance was due to students from public institutions rating course instruction within the major as more important (M=9.54±.94) than students from private institutions (M = 9.20±1.31), P = .009. One programmatic factor, the use of technology in the classroom, was found to differ based on athletic affiliation. A Wilks' Lambda repeated measures found significant differences ($F_{14, 578} = 2.28$, P = .005) with a small to medium effect size (partial $\eta^2 = .05$) it was found that students from NCAA Division II/III schools rated technology as less important (M=7.29±2.06) as compared to NAIA (M=8.18±1.49) or NCAA Division I students (M = 8.04±1.76), P = .005. There were no significant correlations between IMP on most of the programmatic factors and age or grade point average. The exception was a small positive correlation ($r_{296} = .18$, P = .001) found between age and the importance of the use of technology in the classroom indicating a slight tendency for older students to report that this was more important.

Discussion

The sample of 99 programs is representative of the whole population of accredited programs based upon previous research.[15] The sample is consistent in terms of percentage distribution for private versus public affiliation and athletic affiliation. For the purpose of analysis, we combined the NCAA Division II and III affiliations as one group. We made this combination for two reasons: 1) the group sizes were too small for comparison, and 2) we are proposing that NCAA Division II and III are similar in size, facilities, and resources. There is no

Table 3. Descriptive Statistics for Satisfaction (SAT) with Programmatic Factors

Factor	M	SD
Career placement services	6.84	2.25
Use of technology	6.90	1.80
Administration	7.31	2.04
Quality of advising	7.33	2.29
Instruction in major	7.57	1.82
Quality of clinical experiences	7.99	1.82
Instructor availability	8.18	1.88

Table 4. Descriptive Statistics for Importance (IMP) with Programmatic Factors

Factor	M	SD
Career placement services	7.72	1.91
Use of technology	8.66	1.59
Administration	8.79	1.62
Quality of advising	8.89	1.41
Instruction in major	8.99	1.31
Quality of clinical experiences	9.37	1.15
Instructor availability	9.44	1.15

way of proving if the student demographics are consistent with the population as it is constantly changing and has not been defined.

We found that students were more satisfied with instructor availability than the other factors and quality of instruction in the major and quality of clinical experiences were rated higher than the other factors. It appeared that students were more concerned with the teaching than any other factor. This corresponds with the findings of Elliot,[5-6] who found that student centeredness and instructional effectiveness are the most important factors in student satisfaction.

The results demonstrated that students were less satisfied with the use of technology than the other five factors, and that the use of technology rated significantly less important than the other factors. The result that use of technology was rated as less satisfied and less important would suggest that this issue needs to be addressed but is not an immediate concern. There was a small positive correlation found between age and the importance of the use of technology in the classroom indicating a slight tendency for older students to report that this was more important. Hara and Kling[16] noted that student frustration with technology lowered satisfaction levels. We believe the small correlation may be due to 1) older students experiencing more frustration with technology; and 2) younger students taking technology for granted, and therefore rate it as less important.

The results suggest that overall students in master's level Carnegie institutions with NCAA Division II/III affiliation were slightly more satisfied than students in doctoral level Carnegie institutions with NCAA Division I or NAIA affiliation. Additionally students from master's level Carnegie institutions with NCAA Division II/III affiliation were moderately more satisfied with administration and quality of instruction than were students in doctoral level Carnegie institutions with NCAA Division I or NAIA affiliation. We believe that this may be due to the research demands upon the faculty in doctoral and NCAA Division I institutions that command their attention away from administration and teaching.

This study indicated that students from public institutions rated course instruction within the major as more important than students from private institutions. We found no significant differences in their ratings of satisfaction for this factor. We are not certain why this difference appeared. Perhaps private institutions, with typically smaller class sizes and enrollments, are doing a better job of delivering content and thus those students do not see that factor as important.

The results indicated a difference between athletic affiliation and use of technology in the classroom. Students from Division II/III rated use of technology in the classroom as less important than students in NCAA Division I or NAIA. Further studies are needed to explanation the nature of this difference.

Limitations

Several limitations of the study must be considered when reviewing our findings. In several situations we found statistically significant differences that could be artifacts of a large sample size, thus readers must consider the effect size when determining the impact of our statements. The manner in which we measured the seven factors is limited by just one question of satisfaction and importance for each factor. Our results indicate high levels of satisfaction and importance.

Conclusions

Several findings from this study cannot be correlated to other studies. This is the first study that has collected satisfaction and importance data across numerous institutions. All of the literature we have found to date is based upon studies conducted at individual institutions.

Based upon our results, the type of institution (private versus public affiliation, athletic affiliation, Carnegie classification) has a greater impact upon student ratings of SAT and IMP than the demographics of the student. This is important for not only program administrators but potential students as well. With this information, administrators can better anticipate the needs of students and address any perceived program weaknesses. Program administrators can use this information to educate potential students about what type of institution is going to be the best fit for their academic career.

The survey instrument provides the potential for an annual and longitudinal assessment of the same outcomes, thus allowing comparisons across time. This longitudinal aspect allows scores and values from one academic cohort to be compared to previous academic cohorts. This design will allow program directors and personnel to devise and measure the effectiveness of interventions (modification of clinical rotation schemes, use of new technology, creation of advising centers, creation of career counseling centers, etc.) to address measured weaknesses.

Future Research

Future studies should include more discrete institutional and student demographics such as the size of the ATEP (examples: number of students, average class/cohort admission size, number of athletic trainers, and number of dedicated AT faculty) and various student demographics (e.g., racial/ethnic background, socioeconomic background, and family education history). Further study needs to be done with regards to the interventions utilized by programs to address measured weaknesses and the effectiveness of those interventions. Future studies will develop a list of questions for each programmatic factor which will allow for greater exploration of each.

Acknowledgements

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