The Value of Student Chapters: A Difference in Perspective

By T. Bartlett Quimby, P.E., Ph.D.
Professor and Chair, University of Alaska Anchorage Civil Engineering

Abstract

Student chapters of professional organizations offer a variety of opportunities for students and the programs that support them. The level of activity of these organizations varies drastically from campus to campus. It is felt that the level of activity is directly related to the perceived value of the organizations. In an effort to determine the perceptions concerning the value of American Society of Civil Engineers (ASCE) student chapters a series of three informal surveys were conducted. An email survey intended to obtain perceptions of ASCE faculty advisors was made of participants in the inaugural ASCE Faculty Advisor Training Workshop in September 2000. About the same time, the chairs of civil engineering programs around the country were also polled by email. In addition, a panel discussion and open discussion session was held with ASCE students at the ASCE National Conference in the fall of 2000. This paper presents the various perceptions and comments on the differences. The comparisons help to understand some of the challenges faced by student chapters. This knowledge is used to develop strategies for strengthening the student experience through student chapter activities and services.

Introduction

There are over 250 student chapters and clubs of the American Society of Civil Engineers (ASCE) in the United States. These student chapters are supported by the civil engineering programs at the colleges and universities that they are associated with for a wide variety of reasons. It has been observed by the members of the ASCE Committee on Student Activities (CSA) that the activity of these student organizations varies considerably from program to program. Discussions among the members of the ASCE CSA and with faculty advisors have indicated that a major reason for this variance in activity levels is, in part, the result of a difference in value placed on the student chapters and clubs by the various groups that have a stake in their success. Indeed, the most highly rated student chapters/clubs (based on ASCE CSA assessment of annual reports) all appear to have a department head, faculty advisor, and/or student officers who see enough value in the system to drive their chapter/club to success. To determine the value placed on the student chapter/club experience, polls of faculty advisors, department chairs, and students (three major parties associated with the success of student chapters/clubs) were conducted in 2000 to determine what the difference in value perception was among the groups. It is felt that knowing the differences in perspective will help the ASCE CSA and the local chapters/clubs in developing a more effective student program.

The investigation described herein was not originally intended to be a thorough or a scientifically
in depth study of the perceptions and their relationships. Portions of the data have been shared in various ASCE forums where responses have indicated the data should be shared more broadly in order to stimulate thought and discussion that may lead to more active and effective student chapters/clubs.

The mission of ASCE student chapters

ASCE recognizes two different student organizations, chapters and clubs, whose objectives are quite similar. The distinction between the two groups is made depending on the accreditation status of the program that supports them. The student organizations that are supported by four-year civil engineering programs that are accredited by the Accreditation Board Engineering and Technology are referred to as “chapters”. All other ASCE recognized student groups are referred to as “clubs”. For simplicity in this discussion all ASCE recognized student groups will be referred to as chapters.

The section of the annual ASCE Official Register on Student Activities states that “the objective of the ASCE Student Chapter is to help students prepare themselves for entry into the Civil Engineering profession and society.” This section goes on to indicate that the activities of the student groups can be used by civil engineering programs to supplement course work in non-technical subjects. The non-technical subjects are referred to as “professional matters”. The section also proposes that chapters are valuable in helping students establish professional contacts, develop interpersonal skills, and develop organizational and leadership skills in ways that few course related activities can.

To implement this program, the ASCE Board of Direction authorized the establishment of student chapters in 1920. Since this time, ASCE student chapters have become a common part of civil engineering programs in the United States.

The general organization of a typical student chapter consists of a group of civil engineering students with student officers, a faculty advisor, and one or more practitioner advisors. The establishment of a student chapter requires a commitment from the civil engineering department that sponsors the group. Each chapter is a member of one of twenty student regions that meet together annually. The oversight of the student chapter structure is given to the ASCE CSA which reviews annual reports submitted by the chapters, recommends national recognition and awards, monitors regional conference activities, provides training for student chapter officers, and recommends policy and programs to enhance the effectiveness of the student activities program.

The observation of many ASCE CSA members over the years indicates that the most active and vibrant student chapters have the benefit of strong support by their departments, active faculty advisors, and students who are motivated to round out their technical education with professional development activities. The involvement of practitioner advisors can also have a large impact on the success of a student chapter, however few student chapters have been effective in recruiting strong practitioner advisors. The level of success of chapters is dependent on the level of effort invested by the involved parties. The level of effort devoted to making the chapters successful is related to the value that each of the involved parties place on the chapter experience.
In order to understand the value that programs, faculty advisors, and students place on student chapters, three different polls were conducted.

First, an e-mail poll, was conducted via the ASCE sponsored department heads list serve to determine what value the department heads place on their department’s student chapters. Department heads are key players in determining the institutional support for a chapter. Department heads most frequently are the key individual in appointing the faculty advisor, making workload adjustments for faculty advisors, and encouraging the support of other faculty. The value that department heads place on ASCE student activities has a major impact the success of their program’s student chapter.

The second part of the investigation involved a poll of the 36 faculty advisors that attended the first ASCE Faculty Advisor Training Workshop held at ASCE headquarters in September 2000. This e-mail poll was conducted prior to the workshop. Faculty advisors have a key role in providing leadership training and inspirational motivation for their student chapters. The effectiveness of faculty advisors is determined, in part, by the value they place on the student chapter experience and, in part, by the support that they receive from their departments. Involved, dedicated, well-trained, and well supported faculty advisors have a big impact the success of their chapters.

Students are the key ingredient of a student chapter. Their motivation for participation in student chapters comes from a variety of sources. In order to determine the value that students place on the student chapter experience a panel discussion and directed forum were conducted at the ASCE 2000 National Conference. The student comments were recorded and presented here.

The Department Head Survey and Results

The department head survey was distributed to approximately 150 civil engineering department heads via the ASCE department heads listserve. Forty-eight responses were received. In five cases the department heads had forwarded the survey on to their chapter’s faculty advisor for response. These responses are not included in the results, leaving forty-three responses in the final tally of results. All forty-three respondents reported supporting an ASCE student chapter.

The responses received came from a fairly small (approximately 17%) number of the departments that host ASCE student chapters. There is the possibility that the department heads that responded to the survey are those that value student chapters more than others.

The first part of the survey asked each department head to rate a series of eight statements concerning their student chapters contributions on a scale of one to five with one being not true and five being very true. The statements and the responses are listed in Table 1.

The categories in Table 1 list some commonly heard reasons for supporting student chapters. Realizing that there may be other benefits derived from the student chapter experience, the department heads were also requested to list other benefits that their programs received from their
chapters. The responses were gathered and a classification system developed to group similar responses. Table 2 contains these responses and the percentage of the forty-three respondents whose comments addressed each category. Many of the responses in Table 2 appear to be duplicates of the statements found in Table 1 which raises some concern of the interpretation of the statements in Table 1.

**Table 1**
Department Head Perceptions of Common Student Chapter Contributions

<table>
<thead>
<tr>
<th>The Student Chapter provides (rate 1 to 5):</th>
<th>Minimum</th>
<th>Average</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>A vital social function</td>
<td>3</td>
<td>4.59</td>
<td>5</td>
</tr>
<tr>
<td>Leadership development</td>
<td>3</td>
<td>4.70</td>
<td>5</td>
</tr>
<tr>
<td>Connection with professionals</td>
<td>2</td>
<td>4.14</td>
<td>5</td>
</tr>
<tr>
<td>A better understanding of the profession</td>
<td>2</td>
<td>4.05</td>
<td>5</td>
</tr>
<tr>
<td>Recognition within the university</td>
<td>1</td>
<td>3.30</td>
<td>5</td>
</tr>
<tr>
<td>Regional recognition</td>
<td>1</td>
<td>3.39</td>
<td>5</td>
</tr>
<tr>
<td>National recognition</td>
<td>1</td>
<td>2.77</td>
<td>5</td>
</tr>
<tr>
<td>Application of principles learned in courses</td>
<td>1</td>
<td>3.41</td>
<td>5</td>
</tr>
</tbody>
</table>

**Table 2**
Department Head Comments on Other Benefits

<table>
<thead>
<tr>
<th>Response Category</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty/student interaction</td>
<td>28 %</td>
</tr>
<tr>
<td>Networking with other students</td>
<td>26 %</td>
</tr>
<tr>
<td>Networking with community/professionals</td>
<td>26 %</td>
</tr>
<tr>
<td>Teamwork experience</td>
<td>12 %</td>
</tr>
<tr>
<td>Leadership training</td>
<td>9 %</td>
</tr>
<tr>
<td>Brings professionalism to the program</td>
<td>5 %</td>
</tr>
<tr>
<td>ASCE competitions</td>
<td>2 %</td>
</tr>
</tbody>
</table>

The responses in Tables 1 and 2 tell what department heads perceive as being the current contributions of their chapters to their programs. The statements and questions do not ask for their perceptions on what the most valuable contributions are. Consequently, the department heads were asked to comment on their chapter’s most significant contribution to their program. The responses were categorized and tabulated in Table 3 along with responses of faculty advisors to the same question. The percentage values are the percentage of respondents whose responses addressed the given category. The Table 3 responses are considered to be the closest measure of the department head’s perception of student chapter value.

**Faculty Advisor Survey and Results**

After reviewing the results of the department heads survey, it was decided to simply ask the faculty advisors the final question from the department heads survey regarding what they felt the
most significant contributions of their student chapters were to their civil engineering programs. This question was sent out to the faculty advisors prior to their attendance at the workshop.

Higher percentages are found in most categories because the faculty advisors tended to provide longer lists of contributions than did the department heads.

Table 3
Department Head and Faculty Advisor Perceptions of Most Significant Contributions to Program

<table>
<thead>
<tr>
<th>Response Category</th>
<th>Dept. Heads</th>
<th>Faculty Advisors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social – unifying influence</td>
<td>53 %</td>
<td>66 %</td>
</tr>
<tr>
<td>Professional development</td>
<td>44 %</td>
<td>66 %</td>
</tr>
<tr>
<td>Student representation</td>
<td>21 %</td>
<td>0 %</td>
</tr>
<tr>
<td>Leadership training/opportunities</td>
<td>14 %</td>
<td>31 %</td>
</tr>
<tr>
<td>Teamwork experience</td>
<td>14 %</td>
<td>50 %</td>
</tr>
<tr>
<td>Community outreach/volunteer activities</td>
<td>9 %</td>
<td>25 %</td>
</tr>
<tr>
<td>ABET assessment</td>
<td>5 %</td>
<td>6 %</td>
</tr>
</tbody>
</table>

Student Perceptions

Lacking a convenient method for polling the students on a national level, the student perceptions are extracted from notes taken at a session of the 2000 ASCE National Conference where a panel discussion and an open forum were held to discuss the value of the ASCE student chapter experience.

A panel of student officers from the very active student chapters at Washington State University, Oregon State University, and California Polytechnical University – San Luis Obispo were asked to present information about their programs and to discuss what they felt the value of the student chapter experience is to their undergraduate civil engineering education. Following the panel discussion, an open forum was held where the assembled students (approximately 200 students from around the United States) were asked to articulate what they felt the value of the student experience was. A list of values was kept with the intent of ranking them by relative importance. Time expired before a ranking could be made of the list. The students proposed the list given below. Note that the list is in the order that the values were proposed.

The student chapters:

- are the link between academia and the profession,
- provide an environment for team work and problem solving,
- offer a social function,
- create opportunities for community involvement,
- facilitate a network between students, faculty, and practicing professionals,
- help students develop “people” and leadership skills,
- provide a mechanism for competitions that allow application of technical skills,
• are a political voice to influence professional life,
• provides independent opportunities to apply writing, speaking, and technical skills, and
• can be used to help academic departments with recruiting students.

Comparison of Perceptions

Comparison of department head and faculty advisor responses can be made since the major survey question was the same for each group. Correlating these with the student perceptions is a more difficult and anecdotal at best.

The fact that the faculty advisors provided longer lists of contributions than did the department head suggests that the faculty advisors see more value in the student chapter experience than do the department heads. This correlates well with anecdotal observations made by CSA members after reviewing annual reports and in visiting with student chapter representatives at regional and national events. The difference in valuation may result from the fact that department heads are not as intimately involved with student chapters as are faculty advisors.

It is interesting to note that both the social and professional development contributions are the most frequently mentioned contributions by both the faculty advisors and the department heads. These two areas were also a part of the student’s list of student chapter values. The social aspect is generally considered to be a necessary component to the educational experience because it helps students to bond in a meaningful way with each other and the faculty. The bonds that are formed tend to reduce anxieties which, in turn, helps students and faculty work and to perform better in their educational pursuits.

The development of professionalism in students is difficult to do in a structured, controlled classroom environment. A student run chapter provides an independent organization that requires the students to develop professional behavior skills in order to have success. The value of this experience appears to be relatively high for both department chairs and faculty advisors. The development of interpersonal and leadership skills was also listed by the students as a value associated with the student chapter.

There is a significant divergence on four of the five remaining categories listed in Table 3 between the faculty advisors and the department heads.

A number of department heads placed value on student representation in program related matters while no faculty advisor mentioned this contribution. Department heads have more interest in obtaining input from all constituent groups while assessing and improving their programs than do faculty advisors. This difference might also reflect the difference in focus of the two groups. The students referred to the chapter being a political voice to influence professional life. This reference can be considered to be a mild reference to influencing their academic life as well.

Faculty advisors commented on leadership development as a value twice as frequently as did the department heads. The students also listed this area as one of the values of the student chapter experience. Even though there was a significant difference in the frequency of the comments, the
frequencies relatively low for both the faculty advisors and department heads, indicating that leadership is of secondary importance to them.

The widest difference in frequency was in relation to the value of the teamwork experience. The low incidence of comments by department heads may indicate that they see this of secondary importance. The high incidence of comments by faculty advisors (just below comments on the social and professional development benefits) indicates that they see this as a primary benefit of student chapters. This one of the first areas presented by the students as well.

The faculty advisors also mentioned community and volunteer activities three times more frequently than did the department chairs. With fairly low incidences, it is apparent that this area is seen as being of very minor value by the department heads and of secondary value by the faculty advisors. The students also felt that this area was one of value.

Both the faculty advisors and the department heads rarely mentioned the student chapters as being a valuable part of their ABET accreditation processes. The students did not mention accreditation involvement at all, which is not surprising since they rarely are intimately involved in accreditation processes.

The one area mentioned by the students as being of value that was not in someway addressed by the department head and faculty advisor comments were the student competitions. The students indicated that these experiences were valuable because the competitions allowed them to apply their technical skills, learn and refine leadership skills, and to develop their teamwork skills.

**Conclusions**

Given the lack of consistency and rigor in the sampling techniques there are only a few conclusions that can emphatically stated. Several other conclusions can be extrapolated with caution.

The first conclusion reached is that all the parties see the student chapters as contributing value to their civil engineering program. It is not surprising that the faculty and students surveyed consider this to be true as the ones sampled are those that see enough value in the chapter to be involved in the process. It would be interesting, though difficult, to survey the civil engineering students and faculty, as a whole, to get a perception of value from more than those that are actively involved in the chapter experience.

The data also suggests that the primary contributions of value to the civil engineering education process are seen as being the social and professional development activities. The faculty advisors and students tend to see the teamwork experience as being of primary value as well.

The secondary contributions, from the faculty advisors and department heads point of view, are leadership training and community/volunteer service. The department heads also see student representation as one of the secondary contributions of value to the programs. The students have also suggested this as one of the values of the student chapter experience.
Differences in perspective in regards to teamwork and student representation suggest that the department heads and faculty advisors have slightly different reasons for supporting student chapters. It is not clear that these differences in perspective are recognized by the two parties.

It can also be concluded that value of the student chapters as perceived by department heads, faculty, and students is in line with the intent of the organizational objectives as stated in the ASCE Official Register. The values of social and professional development are in line with ASCE’s objective of supplementing technical education with experience in “professional matters”. The values of leadership training and teamwork experience correlate with the ASCE suggestion that student chapters are a “good medium for developing skills in personal and public relations”. All the identified values relate to the ASCE statement that the chapters “contribute to broad personal development by stimulating an early professional consciousness”.

In addition to the comparison of perceptions, another major contribution that has evolved from this investigation is the list of perceived values that define the contributions of the student chapter experience to a student’s civil engineering education. There does not appear to be any such list compiled from a systematic investigation involving the major concerned parties in the literature.

**Recommendations**

Given the value perceived by the various groups that were included in the investigation, it would be appropriate to encourage civil engineering programs to continue and enhance the support of their chapters. The values identified in this investigation are more fully realized within the volunteer experience of a chapter than in a typical course.

The ASCE CSA should be aware of the perceived values as they seek to implement policy and programs that strengthen the student chapter experience. Further publication of these values by the CSA may encourage greater participation in chapters of low activity. All too often, the CSA members hear comments from students and faculty that those who fail to provide necessary support for chapters do not understand the value of the student chapters and that something should be done to validate the contributions of the student chapter experience to a student’s development. This study can be used by all concerned parties to convince department heads and civil engineering faculty on the value of the student chapter experience in an effort stimulate greater support.

**Acknowledgements**

The willing contributions to this investigation by the department heads, faculty advisors, and students are all greatly appreciated. The incentive and encouragement from the ASCE CSA and the ASCE Educational Activities Division also played a major role in the investigation and the analysis of the results. The support and contributions of such devoted colleagues is always appreciated.
Bibliography

1. American Society of Civil Engineers (2001), *Official Register*, page 201.
Biographical Information

T. BARTLETT QUIMBY, P.E., Ph.D.
Dr. Quimby is currently a Professor in and the Chair of the civil engineering program at the University of Alaska Anchorage. He served a four-year term on ASCE Committee on Student Activities, one year as the Chair of the committee. He has worked with ASCE student chapters since 1989. He is also a member of the ASCE/AISC National Student Steel Bridge Competition Rules Committee.