

Student-owned, Ability-based Leadership Development in Extra-curricular Activities: The Engineers' Week Example

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Abstract

This paper describes a student organization leadership team's efforts to self-assess their own personal and their team's state of development and demonstration of a specific set of

competencies mapped to the ability-based outcome, “*Leading Individuals and Teams to Accomplish Goals*.” The team results are presented and discussed within the context of the engineering undergraduate experience offering a practice field for development and demonstration of “Leadership.”

Introduction

In previous work Hanneman et al.^(1,2,3,4) have described competency-based assessment and development tools to address the ability-based outcomes required for accreditation of engineering programs under ABET Engineering Accreditation Commission’s Engineering Criteria⁽⁵⁾. Using Online Performance and Learning (OPAL), the College of Engineering has measured student development and demonstration of fourteen competencies mapped to the eleven ability-based outcomes of Criterion 3 of the Engineering Criteria. Although not used for assessment related to ABET Outcomes, OPAL also provides a cluster of competencies determined by Development Dimensions International to be mapped to the “ability to *lead individuals and teams to achieve goals*.” This particular “leadership outcome is mapped to eleven specific Competencies, each defined by a set of observable and measurable Key Actions. The eleven competencies mapped to this outcome are:

- Teamwork
- Building a Successful Team
- Meeting Participation
- Meeting Leadership
- Leading Through Vision and Values
- Coaching
- Follow-Up
- Delegating Responsibility
- Aligning Performance for Success
- Developing Others
- Information Monitoring

Each competency is characterized by a clear concise definition and a set of observable and measurable Key Actions. The Key Actions are the elements that are measured in an assessment activity. For example, the definition and Key Actions for *Developing Others* are:

Definition: Developing Others

Planning and supporting the development of individuals' skills and abilities so that they can fulfill current or future job/role responsibilities more effectively.

Key Actions:

- *Collaboratively establishes development goals*
- *Collaboratively establishes development plans*
- *Creates a learning environment*
- *Monitors progress*

The award winning student organization, Engineers' Week (E-Week), is responsible for developing and delivering a week-long collection of activities that include the largest, indoor engineering career fair in the United States, a high school Senior Visitation program serving over 400 students and parents, and a collection of intramural sporting, social and community outreach activities. The core leadership team of E-Week, E-Week Central Committee, is composed of approximately fifteen students that include the E-Week Co-Chairs and Subcommittee Chairs. This leadership team is chosen using a conventional application, screening, and interview and selection process. Candidates routinely represent students that have a demonstrated record of leadership in the classroom, experiential education workplace and extra-curricular and co-curricular activities.

Assessment

To better understand the leadership strengths and development needs of the E-Week Central Committee, each student completed a self-assessment of the eleven competencies, using On-Line Performance and Learning⁽⁶⁾ (OPAL™), provided by Development Dimensions International. Each student could access a report documenting his/her personal responses and the average value responses of the total team for each Key Action and each Competency. The Competency values are computed from the average values of the Key Action responses associated with that Competency. The graphical presentation of the Central Committee average relative development and demonstration for these eleven competencies is shown in the Chart: E-Week Leadership Survey 2003 below.

Analysis

The E-Week Leadership Survey 2003 chart below illustrates the relative strength of development of "Teamwork" and team development and function. This is consistent with the significant efforts of programs and faculty to address teamwork and team participation development over the past several years. The "ability to function on a multidisciplinary team" is an ABET Engineering Criterion 3 Outcome. It is particularly interesting to note the four least well developed competencies: *Information Monitoring*, *Developing Others*, *Aligning Performance for Success*, and *Delegating Responsibility*. Considering the Definition and Key Actions for Developing Others, it is easy to recognize that the traditional classroom and laboratory experiences do not offer significant opportunity for students to develop and demonstrate these Key Actions. Participation in student organization, such as E-Week, presents the students with

and excellent opportunity to develop and demonstrate these specific Key Actions while carrying out the responsibilities to these leadership positions.

References

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Charts and Graphs

E-Week Leadership Survey 2003

