

**AC 2009-785: PROMOTING FACULTY DEVELOPMENT USING INDUSTRY
CONSULTING ACTIVITIES**

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Promoting Faculty Development Using Industry Consulting Activities

Abstract

Faculty development is a major concern for faculty, academic administrators and students. Through experience, the author has discovered that an important source of faculty development is industry consulting and training activities. From the individual faculty member's standpoint, consulting can provide real world, work related experience and enhance teaching skills. Also, consulting can improve the faculty member's expertise in his/her discipline. Because of the interrelated nature of teaching, scholarship and service initiatives, faculty have the chance to simultaneously contribute to each of their promotion and annual evaluation criteria with a single consulting/training activity.

For academic administrators, consulting activities not only provide a criterion for annual faculty evaluations, but an opportunity for faculty to engage in partnership initiatives. A current theme evolving throughout institutions of higher education involves collaboration and partnership initiatives. Consequently, universities are encouraging various collaborative efforts because of the positive synergies that can result for everyone involved. The author has discovered that industry consulting and training can be an important source of collaboration with benefits for the university and industry. Through consulting, faculty can provide valuable services to industry and the community, and help to promote the reputation and goodwill of the academic department and university.

For students, consulting activities can help to ensure that teaching methodologies and the subject expertise of faculty are up-to-date. Industry training offers faculty the opportunity to develop their presentation and audience management skills. Because consulting enables the faculty to discuss and provide examples of current work related concerns, student interest and learning are enhanced.

This paper will describe how the author has used various consulting and training activities to develop his expertise and teaching skills, provide service to industry, and promote the university. The paper will provide guidelines and advice for new faculty on the best practices for using consulting activities for faculty development. The paper will focus on the benefits faculty can derive from industry consulting and offer ideas on how they can utilize this faculty development technique.

Introduction

Faculty development is a major concern for faculty, academic administrators and students¹. Consulting activities offer faculty the opportunity to engage in faculty development by allowing them to develop their expertise and enhance their teaching skills. Also, consulting initiatives can provide faculty, including engineering and technology faculty, with tremendous

opportunities to fulfill their annual evaluation criteria and in the process, benefit students, the university and industry^{2, 11}.

The author's expertise on a variety of leadership issues, including diversity management and creative thinking, has been emphasized in his teaching, scholarship and service activities. In the paper the author provides examples of how consulting/training activities have contributed to his teaching, scholarship and service initiatives. Given the interrelated nature of teaching, service and scholarship, some of the examples provided may overlap.

Consulting and Teaching

Faculty engaged in industry training activities have an excellent venue to develop their teaching and presentation skills. The greater the variety of forums for faculty to practice and develop their presentation skills the greater the opportunity to refine their teaching³. Industry training allows faculty to experience different forums and a variety of audiences. Training sessions can range from those that are comparable to most university classrooms to training sessions held on the production floor during working hours. At the same time, the educational backgrounds of trainees can range from those with less than high school educations to trainees with graduate college degrees. Also, the work experience of trainees can vary from trainees with little work experience to those with over twenty-five years of experience. Industry training can expose faculty to diverse trainees with different cultures, genders, races, ages and other distinctions. Consequently, faculty who have experienced this variety of training forums and participants are better prepared to teach the students encountered in the typical classroom.

Although there are many examples of how the author's consulting and training experiences have promoted his teaching, three examples are provided.

Example 1: As a teacher dedicated to enhancing the educational experience of students, the author continuously experiments and looks for creative ways to improve his teaching. The author's consulting/training experiences have helped him to develop his teaching style. Over the past several years, consulting/training activities have helped the author to develop an "issues based learning" approach to teaching. This learning approach, which enlists active learning by using issues to provide industry training, has been adapted for teaching in the classroom. The author's experience with issues based learning in training led to the use of this technique to teach OLS 454, "Gender and Diversity in Management." Using issues, instead of chapters, is an alternative and effective approach for discussing critical concerns of diversity management to develop multicultural leadership skills. Incidentally, the author has documented this teaching approach with a conference paper titled, "Using Issues To Teach Diversity: An Interactive Learning Approach," and a published book titled, "Issues on Gender and Diversity in Management"¹². Page 9 of the paper provides additional information on the use of issues based learning with industrial training.

Example 2: The author's consulting/training experiences have allowed him to develop his presentation and classroom management skills. As most teachers eventually discover, developing effective presentation and classroom management skills is an ongoing learning

process. Additionally, the author recognized that training employees and teaching students involve similar skills. Consequently, industry training accelerated this learning process by providing additional experience, with different audiences and forums. For example:

1. Develop presentation skills:

Through industrial training, the author has developed his presentation skills, including how to:

- Adapt his teaching/training approach to match the characteristics of the audience (i.e. experience, age, gender)
- Project his voice (speak with passion and clarity)
- Provide work related examples of industry concerns and solutions to promote interest, participation and learning
- Expertly respond to student questions dealing with industry concerns
- Speak with confidence on his area of expertise
- Improve his speech fluency
- Use of humor to defuse tension and promote interest

2. The importance of asking questions:

Consulting/training has taught the author how to use questions to promote his teaching. The author has used questions as a teaching tool to:

- Facilitate student interest in a subject (especially when interest in a topic begins to fade)
- Introduce a new topic
- Deal with disruptive students
- Change the pace of the author's presentation
- Solicit student feedback
- Check on whether students are understanding the material

3. Dealing with distractions:

Training on a company's facilities often includes dealing with various distractions and other obstacles to learning. Employees walking in and out of training sessions at different times, employees talking to co-workers on immediate work concerns, and employees appearing to be uninterested or inattentive are situations that are sometimes encountered with training sessions. Through the author's industry training experiences, he has learned how to remain focused, composed, and in control while experiencing these obstacles to learning. His training experiences have also provided him with the ability promote interest and participation by extracting practical application from theory, and responding to current and specific work related questions in an expeditious manner.

Example 3: Based on the author's expertise and consulting/training activities he has been able to develop and introduce courses for his academic program.

1. OLS 350, "Creativity in Business and Industry," has undergone major revisions from how the course was initially taught. Originally, the course was taught primarily without work related application or examples. Most of the subject matter dealt with theory and personal (non-work related) situations. As a result of consulting/training, the author has been able to combine theory with practical application, provide examples of how creativity can be

developed and used with work related situations, and devise student projects that focus on work related problems and solutions.

2. The author's consulting/training experiences helped him to recognize the need for supervisory training on diversity management. OLS 454, "Gender & Diversity in Management," was introduced into the curriculum as a result of the author's recognition of the need for students to develop their diversity management skills. Recognizing the need for additional and advanced diversity education, the author is currently developing a dual level course (senior and graduate level course) on diversity management, OLS 550, "Managing Diversity".

Ideas for Engineering/Technology Faculty:

Ideas on how consulting/training can be used to promote teaching- faculty can use consulting/training to:

- Practice and develop presentation and classroom management skills
- Test new teaching techniques
- Update courses and develop new courses
- Extract practical application from theories and formulas

Consulting and Scholarship

Consulting involves extensive research, creative problem solving and preparation in order to adequately address the different concerns confronting each organization. The opportunities that industry consulting offers faculty in the area of scholarship are limitless, especially when one considers the current academic theme of collaboration and partnership initiatives⁴. The various collaborative efforts available through industry consulting can provide faculty with valuable sources of scholarship and research funding. Consulting initiatives can provide engineering and technology faculty with tremendous opportunities to engage in industry problem solving, research and other types of creative endeavors. This is especially important given the degree of global competition and technological innovation that is rapidly taking place in virtually every industry. Because every organization is unique, every consulting/training activity essentially constitutes the production of creative work. Consequently, the author has been able to use his consulting experiences as a springboard to publications.

Although there are many examples of how the author's consulting and training experiences have promoted his scholarship, two examples are provided:

Example 1: As previously stated, the author's training experiences have been used to experiment and develop different teaching approaches. The author has presented and published conference papers on various teaching techniques that have been derived from industrial training.

For one training program, the author helped to develop "best practice" leadership training modules that were used with a particular company. Overtime, the best practice modules were refined and used for training with other companies. Based on these training modules, the

author co-wrote and published a conference paper titled, “Enhancing Organization And Employee Productivity: An Industry Experience In Leadership Training And Development.”

The author’s consulting/training activities have been instrumental in publishing other conference papers. Table 1 lists the titles of selected refereed papers presented and published at sectional, national and international conferences which were totally or partially derived from consulting/training activities.

Table 1: Titles of selected refereed papers presented and published at conferences (2004-2008)

“Teamwork and the Creative Process: Promoting Creative Thinking Through Teams”
“Using Classroom Civility to Enhance Learning and Promote Valuing Diversity”
“Promoting Diversity Education in The Community: A Technique to Gain Experience in Diversity and Share Expertise”
“Teaching Foreign Students: Classroom Tactics for Teaching Students Who Speak English as a Second Language”
“Teaching Creative Thinking to Engineering and Technology Students”
“Teaching Diversity In Non-Diversity Courses”
*“Manufacturing Industry Needs Global Leadership Skills: Shaping The Next Generation Of Leaders”
“Peer Experiences In Diversity: Students Learning From Students About Diversity”
“Using Issues To Teach Diversity: An Interactive Learning Approach”
*“The Global Manufacturing Challenge To Our Advantage: Begins With Students”
*“Enhancing Organization And Employee Productivity: An Industry Experience In Leadership Training And Development”
“Managing Diversity And The Law: Diversity Training Requires Training In Human Resources Laws”

*Co-authored conference paper

Example 2: From 1990-2000 the author wrote over 40 non-refereed articles for the local newspaper on subjects related to his expertise and consulting experiences. In the past, the author used some of those articles as discussion topics in his courses. Also, some of those articles were used to write and publish a conference paper on issues based learning titled, “Using Issues To Teach Diversity: An Interactive Learning Approach.” Subsequently, some of those articles were used as a springboard to writing and publishing the previously mentioned book titled, “Issues on Gender and Diversity in Management.”

Ideas for Engineering/Technology Faculty:

Ideas on how consulting/training can be used to promote scholarship- faculty can use consulting/training to:

- Gather research data

- Publish consulting activities/results
- Investigate publishing opportunities using work related cases studies, experiences and solutions
- Develop expertise
- Test theories and formulas for practical application

Consulting and Service

Industry training allows faculty the opportunity to provide service to the university, community and industry. Training initiatives can help industry to remain competitive by updating employee skills, solving organizational problems and providing other proactive initiatives^{5, 6}. While benefiting industry, the local community is helped in terms of jobs for residents and raising the standard of living. Faculty consulting initiatives benefit the university by helping to promote the institution’s goodwill and reputation.

Given the university’s longtime commitment and partnership initiatives with the community, the author’s consulting activities have been especially significant in helping to complement those efforts and further promote the university’s name and reputation. Also, the frequency and variety of consulting activities provided by the author have helped to make him a well known resource person for the university and community.

Although there are many examples of how the author’s consulting and training experiences have promoted his service initiatives, three examples are provided:

Example 1: Based on the author’s expertise and consulting/training activities, he was appointed by the Chancellor as the Equal Employment Opportunity Officer (EEO) for his university. The author held this appointment (.50 release time) for twelve years (1990-2002). This position involved frequent interaction with faculty, staff, students and the community. Consequently, the author was able to use the position to help promote the university throughout the community, state and nation. Additionally, the position also helped to enhance the author’s recognition and expertise in diversity by providing him with technical experience and the opportunity to interact with other experts/professionals on a regional, state and national level. Finally, the EEO experience benefited the author’s students by enabling him to combine diversity theory with practical application.

Example 2: Based on the author’s expertise and consulting/training activities, he has often been asked to make presentations to university and community groups. Developing contemporary, informative and customized presentations for different groups requires extensive research and preparation. Consequently, in addition to providing valuable service, these presentations have enhanced the author’s recognition in his area of expertise. Table 2 lists the titles of selected presentations the author has made to various university and community groups.

Table 2: Titles of selected presentations the author has made to various university/community groups (2002-2008)

“Fundamentals of Creative Thinking”

“Good Customer Service is Good for Everyone”
“Creative Thinking for Creative Writing”
“Improving Your Creative Thinking”
“How To Jumpstart Your Career To Achieve Career Success”
“Importance Of Diversity Training”
“Sexual Harassment In The Workplace”
“Becoming An Effective Leader”
“Affirmative Action In The Workplace”
“Diversity In The Workplace”
“Discrimination And Harassment In The Workplace”
“Leadership And Teambuilding”
“Equal Employment Opportunity In The Hotel/Restaurant Industry”

Example 3: Based on the authors’ expertise and consulting/training activities, he has been asked to serve on university committees that are related to his expertise. Table 3 lists selected university committees the author has served on that reflect his expertise.

Table 3: Selected university committees the author has served on related to his expertise (2004-2008)

Americans with Disabilities Act (ADA) Committee
Advisory Committee on Equity
Task Force on Classroom Civility

Ideas for Engineering/Technology Faculty:

Ideas on how consulting/training can be used to promote service- faculty can use consulting/training to:

- Investigate opportunities to provide service to university and community groups/committees that can utilize their expertise
- Investigate membership on committees or community groups where faculty can develop their expertise
- Make presentations to university and community groups based on their expertise

Benefits of Faculty Consulting to Students

It’s important for faculty to have industry related experience in order to integrate such experiences into the subjects they teach⁷. Providing students with relevant and up-to-date examples of industry concerns and solutions can better prepare them for their future careers.

As the future leaders of business organizations, engineering and technology students will need to learn how to effectively deal with workplace concerns. Faculty can take the initiative by providing the relevant educational experiences to ensure that students develop the requisite skills for their careers. Acknowledging the future leadership roles of students, many engineering and technology programs, including those in the author’s academic department, have emphasized the importance of work related experiences to help students develop their

disciplinary skills⁸. Students will have a tremendous impact on upcoming events that will affect everyone everywhere. Consequently, faculty with industrial experience can provide engineering and technology students with the type of practical education they must have if they are going to be effective leaders¹¹.

At the same time, many accreditation organizations such as ABET, have established academic standards for ensuring that work related experiences are incorporated into the curricula. Therefore, engineering and technology faculty need to acclimate themselves with industry related issues and possess industry experience to provide relevant examples for their students. An effective way for faculty to gain work related experience and develop expertise is through industry consulting initiatives¹.

Benefits of Faculty Consulting to Industry

Consulting and training initiatives are a valuable source of collaboration creating win-win scenarios for faculty and industry. Some of the major benefits of faculty consulting to industry are listed in Table 4¹⁰.

Table 4: Major benefits of faculty consulting and training to industry

Develop employee skills
Incentive for employees to engage in continuous education and training
Raise industry awareness of innovative production techniques
Promote industry competitive advantage
Promote collaboration with the university
Improve problem-solving of industry concerns

Globalizations has raised industry standards and increased competitive intensity for all companies⁹. Faculty can help companies to remain competitive by providing the knowledge, skills and latest techniques for improving productivity and innovation. Faculty consulting and training can be a valuable source of collaboration, with tremendous opportunities to satisfy the needs of industry.

Benefits of Faculty Consulting to the University

Faculty consulting and training provide benefits for the university. Table 5 lists the major benefits of faculty consulting and training initiatives for the university².

Table 5: Major benefits of faculty consulting and training for the university

Promote the university's goodwill and reputation
Promote student recruitment and retention
Improved local job opportunities for students
Increased collaboration opportunities for faculty
Increased faculty expertise through industry related experiences

Increased opportunities for student internships
Increased opportunities for external funding raising

Issues Based Learning

As previously stated, consulting/training activities have helped the author to develop an issues based learning approach for teaching. This learning approach, which uses issues to provide industry training, has been adapted for teaching in the classroom. The author has developed and used issues based learning with consistent success to teach various courses¹². Using issues, instead of chapters, is an alternative and effective way to promote learning. In the classroom, the author has been able to combine the issues based approach with other student centered learning methods, such as interactive videos, student presentations, team activities and simulated problem-solving situations.

The issues based approach for providing industry training is trainee-centered and involves active learning as opposed to traditional passive learning methods. This technique can challenge trainees to examine and discuss workplace issues and identify solutions to problems confronting the workplace and industry. Based on the author’s experience, trainees enjoy discussing work related issues. Using an issues based approach allows participants the opportunity to analyze workplace and industry concerns, develop an understanding of different points of view, and increase their critical thinking skills. Table 6 lists the major reasons training participants like the issues based learning approach.

Table 6: Major reasons training participants like issues based learning

Learner centered
Learners receive immediate feedback
An alternative and fun way to learn
A natural and interesting way to learn
Challenges the beliefs of trainees
Complements other training methods and activities
Expands the disciplinary breadth and depth of the subject matter
Interactive learning method
Creates awareness of different viewpoints
Can engage in detailed/general discussions
Can encourage the use of different thinking skills
Embraces outcome based learning

The issues based approach allows the instructor to introduce industry concerns in a nonpartisan and non confrontational manner, and provides trainees with the opportunity to analyze their perceptions about those concerns. The issues identified provide instructors with training flexibility because the amount of time devoted to a given issue can be accurately monitored and controlled. Both experienced and less experienced instructors can effectively present specific industry issues and allow the trainees the choice of engaging in either a detailed or general discussion of those selected concerns. Also, the issues based approach allows instructors the opportunity to gradually develop their expertise in a given area. Because

industry training can involve controversial subject matter and generate strong emotions, some instructors might initially be reluctant to use traditional instructional methods, such as lecturing. However, an issues based learning approach allows for the discussion of complicated, controversial and emotional topics to develop naturally, where different viewpoints surrounding the issues can be exchanged in a non threatening manner¹².

Contrast Classroom Teaching with Industry Training

Teaching in the classroom has similarities and differences compared to industry training. Table 7 identifies the similarities of classroom teaching and industry training, and Table 8 identifies the differences between the two¹.

Table 7: Similarities of classroom teaching and industry training

Similar presentation tactics can apply, such as preparation, presentation organization and style, and encouraging audience participation
Similar subject familiarity or technical expertise is required
Similar presentation skills are used, such as an enthusiastic speaking voice, self-confidence, and appropriate nonverbal signals

Table 8: Differences between classroom teaching and industry training

Starting times may vary, with generally less time available and therefore, less material can be presented
There is little or no advance audience preparation, resulting in less subject familiarity
Less control of the audience, including side conversations and participants walking in and out of the room, along with less audience familiarity
Unfamiliar training rooms that may not be ideal or conducive for learning, including distracting outside noises
Presentation equipment varies in terms of quality or availability, such as overhead projectors, podiums and blackboards
More preparation is required in order to develop audience questions, and techniques to generate discussion. Also, the instructor has limited opportunity to refer to notes while speaking
One-time opportunity for the instructor to demonstrate expertise, presentation skills and provide the material

Guidelines for Industry Training

Based on the author’s research and experience, providing industry training can be facilitated by following certain guidelines³. Table 9 lists guidelines for faculty engaging in industry training.

Table 9: Guidelines for industry training

Don’t expect to have ideal room conditions for training

Have a list of questions available to encourage participation
Be prepared to deal with disagreements or different viewpoints
Expect the unexpected. For example, there may be more or fewer trainees than anticipated
Be prepared to bring an overhead projector, extension cord, flip chart or other presentation aids
Humor can be an effective way to deal with certain controversial and emotional work issues
Use the experience of audience members to encourage participation and discussion
Be prepared to limit the use of overly theoretical, complicated or technical information
Tie the training to specific work issues to allow the trainees to see the relevance

Conclusion

The author's twenty years of experience in consulting and training initiatives has made him aware of the benefits such activities can have for the university, the faculty member, and students. From the author's perspective, providing training to industry has allowed him the opportunity to engage in faculty development and promote the university. Additional benefits faculty can receive from these consulting initiatives include: gain experience in discussing various work related concerns, the opportunity to further develop presentation skills, learn to integrate the industry training experience with classroom teaching, apply theory to deal with practical industry concerns, and discuss relevant work related issues with non-students who often have different perspectives.

As the future leaders of business organizations and the global community, engineering and technology students will need real world learning experiences. Therefore, it's important for the faculty to have exposure to industry related concerns in order to provide students with relevant industry examples. An effective way for faculty to gain industry experience, and develop their expertise and presentation skills is through consulting initiatives. The local industry can be a valuable source of exposure to various work related experiences and allow faculty the opportunity to develop expertise in their discipline.

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