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Abstract

Mentoring is a counseling of students and young professionals/engineers by professors and senior licensed professionals. Mentor helps the mentee or protégé achieve his or her career goals. In today's modern world many private firms, professional institutions, and public organizations have developed and instituted formal mentoring programs. A successful mentoring program can become the hallmark of an organization's vibrancy, success, viability and relevance. It helps to assimilate new talent into any organization's culture. At a professional level it is a proven way to hold onto your best people, build their skills, and create stronger interoffice relationships.

Mentoring is a vast topic, and much has been done with it, both in industry and academia, in the past two decades. This paper is an attempt to study and identify what kind of professional guidance young professionals seek these days. A response from group of professionals and engineers was compiled to study the actual needs and demands posed by mentees in this age of fierce competition. It was comprehensively critiqued to conclude the current adopted patterns.

Introduction

Mentoring is the best way to assimilate new professionals into any firm or institute's culture. It is a proven way to hold onto the best people, build their skills and create stronger interoffice relationships. It enhances self-confidence and builds self-esteem. Mentoring contributes to the fulfillment of personal and professional development and contributes to the long-term success of any organization.

The goal is to initiate a relationship between new employees, students and those that have been with the organization or institution for number of years; and who through their knowledge and skills can provide an interface between the young people and the company/institution.

Mentoring is like the lifeblood of this Society. Without this interchange between the individuals, and the means by which we bring new members into the Society

and enrich their experience, it would stagnate and not be a dynamic, ongoing organization.

Objectives

Mentoring is a very vast topic and much has been done with it in the past two decades. Based on literature from sources like Journal of Engineering Education and web-link like http://www.mentornet.com to name a few, mentoring help in the long process of career development. Mentor initiate mentees into the occupational world by introducing them to its formal and informal parts, its values, customs, resources, and players.

Experience and facts support that at its core, any mentoring program should have the following objectives as a main focus,

- 1) Ensure that the young employee or student understands the organization's mission and values.
- 2) Help the person understand policies and procedures, not just "what", "but" and "why" etc.
- 3) Provide a friend that can answer any professional, technical or personal problems, which are confidential in nature.
- 4) Provide career guidance or academic counseling to the mentee or protégé.

Mentor-mentee relationship

Mentoring is kind of a paternalistic and close relationship between two people, and has its rewards. If a student or young professional goes on to have a successful professional career, either in academics or in the real world, then the mentor shares the joy of that success.

The mentor's relationship with the mentee must be protégé-specific because different people need different kinds of mentoring. These needs could be gender driven or could be a result of socio-cultural demands. For example, there is a significant gender difference in what engineering students expect from an advisor or mentor based on a study published in publication by Vesilind et al, as shown in Table 1. The data is from a study with engineering undergraduate students. Statistically the table shows that more men than women want concrete and directive suggestions, but a significant fraction of women still expect such help. Similarly, one third of the men expect the mentor to take the time to get to know them personally. This means that the advisor cannot easily predict based on some characteristics such as gender, how best to serve the mentee's needs. Therefore all mentees should be treated as individuals.

Table 1 What students expect from an advisor

	Men	Women
take time to know me personally.	30	72
share my interests so that we have something in	31	58
common.		
know where to send me to get information.	48	51
know the facts about the courses.	64	43
make concrete and directive suggestions.	66	23

(Table has been adapted from *Mentoring Engineering Students: Turning Pebbles into Diamonds*, P. Aarne Vesilind, Journal of Engineering Education, 2001)

Real-world Statistics Shows the Growing trend

The concept of mentoring is getting more popular today than ever that even efforts are being made at the national and state level to promote its cultivation at an early age. The Florida Governor's Mentoring Initiative, in keeping with the state's pledge to America's Promise, helps students excel in school and life by recruiting Floridians to become mentors. The initiative, which began in 1999, promotes collaboration among state agencies, municipalities, businesses, nonprofit organizations, individuals and schools.

The goal is to recruit 200,000 mentors. As of January 2004, that number was 186,000 and rising. It is a 38 percent increase over year 2003. The latest study by the National Mentoring Partnership shows that 10 percent of all mentoring programs engaged throughout the country today are in Florida. State of Florida gives \$12.5 million annually for mentoring program development and training. These funds are leveraged with corporate donations of time, materials and additional funding.

Mentoring changes lives. Statistics show that a young person who meets with a mentor is:

- 46% less likely to begin using illegal drugs
- 27% less likely to begin drinking alcohol
- 52% less likely to skip school
- 33% less likely to engage in a fight

Mentoring can, and should, be a long-term commitment to our nation's children and young professionals. Results of the latest phase of research in Florida shows that mentored students have marked learning gains and are enrolling in continuing education at higher rates than non-mentored students. This obviously confirms the very fact that purposeful and directive mentoring can bear fertile

results in the long run. Same concept applies to all walks of life beginning from early education in school to first step as a professional or an engineer.

Case Study: Mentoring at a mid-size Private Firm as visualized by the working Professionals

According to a recent article in 2002, available on http://www.trainingmag.com, in a recent ranking of the top 100 U.S. organizations that excel in human capital development, seventy-seven per cent of the companies in the top 100 have formal mentoring programs. It was not surprising when considering that mentoring significantly contributes to career development, retention and leadership succession. The rankings were based on a number of qualitative and quantitative measures and the top 100 were selected out of an initial potential pool of 155,000 applications. Most of the questions focused on company training and development activities and rankings were based on a point system created by the author.

This growing trend prompts a desire for further investigation to see how mentoring is visualized by the working professionals in this ever demanding world. One limitation of surveys conducted nationally, based on data obtained from big corporations and organizations, is that sometimes it tends to neglect the importance of representation by the common people in the working environment. For this reason the focus of this study was to get a feedback from professionals working in a small yet one of the fastest growing metropolitan areas in the State, Sarasota. Since this study was yet conducted on a pilot scale, there can be some reservations by the research community about the validity of the conclusions drawn in this paper.

For this study a survey was conducted by distributing a simple questionnaire among the professionals and engineers working for a local mid-size civil-design consulting firm. The mixed group consisted of managers, professional engineers, administrative staff and draftsmen.

The response obtained was overwhelming. Out of 60 forms, 41 completed questionnaires were returned with useful information and wonderful ideas. 37 out of 41 responses stated a need for implementation of actual mentorship program, with fifty nine percent agreeing with the fact that all young professionals be assigned a mentor at the beginning of a job for a minimum of at least two years. As expected it was found that most of the time young professionals prefer to have a technical mentor and appreciate it if mentor-mentee relationship is strictly kept ethical and professional. Surprisingly it was determined that sixty six percent agreed to have such a relationship based on the principles of self-motivation and self-improvement. See table 2 for the mentoring survey results along with the copy of questionnaire as an exhibit A.

Table 2 Mentoring Survey Results

Question	Response			Preference	
	Yes	No	Other		(%)
Should we have a mentoring program?	37	3	1	90	yes
Should the mentoring program be optional?	35	6		85	yes
Did you have a prior mentoring program at another firm?	4	36	1	88	no
Should there be a minimum level of experience to be mentor?	23	16	2	56	yes
Should all new employees be assigned a mentor?	24	15	2	59	yes
Should you be assigned a mentor/mentee or should it be left up	20	20	1	49	yes/no
to the individual (assigned, not assigned, other)?					(tied)
Should there be a list of mentors to choose from?	30	10	1	73	yes
Should your mentor be your supervisor?	5	22	12	54	no
Whose responsibility is it to make contact (mentor, mentee,	12	11	18	44	both
both)?					
Should the program be confidential?	25	13	3	61	yes
Should the mentor receive a copy of the mentee's annual	15	24	2	59	no
review?					
Do you want a technical mentor?	25	9	7	61	yes
Should there be rewards for participating?	14	27		66	no
Should a mentor be expected to address personal issues?	17	20	4	49	no

Thoughts from Several Respondents:

Without a mentoring program, "standard procedures and technical methods acceptable to our firm will be inconsistent as personnel change. Quality Control will be more difficult.

"(A) successful mentoring program can add to the Company's overall performance and growth. Technical communication gap is the biggest consequence of not implementing it."

"Great benefit, informal is best."

"It (mentoring) is its own reward."

"Professional societies such as ASCE (American Society of Civil Engineers) can provide a venue to nurture these (mentorship) relationships."

[&]quot;Mentoring is an important part of our career as engineers. (Mentoring) helps us to keep improving our knowledge and skills."

Exhibit A

"Peer Mentorship Survey Form"

Please take a moment to answer these questions about mentoring.
Should we? Should we have a mentoring program? Yes No
What do you think will happen if a mentoring program is not implemented?
Should the program be optional? Yes No
Skills & Experience What skills do you have to offer as a mentor?
Did you have a prior mentoring program at another firm? Yes No If so, describe the program and your opinion of the pluses and minuses.
<u>Program Guidelines</u> Should there be a minimum level of experience to be a mentor? Yes No If so, how much?
Should all new employees be assigned a mentor? Yes No
Should you be assigned a mentor/mentee or should it be left up to the individual? Assigned Left up to individual
Should there be a list of mentors to choose from? Yes No
Should your mentor be your supervisor? Yes No
Whose responsibility is it to make contact? Mentor Mentee
Should the program be confidential? Yes No
Should the mentor receive a copy of the mentee's annual review? Yes No
Expectations/Rewards Do you want a technical mentor? Yes No What other type would you like?
What other values can a mentor provide to you (i.e. career path, goals, networking, etc.)?
Should there be rewards for participating? Yes No If yes, what kind?
Should a mentor be expected to address personal issues? Yes No What are your goals for having a mentor?
What do you think would be necessary to make the mentoring program successful and work for you?
Do you have any additional comments regarding mentoring? "Proceedings of the 2005 American Society for Engineering Education Annual Conference & Exposition Copyright © 2005 American Society for Engineering Education"

Discussion

Following are the summarized benefits of mentoring as studied by researchers over a period of last two decades and supported by our study,

A. For Employers:

- 1) Better quality staff.
- 2) Attract and develop employees in providing professional services to clients.
- 3) Improved employee performance and satisfaction.
- 4) Transfer of knowledge.
- 5) Mutual learning.
- 6) Improved technical competence.
- 7) Improved quality of work.
- 8) Better work environment.

B. For Mentors:

- 1) Listening skills.
- 2) Sharpening skills.
- 3) Leading by example.
- 4) Information exchange.
- 5) Perspective from younger generation.
- 6) Intrinsic satisfaction of helping others.
- 7) Developing lasting relationships.

C. For Protégé:

- 1) Developing lasting relationships.
- 2) Sharpening skills.
- 3) Technical knowledge and insight.
- 4) Listening skills.
- 5) Improved problem solving.
- 6) Networking.
- 7) Building confidence and self-esteem/

Conclusion

The rewards of mentoring can be immense. A successful mentoring program can become the hallmark of an organization's vibrancy, success, viability and relevance. Mentoring professionals/engineers at different stages fosters a work environment in which employees have opportunities for guidance and assistance in achieving their career goals. Students and practicing engineers should have mentoring relationships. Professional societies such as ASCE can provide a

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venue to nurture these relationships. In this way, mentoring becomes part of the culture of our profession and is available to all interested young professionals and engineers.

Acknowledgements

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