Alumni Perspectives on Lifelong Learning

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Abstract

Based on a survey completed by 280 alumni during academic year 2000-2001, the following observations can be made:

The top four indicators that a person is staying current professionally and technically were:

1. Reading trade or professional journals
2. Attending technical/training seminars or short courses
3. Attending professional conferences
4. Earning an advanced degree.

The four most frequent responses to how alumni could have been better prepared by their undergraduate experience were:

1. Changes in content of engineering courses; e.g. more industry interaction, real-world context, and current technology and software
2. More involvement in professional organizations
3. Increased use of trade and professional publications in the curriculum
4. Increased focus on professional skill; e.g. communication, ethics, conflict resolution, teamwork and time management.

By far the most significant response to barriers to staying current was "time". Breaking down the response further, it is apparent that significant elements dealt with balance of personal and professional time commitments and employer allocation of time and resources towards professional development. It seemed to be a commonly accepted expectation of alumni and alumni of their employers that professional development is to be accomplished outside of normal work hours, from personal time. Lack of motivation or willingness to learn and change was observed to also be a significant barrier.

Introduction

Based on results of the 1998-99 and 1999-2000 The Ohio State University's College of Engineering Alumni Surveys and feedback from other sources, the Core Curriculum and College Services Committee established a Task Group to study the nature of the difference between perceived importance versus preparation of College of Engineering B.S. graduates in the area of

"staying professionally and technically current" (Gustafson and Merrill, 2000). This is one of six areas where gaps between Ability/Preparation and Importance were identified. It is related to ABET EC 2000 Criterion 3. (i) a recognition of the need for, and an ability to engage in life-long learning.

Based on previous experience (Gustafson, et. al, 2001), the task group chose to develop a survey of alumni to further define what preparation or abilities alumni felt were of highest priority in this area. The task group reviewed literature available on lifelong learning and consulted with faculty from the College of Education on the topic. Using this information, a two-part survey was developed. For the first part of the survey, the task group identified five categories with eighteen potential indicators (as shown in Table 3) that a person was staying current professionally and technically. On the survey, only the eighteen indicators were listed and in random order. Alumni were asked to select six of the listed indicators that "would best indicate a person is staying current". The option for adding additional topics was given. The second survey element presented two open-ended questions and space for written response. The first question was directed at how their undergraduate experience could have been improved. It asked "Based on the items you choose, in what ways could your undergraduate experience have been different to better prepare you to stay current technically and professionally?" The second question addressed barriers. It asked "What do you think are the most significant barriers to a person staying current technically and professionally?"

This survey was included as an extra one-page with the 2000-2001 alumni surveys. The target populations for the survey were alumni two years, six years and fifteen years after graduation. Therefore, surveys were mailed to engineering alumni of the 1998 (2^{nd} year), 1994 (6^{th} year), and 1985 (15th year) based on addresses maintained by the Ohio State University Alumni Association. For the special survey segment, 280 useable surveys were returned (Table 1).

Table 1. Survey Distribution and Returns

Alumni Year	No. Mailed	Survey Returned	Percent
2^{nd} (1998)	522	86	16.5
6^{th} (1994)	508	118	23.2
15^{th} (1985)	690	76	11.0
Total	1720	280	16.3

Indicators

Table 2 shows a summary of the choices among the 18 indictors in order of frequency selected summed across all three alumni groups and all programs. A total of 1602 items were selected by the 280 respondents. Percent is calculated as percentage of respondents selecting that item.

Table 2. Indicators Summed Across All Years and All Programs

	Indicator	Total	Percent
A	Reading trade or professional journals	194	69.3%
B	Attending technical/training seminars or short courses	186	66.4%
C	Attending a professional conference	177	63.2%
D	Earning an advanced degree	119	42.5%
E	Reading technical books	108	38.6%
F	Attending corporate training sessions	103	36.8%
G	Increasing job responsibility	94	33.6%
H	Research or working on design projects with a college or university	93	33.2%
I	Taking college courses for credit	85	30.4%
J	Writing for professional journals	74	26.4%
K	Presenting a paper at a professional meeting	74	26.4%
L	Membership in a professional organization	71	25.4%
M	Web-based professional training	62	22.1%
N	Professional registration	47	16.8%
O	Conducting corporate training sessions	43	15.4%
P	Moving into supervisory positions	31	11.1%
Q	Holding an office in a professional organization	22	7.9%
R	Advising/mentoring middle school, high school, or college students	19	6.8%
	Total	1602	

Response rate in percent of the respondents is shown graphically in Figure 1 for each alumni year and for the combination across alumni years. The top four and bottom five indicators remained in the same sequence for all alumni years. For other indicators, it appears the 15th year alumni rank writing and presenting professional work somewhat higher than 6th and 2nd year alumni.

Procedures based on statistical multi-parameter regression analysis (Soboyejo and Gustafson, 2002) were also developed to describe the data collected from this study. This work was done to provide an additional tool for interpretation of the type of data presented with statistical confidence.

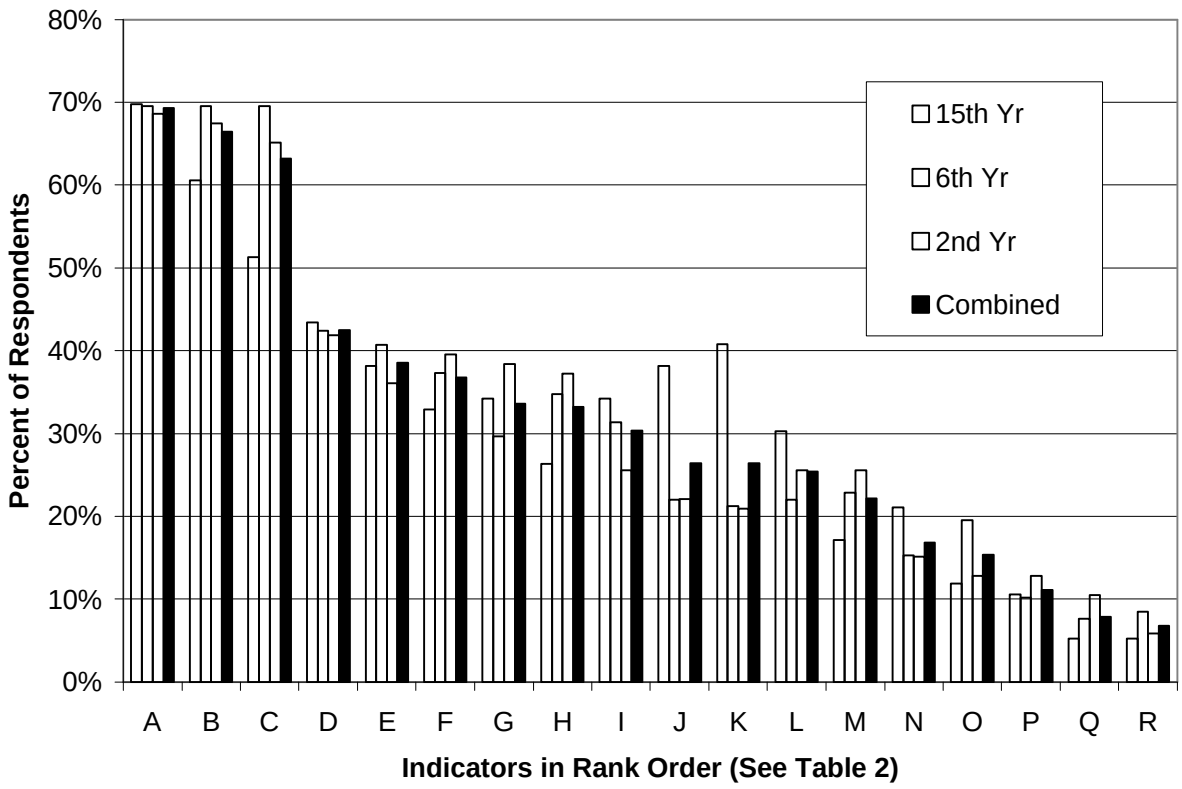

Figure 1. Response Rate vs Indicator – All Years and Combined

In the open response to Other Indicators the following suggestions were received:

Vender certification	Re-certification of P.E.
Private research and studies	Exposure & involvement in complex projects
Professional experience	Staying in touch with past professors
Attending trade shows	

As part of the development of the survey, the indicator items had been placed in five broad categories. Table 3 summarizes the response rates across all alumni years and programs within each of the five pre-defined categories. It is interesting to note that the top three ranked indicators fell in three different categories.

Table 3. Indicators By Category Summed Across All Years and All Programs

Statement	Total	Percent
I. Engaged in informal independent professional study		
Reading trade or professional journals	194	69.3%
Reading technical books	108	38.6%
Web-based professional training	62	22.1%
Professional registration	47	16.8%
II. Participating in formal organized training		
Attending technical/training seminars or short courses	186	66.4%
Earning an advanced degree	119	42.5%
Attending corporate training sessions	103	36.8%
Taking college courses for credit	85	30.4%
III. Involved in a professional organization		
Attending a professional conference	177	63.2%
Presenting a paper at a professional meeting	74	26.4%
Membership in a professional organization	71	25.4%
Holding an office in a professional organization	22	7.9%
IV. Progressing organizationally		
Increasing job responsibility	94	33.6%
Moving into supervisory positions	31	11.1%
V. Conducting training and professional publication		
Research or working on design projects with a college or university	93	33.2%
Writing for professional journals	74	26.4%
Conducting corporate training sessions	43	15.4%
Advising/mentoring middle school, high school, or college students	19	6.8%

Suggestions for Better Preparation

Table 4 summarizes the content of the responses to the first open-ended question "Based on the items you chose, in what ways could your undergraduate experience have been different to better prepare you to stay current technically and professionally?". A total of 182 responses received from 147 respondents were placed into twelve categories of responses. Categories of responses were developed by the first author based on a preliminary review of the responses received. Variation by alumni year did not appear to be significant, therefore this table summarizes across all programs and all three alumni years.

Table 4. Content of Responses to "Better Prepare" Question.

	Comment Category	Times Mentioned
P1	Change *Curriculum Content* of Engineering Courses: include more industry interaction, real-world, current technology	34
P2	More Student Involvement in *Professional Organizations*	32
P3	Increase *Trade and Professional Publication Use*	20
P4	Increase Focus on *Professional Skills*: communication, ethics, conflict resolution, teamwork and time management	17
P5	*No Change* Needed, not part of U. G. Curriculum responsibility, *Not possible*	16
P6	*Teach How to Pursue* Continuing Ed.; technical and professional resources	13
P7	More Focus on *Research and Advance Degrees*	12
P8	Encourage Attendance at *Professional Conferences, Trade Shows and Short Courses*	12
P9	More Focus on *Business, Management and Finance*	9
P10	Increase *COOP/Internship* Participation	8
P11	Promote *Professional Registration*	6
P12	Improve *Career Advising*	3

Within Category P1 - *Curriculum Content* comments revolved around two principal areas. The first was bringing in more real world examples, often by the means of industry connections. The second dealt with keeping the curriculum current with industry practice in particular for software utilization. Category P3 - *Trade and Professional and Publications Use* could be viewed as a way of contributing to the suggestion Category P1 for currency and relevance to industry.

For Category P2 - *Professional Organizations* comments consistently highlighted the value of professional and technical organizations as a means of staying current. This would also relate to and facilitate suggestion of the Category P8 - Attendance at *Professional Conferences, Trade Shows and Short Courses.*

The Category P5 - *No Change/Not Possible* was an almost equal mix of persons who made comments indicating a) they were satisfied with the approaches taken, b) those who did not feel that it was important to the role of undergraduate education and c) those that did not think it possible to change a person's attitude. Typical comments were:

"I felt prepared in this area."

"Undergraduate experience should provide a broad base to build on, not prepare you to stay technically and professionally current."

"Your best students have the desire to learn. They brought that to OSU. There is nothing that could have been done to prepare students. It comes from within."

Significant Barriers

Table 5 summarizes the content of responses to the second question "What do you think are the most significant barriers to a person staying current technically and professionally?". A total of 247 written responses received from 191 of the respondents were placed into eight categories of responses. Categories of responses were developed by the first author based on a preliminary review of the responses received. Variation by alumni year did not appear to be significant, therefore this table summarizes across all programs and all three alumni years.

Table 5. Content of Responses to "Significant Barriers" Question

	Comment Category	Times Mentioned
B1	Time	120
	(Time – Unspecified)	(64)
	(Time – Personal/Professional Balance)	(30)
	(Time - Employer Allocation/Expectation)	(26)
B2	Lack of Personal Motivation or Willingness to Learn and Change	39
B3	Lack of Employer Support & Recognition (Non- fiscal)	25
B4	Expense/Money Allocation	19
	(Expense - Unspecified)	(10)
	(Expense – Corporate)	(6)
	(Expense – Personal)	(3)
B5	Knowledge of What is Available	12
B6	Access to Resources	10
B7	Information Overload/Change Rate	8
B8	None	1
	Not Categorizable	7

Within Category B1 - Time, the responses were subdivided into three barriers: 1) balancing work and personal/family time, 2) lack of employer recognition within work assignment and 3) work time allocation. The later could be combined with the Category B3 - Employer Support and Recognition. Responses within Category B1 and other responses clearly indicated the common perception that respondents felt that "staying current professionally and technically" was not part of their normal employment duties and must be done on their own "personal" time. Access to Resources, Category B6, was most frequently given in the context of geographic constraints of being in a "remote" location.

Conclusions

The results of this survey are very useful in helping the College understand the difference between perceived importance versus preparation in the area of lifelong learning found in alumni surveys. Generally the important indicators, suggestions for improved preparation and cited barriers were consistent across the three alumni groups. This survey resulted in 1) concrete

suggestions that can be used by our programs for curriculum improvement, 2) indicators that we can use with confidence as benchmarks in measuring progress, and 3) a better understanding of the constraints experienced by practicing professionals in their efforts to stay technically and professional current.

References

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