

## EDUCATION NEEDS IN THE FOREST PRODUCTS INDUSTRY

### Abstract

The forest products industry has been greatly impacted by the “great recession,” with many firms reducing output or closing operations to remain competitive. Educational training has also been a casualty of cost reduction efforts by firms. Yet, we know that a well trained workforce is better prepared to compete, is more innovative, and is a long term competitive advantage for companies.

This research looked at current educational needs in Minnesota and Virginia by conducting an electronic survey and personal interviews with management personnel in the forest products industry. Key findings include that factors that have impacted firms since the start of the recession (2008) were similar between states and included the housing market, transportation costs, energy costs and changing customer demand. Training needs differed by state, size and type of firm. In Virginia, participants felt that being customer focused, flexible, diversified and having good financial management were the key issues. In Minnesota, companies believed having high quality products, good customer relationships, being “lean,” controlling costs and being flexible were their factors for success.

### Materials and Methods

During May-July of 2012, a web survey was conducted concurrently in Minnesota and Virginia to assess the educational needs of the Forest Products Industry. In total, 73 companies participated in Minnesota and 101 in Virginia. Participants belonged to many subsectors, ranging from lumber manufacturers and distributors, to secondary manufacturers, such as producers of kitchen cabinets and millwork. Following the survey, 19 companies (10 in Minnesota, 9 in Virginia) were personally interviewed to verify and expand on the results from the survey. Responses were grouped and coded. Company demographics are summarized in Table 1.

Category	Minnesota		Virginia	
	Companies	%	Companies	%
--- Company Type ---				
Primary manufacturer	18	24.7%	31	30.7%
Secondary manufacturer	50	68.5%	49	48.5%
Distributor	5	6.8%	12	11.9%
--- Company Size ---				
Small companies (25 or less employees)	40	54.8%	47	46.5%
Medium and large companies (>25 employees)	33	45.2%	51	50.5%

Table 1\_ Participants' type of business and size.

### Results

We were interested in learning what external influences most affect forest products industries. Respondents were asked to rate a list of external business factors according to their effect on their businesses. Results are listed in (Table 2). The highest-rated items were “housing market,” “transportation costs,” “energy costs,” “changing customer demand,” and “business closures.”

Business factor	Minnesota		Virginia	
	Average	Rank	Average	Rank
Housing market	3.90	1	3.84	3
Transportation costs	3.79	2	4.28	1
Energy costs	3.63	3	3.95	2
Changing customer demand	3.58	4	3.56	5
Business closures	3.49	5	3.21	8
Raw material costs	3.37	6	3.73	4
Labor costs	3.21	7	3.47	6
Government regulations	3.14	8	3.36	7
Green business practices	2.79	9	2.77	11
Interest rates	2.68	10	2.53	12
Lack of skilled labor	2.62	11	2.93	9
Globalization	2.52	12	2.77	10
E-commerce	2.45	13	2.41	14
International competition	2.24	14	2.51	13

Table 2\_ Participants' average rating and rank for impact of business factors since 2008 (1=Very little or no impact, 5=Greatly impacted our business).

Participants were asked to rate the importance of 31 training needs subjects on a 5-point scale, going from “not a training need for the company currently” (1) to a “very important need for our company” (5). Results are listed in Table 3. Those instances where significant differences existed between the two states are marked with an asterisk.

Training need	Minnesota		Virginia	
	Average	Rank	Average	Rank
Quality and process control	3.36	1	3.13	1
Process improvement	3.32	2	2.92	3
Plant maintenance	3.18	3	2.83	5
Motivating personnel*	3.18	3	2.63	17
Total Quality Management*	3.15	5	2.70	13
Production management	3.12	6	2.77	9
Lean manufacturing*	3.12	7	2.40	22
Product costing	3.10	8	2.78	8
General problem solving	3.09	9	2.71	11
Sales abilities	3.04	10	3.05	2
Marketing	3.04	10	2.89	4
Basic problem solving skills*	3.02	12	2.67	15
Leadership	2.98	13	2.70	12
Strategic management	2.86	14	2.63	16
Inventory control	2.85	15	2.73	10
Business planning	2.84	16	2.81	7
Product development*	2.78	17	2.32	24
Product promotion	2.75	18	2.69	14
Product distribution	2.75	18	2.43	21
Plant financial issues	2.73	20	2.51	20
Finding market information	2.71	21	2.82	6
Public relations	2.69	22	2.57	18
Branding	2.64	23	2.31	25
Energy management	2.52	24	2.53	19
E-commerce	2.36	25	2.26	27
Cleaner production technologies	2.35	26	2.14	28
"Green" business practices	2.30	27	2.26	26
Six Sigma*	2.29	28	1.83	31
Environmental certification	2.27	29	2.12	29
Wood drying issues	2.15	30	2.36	23
International marketing	1.84	31	2.06	30

Table 3\_ Importance rating of training needs for respondent companies (1=Not a training need, 5=Very important training need).

Following up on training needs, companies were inquired about the functional area that presented the most important training need. They were provided with a list of 5 functional areas. Results are summarized in Figure 1.

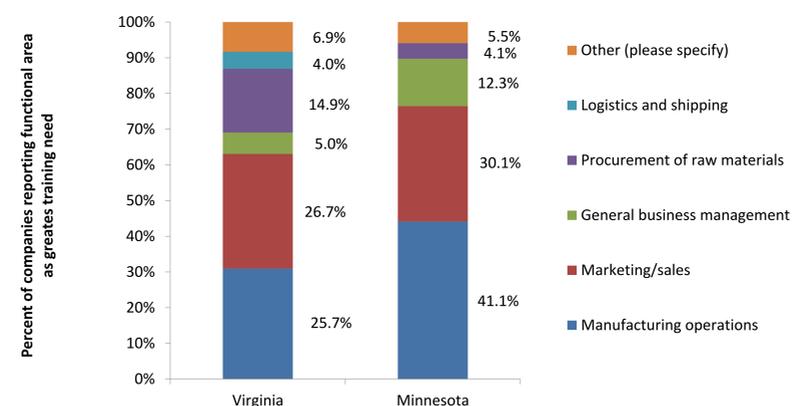


Figure 1\_ Functional area with greatest training need.

Participants we asked about their current providers of training. “Private industry,” “trade associations,” and “consultants” were the most common providers of training (Figure 2). Universities was the least common response

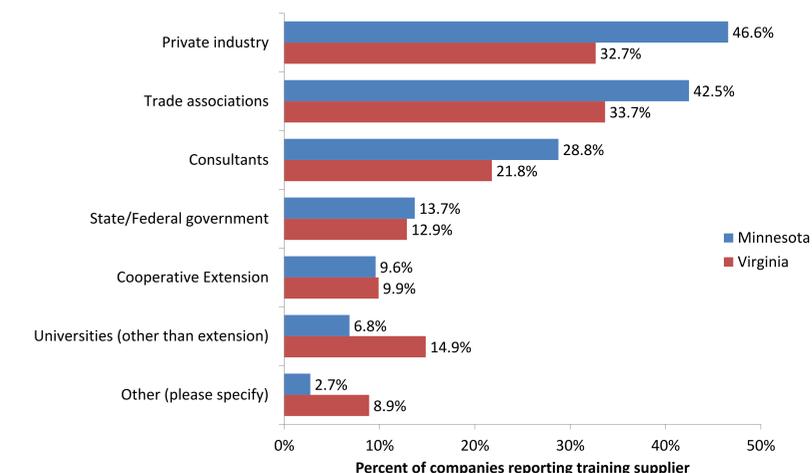


Figure 2\_ Organizations providing training.

In order to gather more in-depth information and to verify results from the survey, interviews were conducted with executives at forest products firms. Responses were grouped and coded. The most common answers are summarized in Table 4.

Topic	Minnesota	Virginia
Top business issues affecting companies	Market conditions Finding qualified labor Government regulations	Market conditions and economy Government regulations costs Raw material price and availability
Primary performance measures	Safety Profit goals Quality	Production goals Profit goals Quality
Training area for management employees	Project management Materials management General supervisory skills	General management skills Manufacturing technology Operations management
Training area for hourly employees	Machine operations Technology expertise Cross-training	Lean manufacturing Supervisory skills
Subject area with the most benefit for company	Project management Marketing Basic management skills	Project management skills Human relations Marketing
Areas to be covered in training manual	Wood as a raw material Operations management Lean manufacturing Human resource management Financial management Marketing Organizational structure Distribution	
Best delivery method for training	One-to-one on-sight personal interaction Short courses and webinars	
Current providers of training	Trade associations Insurance companies Vendors	

Table 4\_ Summary of interview responses. Answers were categorized.

### Conclusions

Major training needs reported by participants were quality and process control, process improvement, maintenance, sales, marketing, and process improvement; although there were differences in response between regions and with company size. Somewhat surprisingly, environmentally-friendly business practices, such as green building or environmental certification, were rated low in the scale. When asked the single most important area for training, response was consistent, manufacturing operations and marketing and sales were the preferred subject areas for participants. As for training delivery method, companies prefer personal visits and short courses. On-line courses were rated high only in Virginia.