

Training Trends: Fill the Gaps

Posted: May 19, 2003

Maybe the company is large and has had college recruits lined up outside the door since Thanksgiving. Or maybe it is a small business that is just beginning the recruiting process. Manufacturing companies of all sizes will have to tackle the same problem this summer when college graduates come aboard -- a lack of hands-on skills.

The Society of Manufacturing Engineers (SME) released a study during 1999, documenting what it calls skill incompetence in new hires. The SME survey asked manufacturing executives and training directors to identify the professional and technical gaps of recently hired recruits, and rank the shortcomings according to how critical they are to the company.

Many respondents said that college graduates possess good book knowledge, but they lack hands-on, practical knowledge. One respondent gave the following insight: "It's hard to expect college graduates to have all of the abilities and capabilities of an experienced engineer. What I really expect is that the graduate be well rounded in fundamentals that can be applied to any field. When we get them, we teach them how we expect them to do their job."

Gaps in business skills:

- Business knowledge and skills: Understand customer focus, cash flow, ethics, return on investment and payback calculations, cost estimation and justification, risk analysis and management, and legal and regulatory effects.
- Project management: Understand goal setting, planning, design of projects, and deployment of personnel and resources. Manage, monitor and prioritize tasks and performance to a required schedule.
- Written communication: Possess the ability to write specifications, instructions, proposals, memos and management reports for a variety of audiences.
- Oral communication and listening: Possess skills in speaking, presenting, listening, reading body language and empathy for a variety of audiences.
- International perspective: Understand and value cultural diversity, awareness of international variations in manufacturing practice and

make systems work across cultures.

Gaps in technical skills:

- Supply chain management: Know and apply principles involved in qualifying suppliers, communicating requirements, purchasing, managing supplier performance and relationships, logistics, make vs. buy decisions, and working in an extended or virtual enterprise.
- Specific manufacturing processes: Metal cutting, molding, forming, coating, packaging and assembly.
- Manufacturing process control: Know and apply principles regarding control of process variability, measurement systems and tolerances, process reliability and maintainability, process interactions and continuous improvement.
- Manufacturing systems: Understand the structure and operation of a manufacturing enterprise.
- Quality: Know and apply fundamental principles and processes of quality management, including test methods, statistical process control, control charting, cost of quality, sampling, experimental design, standards and process verification.

For the complete report, "Manufacturing Education Plan: 1999 Critical Competency Gaps," visit the SME Web site at <http://www.sme.org>. For more information on the skills shortage, visit the Department of Labor's Web site at http://www.dol.gov/dol/_sec/public/skills_summit/main.htm.