The National Institute of Standards and Technology’s Hollings Manufacturing Extension Partnership works with U.S. manufacturers to help them create and retain jobs, increase profits, and save time and money. Members of the Manufacturing Extension Partnership recognized the need to expand capacity and capabilities of their network to address the mounting challenges facing manufacturers. To this end, the organization adopted a new strategic vision in which Manufacturing Extension Partnership field consultants develop long-term relationships with client manufacturers while providing performance solutions focused on five areas: continuous improvement, technology acceleration, supply chain, sustainability, and the workforce.

A project was funded to educate Manufacturing Extension Partnership field consultants to embrace a holistic and integrated approach in their work, and ultimately help implement the new vision. One step in facilitating this change was to identify the gap between existing and desired competencies for Manufacturing Extension Partnership field consultants. To meet this need, a research team was guided by the following questions:

1. What does the literature say are important skills and knowledge for the types of work done by Manufacturing Extension Partnership field consultants?
2. What are the skills and knowledge currently used by Manufacturing Extension Partnership field consultants?
3. What are the skills and knowledge that Manufacturing Extension Partnership field consultants and their center directors believe they need to possess?

An extensive review of educational and management literature was completed. Despite the critical nature of measuring performance in workforce development, there exists a dearth of empirical research on formulated competencies for performance improvement (Guerra, 2003). Inconsistencies emerge between perceived need and current practice, suggesting that barriers are preventing

In addition to the review of literature, informal interviews were conducted with three Manufacturing Extension Partnership center directors in an effort to determine the perceived skills and knowledge needed by center field consultants to implement the Next Generation Strategy. The literature review and director interviews resulted in 119 skill and knowledge items. Upon review, 16 items were found to be duplicated and were therefore removed. The final 103 skill and knowledge items were grouped under nine broad themes: knowledge of the client; knowledge of client industry segments; knowledge and skills in workforce performance consulting; knowledge and skills in performance-based training; knowledge and skills in assessment, data collection, and analysis; knowledge and skills in project management and planning; knowledge and skills in strategic partnering; knowledge and skills in communication; and knowledge and skills in personal mastery.

Planned next steps in this research include a Delphi study with Manufacturing Extension Partnership center directors to further refine the list. Once refined, the list of competencies will become a professional development instrument. The instrument will be sent to all Manufacturing Extension Partnership field consultants in the United States, who will be asked to rate the importance of a skill or knowledge item and their own competency in that item. The results of this competency study will guide the Manufacturing Extension Partnership in professional development activities and will act as a strategic tool to support organizational change.

References


About the Authors

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Exploring Competencies for Manufacturing Education Partnership (MEP) Centers
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Project Background

This project is part of a 3-year grant funded by the U.S. Department of Commerce, specifically, the National Institute of Standards and Technology (NIST) Hollings Manufacturing Extension Partnership (MEP) works with small and mid-sized U.S. manufacturers to help them create and retain jobs, increase profits, and save time and money. The nationwide network provides a variety of services, from innovation strategies to process improvements to green manufacturing. MEP also works with partners at the state and federal levels on programs that put manufacturers in position to develop new customers, expand into new markets, and create new products. MEP staff has over 1,400 technical experts located in every state—serving as business advisors focused on solving manufacturers’ challenges and identifying opportunities for growth. MEP is an essential role in sustaining and growing America’s manufacturing base. The program assists manufacturers in achieving new sales, leading to higher tax receipts and new sustainable jobs in the high paying advanced manufacturing sector.

Problem Statement

In 2008, MEP leadership laid out a new vision called the Next Generation Strategy aimed to direct activities at U.S. manufacturers to continue to improve profitability by a challenging landscape that includes consistent pressures to cut costs, improve quality, meet environmental and international standards, and get to market faster with new and improved products. The Next Generation strategy presents a framework for Centers to help manufacturers address the key critical areas in their work. The new vision requires that MEP Consultants work with partners through the network to provide both the tools, services and connections focused on the key areas of the framework: continuous improvement, technology acceleration, supply chain, sustainability, and workforce. MEP Consultant Competencies

One foundation to facilitation of this change is to understand the current and desired competencies of MEP center staff. The gap between how the OAP of competencies is then considered the area of professional development focus.

The Next Generation Strategy (NGS)

Over its 20-year history, MEP helped thousands of companies reinvest in themselves through process improvement and business growth initiatives leading to more sales, new markets, and the adoption of technology to deliver new products and services.

But, manufacturers in the United States are facing significant challenges. There is a constant pressure to cut costs, improve quality, meet environmental and international standards, and get to market faster with new and improved products, all in a more competitive, global playing field.

NIST/MEP realizes the need to expand the capacity and capabilities of the MEP nationwide network to address the challenges facing manufacturers. As a result, it has adopted a new strategic vision for its Centers.

The new vision requires that MEP Consultants work with partners through the network to provide both the tools, services and connections focused on the key areas of the framework: continuous improvement, technology acceleration, supply chain, sustainability, and workforce.

Desired Competencies

Met with the literature say are important skills and knowledge for the types of work done by MEP field consultants? The research team is guided by the following questions:

1. What does the literature say are important skills and knowledge for the types of work done by MEP field consultants?
2. What are the skills and knowledge currently held by MEP field consultants?
3. What are the skills and knowledge that MEP field consultants believe they need to possess?
4. What are the skills and knowledge that NIST/MEP leadership (both national and local) believe that MEP field consultants need to possess?

The IMPORTANCE of this knowledge to YOUR WORK

1 = Not required for your work at this time.
2 = Required for your work, but not currently possessed.
3 = Adequate knowledge level. You have knowledge about this item and can apply it in routine situations without assistance; you need assistance in non-routine situations.
4 = Proficient Knowledge Level. You have knowledge about this item and can apply it in routine and nonroutine situations without assistance.

Your CURRENT KNOWLEDGE LEVEL in this item

1 = No knowledge level. You have no knowledge of this item.
2 = Basic knowledge level. You have some knowledge about this item, and you can apply it in routine situations without assistance.
3 = Adequate Knowledge level. You have knowledge about this item and can apply it in routine situations without assistance; you need assistance in non-routine situations.
4 = Proficient Knowledge level. You have knowledge about this item and can apply it in routine and nonroutine situations without assistance.

Literature Review

Despite the critical nature of measuring performance in our field, industry research of empirical research on formulated competencies for performance improvement (Chen, 1999; Gmura 2003) identified no empirical approaches. There are obstacles preventing the application of a broad range of competency models (Gmura, 2003).

Development of performance models based on self-assessed competency models will bridge the gap, provide unique accomplishments, and performance accountability (Shamba & Robinson, 2000).

MEP Field Consultant Competency Survey

Meta Analysis of Performance Improvement Competencies

Skills/Knowledge for Performance Consulting Consultant Instrument

The National Institute of Standards and Technology’s Hollings Manufacturing Extension Partnership (MEP) works with small and mid-sized U.S. manufacturers to help them create and retain jobs, increase profits, and save time and money. The nationwide network provides a variety of services, from innovation strategies to process improvements to green manufacturing. MEP also works with partners at the state and federal levels on programs that put manufacturers in position to develop new customers, expand into new markets, and create new products. MEP staff has over 1,400 technical experts located in every state—serving as business advisors focused on solving manufacturers’ challenges and identifying opportunities for growth. MEP is an essential role in sustaining and growing America’s manufacturing base. The program assists manufacturers in achieving new sales, leading to higher tax receipts and new sustainable jobs in the high paying advanced manufacturing sector.

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