An Inclusive Design Method for Addressing Human Variability and Work Performance Issues

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Received 06 April 2013; received in revised form 28 April 2013; accepted 30 May 2013

Abstract

Humans play vital roles in manufacturing systems, but work performance is strongly influenced by factors such as experience, age, level of skill, physical and cognitive abilities and attitude towards work. Current manufacturing system design processes need to consider these human variability issues and their impact on work performance. An 'inclusive design' approach is proposed to consider the increasing diversity of the global workforce in terms of age, gender, cultural background, skill and experience. The decline in physical capabilities of older workers creates a mismatch between job demands and working capabilities which can be seen in manufacturing assembly that typically requires high physical demands for repetitive and accurate motions. The inclusive design approach leads to a reduction of this mismatch that results in a more productive, safe and healthy working environment giving benefits to the organization and individuals in terms of workforce satisfaction, reduced turnover, higher productivity and improved product quality.

Keywords: inclusive design, human variability, work performance, older workers

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