

The Pennsylvania State University

The Graduate School

College of Education

**A STUDY EXAMINING THE VALUE OF PRE-EMPLOYMENT TRAINING
CONDUCTED BY THE MARCELLUS SHALE EDUCATION AND TRAINING
CENTER IN RESPONSE TO THE NEEDS OF THE GAS AND OIL INDUSTRY**

A Dissertation in

Workforce Education and Development

by

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ABSTRACT

The greatest challenge we face in the next ten years is the challenge of making sure we have a qualified workforce able to meet the demands of living in a global economy. To do this we will need to expand the capacity of our workforce development and educational system to meet the training needs of business and industry. In order to assess the real world value of training in the private sector, one must first determine whether or not training is an expense or an investment. Of course this is not as easy as it sounds, for in general, the “value” of training is an expense in bad economic times and an investment in good economic times. In broad categorical terms, we want to know about the specific outcomes of workforce education and training programs. We want to be able to quantify the economic value of those programs for both employers and employees. This study examined the impact of pre-employment training delivered through the Marcellus Shale Education and Training Center to determine if the training program had an impact on new hires with the gas industry relative to reducing the number of safety incidents among new hires, reducing overall attrition rates among new hires, and help new hires acquire the kind of work ethic necessary for success in the gas industry.

The design of this study used a blend of quantitative and qualitative methods that is essentially descriptive in nature and focused on those individuals newly hired by companies in the oil and gas industry in the Marcellus Shale play in Central and Northern Pennsylvania. While not as rigorous as a true experiment, the researcher believed that this quasi-experimental design model would provide insight into the impact of the pre-employment training program on new hires in the gas industry. Given the challenges of

determining the impact of training under the best of circumstances, and with those challenges compounded by the constantly changing landscape of training within the gas industry, particularly in the Marcellus Shale Region of Pennsylvania, it seemed to this researcher that applying this kind of mixed-method approach offered the best chance of assessing the practical value of the pre-employment training program that is the primary subject of this study.

Based solely on the quantitative numbers, the experimental group for this study did demonstrate fewer safety incidents, a lower attrition rate, fewer tardies and fewer absences (i.e. a better work ethic) than members of the control group. However, from a statistical perspective, there was no statistically significant difference between the performance of the experimental group relative to the three dependent variables (safety incident score, attrition rate score, and work ethic score) in the work place (i.e. the gas industry) compared to the performance of those from the control group relative to those three variables in the work place. The degree of legacy knowledge possessed by those in the control group was a non-factor. Still, the numbers do not tell the whole story. And some of the numbers tell (or at least suggest) a quite different story that will require further research.

But this study was seeking to go beyond the quantitative numbers and address some of the more qualitative factors that influence why one individual might be successful in the gas industry and another not so successful. It was in this context, for example, that the notion of work ethic was examined. In addition, since work ethic, or the lack thereof, has become in Pennsylvania a contributing factor to whether or not companies working the Marcellus Shale gas play are able to find and retain the right kind of people, particularly roughnecks, roustabouts and general laborers, it seemed that trying to come to a better

understanding of work ethic in both quantitative and qualitative terms would lead to the development of better training programs geared towards preparing entry level workers for gas industry companies, and impact the retention rates for those companies (and so reduce their training costs in relation to high turnover).

In the final analysis, the value of this study is that it delineates a variety of areas that need further exploration. What is the relationship between the number of safety incidents and the amount of formal safety training versus informal on-the-job safety training? What is the value of work ethic as it is defined by the gas industry, and what is the degree to which a positive work ethic reduces overall turnover rates and increases productivity? And what are the reasons for the high degree of workforce mobility in the gas industry; does this mobility increase competition between companies; and what impact does this mobility then have on the training needs of companies throughout the industry. This study provides a context for understanding the scope of these questions.

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