



Chair for Women in Science and Engineering
BC and Yukon Region



Westcoast Women in Engineering,
Science & Technology

Leadership Development Workshops: Evaluating Changes in Self-Efficacy

Our mission is to advance engineering and science as welcoming careers that serve our world through holistic understanding and creative, appropriate and sustainable solutions.

WWEST works locally and, in conjunction with the other CWSE Chairs, nationally on policy, research, advocacy, facilitation, and pilot programs that support women in science and engineering.

The Chair is held by Dr. Elizabeth Croft, P.Eng., FEC, FASME, Professor of Mechanical Engineering at the University of British Columbia.



Thank you to our major partners:

Workshop Partners: WinSETT Centre, Hollett & Sons, WorkSafeBC, Stantec, WorleyParsons, Teck

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In October 2011, Westcoast Women in Engineering, Science, and Technology brought the WinSETT Centre to BC to offer the first level of their “Becoming Leaders” workshop series – a professional development workshop targeted specifically at women in science, engineering, and technology fields. Facilitators from WinSETT and WWEST teamed up to deliver the thought-provoking, inspiring, and participatory workshops at four host companies in four different communities: WorkSafeBC in Richmond, Stantec in Kelowna, WorleyParsons in Victoria, and Teck in downtown Vancouver. Each workshop was attended by a mixture of women from the host company, other women in industry, and senior students.

Each workshop included an overview of the need for women’s leadership; gender factors that influence success; leadership competencies; a group brainstorming activity around the strengths and challenges women bring to leadership and strategies to exploit this knowledge; leadership planning; guest speakers; sharing tips and strategies; and a video presentation on vision, values and courage.

In addition to direct feedback about the workshop, coordinated by the WinSETT Centre, WWEST was interested in measuring changes in the career self-efficacy of participants. Self-efficacy is defined as one’s belief in one’s own ability to succeed in a specific competency area. It differs from the concept of self-confidence in that it is very specific to one set of competencies. For example, a person may be very self-confident, but not have self-efficacy in her ability to play soccer.

WWEST chose to use an adapted version of Rigotti, Schyns, and Mohr’s (2008) Occupational Self-Efficacy Scale. The scale uses six questions to predict self-efficacy, and was administered as a pre- and post-test. Each question was measured on a 5-point Likert-type scale. Because the resulting data is discrete, a Binomial Sign test was used to determine whether the change in scores between the pre-test and post-test were statistically significant under Bonferroni’s correction for multiple testing. The findings suggest a positive change for each measure, with five of the six changes being statistically significant.

A follow-up survey to determine whether the changes persist over time is underway.

Table: Changes and Statistical Significance in Paired Pre-Test and Post-Test Scores of Self-Efficacy Surveys

Question	Decreased	No Change	Increased	95% Overall Significance (corrected critical pval = 0.0083)
Going forward, I feel I will remain calm when facing difficulties in my job because I can rely on my abilities.	0%	64%	36%	Significant; pval = 7.6e-6
Going forward, I feel that when I am confronted with a problem in my job, I will usually find several solutions.	4%	66%	30%	Significant; pval = 0.002
Going forward, I feel whatever comes my way in my job, I will usually handle it.	0%	58%	42%	Significant; pval = 9.5e-7
Going forward, I feel well prepared for my occupational future.	20%	30%	50%	Not Significant; pval = 0.017
Going forward, I feel I will meet the goals that I set for myself in my job.	2%	55%	43%	Significant; pval = 1.1e-5
Going forward, I feel prepared for most of the demands in my job.	4%	56%	40%	Significant; pval = 1.2e-4



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