Canadian Manufacturing Network

Workplace Literacy and Essential Skills Research

Allsco

Opening Doors to Workplace Learning

ALLSCO
Trust *your* family to ours.

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Executive Summary

Allsco: Opening Doors to Workplace Learning

Allsco is a manufacturer of doors and windows based in Atlantic Canada. The company has 93 employees – 55 in production in Moncton, and the remaining in a sales office in Moncton and in sales and warehouse facilities in Dartmouth. The company began as a family-run business in 1976 and is now owned by the Atis Group, which provides doors and windows to dealers across the Maritimes.

This case study evaluates a training program, Opening Doors to Workplace Learning, developed by Allsco in 2013 to improve overall team performance, enhance communication skills and enhance production workers' abilities to collaboratively solve problems and make decisions. The training, which included supervisors and window assemblers (production operators), consisted of two training sessions per week for 17 weeks spanning 2013 and 2014.

The training had three main objectives. The first was to increase employees' reading skills and help them more easily understand and interpret instructions. The second objective was to enhance oral communication skills—particularly communicating respectfully when dealing with complex issues or resolving conflict. The third objective was aimed at improving overall production efficiency by enhancing team-based problem-solving skills and decision-making capability.

As a result of the training, supervisors and managers reported two notable areas of improvement in production operators: 'improved problem-solving skills' and 'enhanced numeracy and document reading skills'. Senior managers identified these improvements as critical factors responsible for improving product quality and productivity. Managers observed that productivity improved as operators became better problem solvers. Also, as workers' skills at reading and interpreting production documents improved, product quality improved and costs associated with reworking or rejecting flawed units were substantially reduced.

The key business metric, routinely tracked by Allsco, is the length of time required to assemble window and door units—Man Hours per Unit (MHU). As a result of more efficient assembly techniques and fewer production errors, the assembly time was reduced by 3% per unit. This improvement translated into a cost savings of $31,206 for Allsco in 2014.

This bottom line improvement was further analyzed to account for other factors that could have contributed to the improvement (isolation). As well, a two-year impact timeframe was assumed to allow for the fact that essential skills training typically has a longer lag time than most workplace training before business improvement is observed.

The two-year return on investment for the Opening Doors training was 68%. This means for every dollar spent on training, $1.68 is returned to the organization within the first two years. These results unambiguously demonstrate that the training enhanced operator performance and workplace productivity. There is of course every reason to expect that the enhanced productivity of trained operators will continue, and possibly even improve, in the years ahead.

Allsco was able to train only 50% of its production operators in 2014. These solid bottom-line results suggest that it would be an entirely prudent business decision to provide the same training to the other 50% of production operators.

There were also significant intangible benefits to Allsco from the Opening Doors to Workplace Learning program including a noticeable enhancement in employee engagement and workplace culture. In particular, managers observed that the training successfully encouraged independent thinking and engendered proactive, problem-solving behaviours in production employees. Workers are more likely as a result of the training to take the initiative and make decisions on their own "instead of waiting for someone to tell them what they should be doing next." And, importantly, when workers do need help with problems, they are more likely now to give the problems some prior consideration and to come prepared with possible solutions in mind.

Although virtually impossible to quantify and monetize, such improvements in employee engagement typically lead to additional positive spinoff impacts on other key measures such as turnover, quality, and even customer satisfaction.

Case Study

Allsco: Opening Doors to Workplace Learning

By Canadian Manufacturing Network with research & report contributed by Lynette Gillis Ph.D. & Allan Bailey, Centre for Learning Impact.

Study Background

Overview of Allsco

Allsco is a manufacturer of doors and windows. The company has 93 employees – 55 in production in Moncton, and the remaining in a sales office in Moncton and in sales and warehouse facilities in Dartmouth. The company started as a family-run business 38 years ago and is now owned by the Atis Group, which provides doors and windows to dealers across Atlantic Canada.

Allsco management made a decision to implement training initiatives to improve overall team performance, enhance communication skills and enhance employees' ability to collaboratively solve problems and make decisions. The leadership team identified several employees who would greatly benefit from the training program.

Training Rationale

Allsco had three specific objectives for adopting the training initiative. The first was to increase reading skills among the participants and help them understand and interpret information and instructions more easily. The second objective was to increase oral communication, particularly communicating respectfully with coworkers and managers when dealing with complex issues or resolving conflict. The third objective was to increase problem solving and decision making capability and help employees organize their tasks collaboratively with coworkers to maximize efficiency.

The Training

The training program—"Opening Doors to Workplace Learning"—was developed by a Workplace Essential Skills Regional Trainer using resources provided by the New Brunswick Workplace Essential Skills Program, part of New Brunswick's Department of Post-Secondary Education, Training and Labour.

To meet the objective relating to improving overall team performance, discussion and teambuilding activities were employed. Also, various techniques were used to enhance communication skills including ongoing discussions about appropriate communication in the workplace. Strategies employed to enhance problem-solving ability included conducting a review of common workplace problems, and teaching participants techniques to help them better analyze problems and develop solutions. Participants were also engaged in real world workplace studies and discussion groups.

The training, which included supervisors and window assemblers (production operators), consisted of two training sessions per week for 17 weeks.

This case study focuses on the training to address specific performance and problem-solving gaps. These gaps were identified using an HRSDC Learner Assessment tool and a National Occupational Classification (NOC) code job profile for the Production Operator classification. In particular, five knowledge and skills areas were targeted. It was hoped that as a result of the training, participants would be able to:

1. Identify the cause of problems such as materials fracturing or chipping while being cut and solve these problems while referring to procedures and reference documents.
2. Make measurement adjustments without supervision when production operators find that some pieces of material that have been cut do not fit properly. Inform supervisor of lost materials and actions taken to resolve the problem.
3. Meet and discuss with production managers in order to determine solutions to specific problems such as when an operator observes that a product isn't up to standards.
4. Anticipate whether or not he/she can complete jobs in allotted production time and be able to request that other workers be assigned to help. Operator may be asked to explain the key factors preventing the operator from completing the project on time on his/her own.
5. Solve procedural problems affecting productivity.

Methodology: High Impact Evaluation

The Case Study Methodology

The Learning Value ChainTM

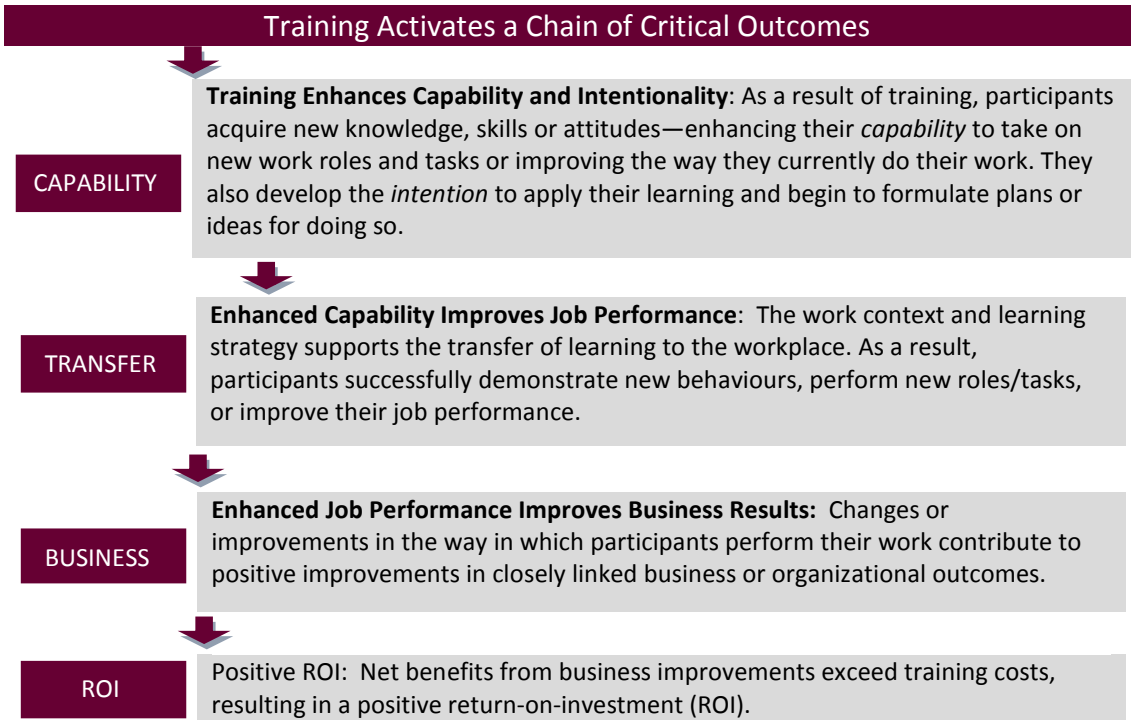
The Allsco case study adopts the Learning Value Chain evaluation approach—the core evaluation framework and instrument-set develop for the Gillis and Bailey High Impact Evaluation model. The Learning Value Chain™ framework offers an uncomplicated, field-tested framework for evaluating the learning effectiveness and the business value of training and human resource investments (Figure 1).

In the Learning Value Chain™, the training program triggers a chain of critical outcomes. Monitoring this chain of outcomes adds an innovative and critically important predictive value to the evaluation process. As desired outcomes are achieved at each link along the chain, greater value is added and the likelihood increases that training will result in positive business outcomes and return on investment. Conversely, if training fails to meet outcomes at any link, value is diminished and the prospect of positive business results and return on investment is at risk.

Using the Learning Value Chain™ framework, the training program is evaluated at each of four links (Capability, Transfer, Business Results and ROI). At each link, data is gathered to assess the extent to which the training has achieved key outcomes, added value and enabled the next critical event in the chain to occur.

The Learning Value Chain™ model also incorporates a diagnostic strategy to investigate training practices and strategies that may strengthen or weaken outcomes at each link and subsequently influence business impact and return on investment.

Figure 1
The Learning Value Chain™



Capability Results

Evaluation Questions: Did training participants develop new *capability*: acquire new knowledge and skills, adopt new attitudes, improve existing skills, or discover new and more productive ways of doing work? Did participants also develop the *intention* to apply their learning or improve their job performance?

To assess Capability—the first link in the Learning Value Chain™—course participants were asked to complete the Capability Questionnaire at the conclusion of the training.

Training enhances learning and had a high impact on other Capability indicators such as Confidence, Motivation and Perceived Value

The findings suggest that the Opening Doors to Workplace Learning program enhanced participants' capability. Self assessments by participants suggest overall gains in learning in document reading, communication and problem-solving. There was no reported change in working collaboratively with co-workers. They also expressed confidence in their ability to apply their learning and believe it will be possible to apply it in their specific workplace setting. They perceive the training as valuable and more than half express a high level of motivation to apply it in the workplace. By the end of training, most had developed at least some plans for applying their learning, and many had generated several or a lot of ideas.

Key questionnaire results are described below and summarized for all program participants in the Capability Index (Figure 2).

- **Skills & Knowledge**: Before training, 58% of training participants rate their knowledge and skill level in problem-solving as "high", 40% rate it as “moderate,” and 2% "low." After training, 75% rate their knowledge and skill level as “high”, a gain of 17%.
- **Confidence in Applying Learning**: The largest proportion of participants (70%) reports a "high" level of confidence in their ability to effectively apply their problem-solving knowledge to make effective decisions. Of those remaining, 25% report a "moderate" level of confidence**,** and 5% a "low" level.
- **Perceived Value:** Most participants (78%) perceive the program's value as "high" (i.e., credible, practical, relevant, and essential).
- **Motivation to Apply Learning**: Sixty percent report that they are "highly" motivated to apply their learning while the remaining 40% are "moderately" motivated.
- **Plans for Action:** Forty percent of the group report having a lot of ideas or plans for learning application. Another 40% have developed at least some plans or ideas for using their problem-solving skills in their work.
- **Workplace Readiness**: A large majority (80%) are confident that it will be possible to apply the learning in their workplace setting.

Risk Alert for Transfer

There were no risks identified for transfer.

Important Note:

The data for this case study is based on a fairly small sample: ten employees participated in the training and responded to the questions on the Capability and Transfer Questionnaires. Given this less than ideal sample size, the results should be treated as 'suggestive' and caution exercised when generalizing these outcomes to other training audiences. (It should be noted that smaller than ideal sample sizes are not uncommon when conducting training ROI analysis on SMEs (Small to Medium-sized Enterprises).

Effective Practices

The following practices were identified by participants as having contributed positively to the learning:

- Team building exercises
- Problem-solving activities relevant to real and common work-life problems that the participants themselves identified
- Communication exercises (speaking appropriately with co-workers and management)
- Homework – if given at all – was short and engaging

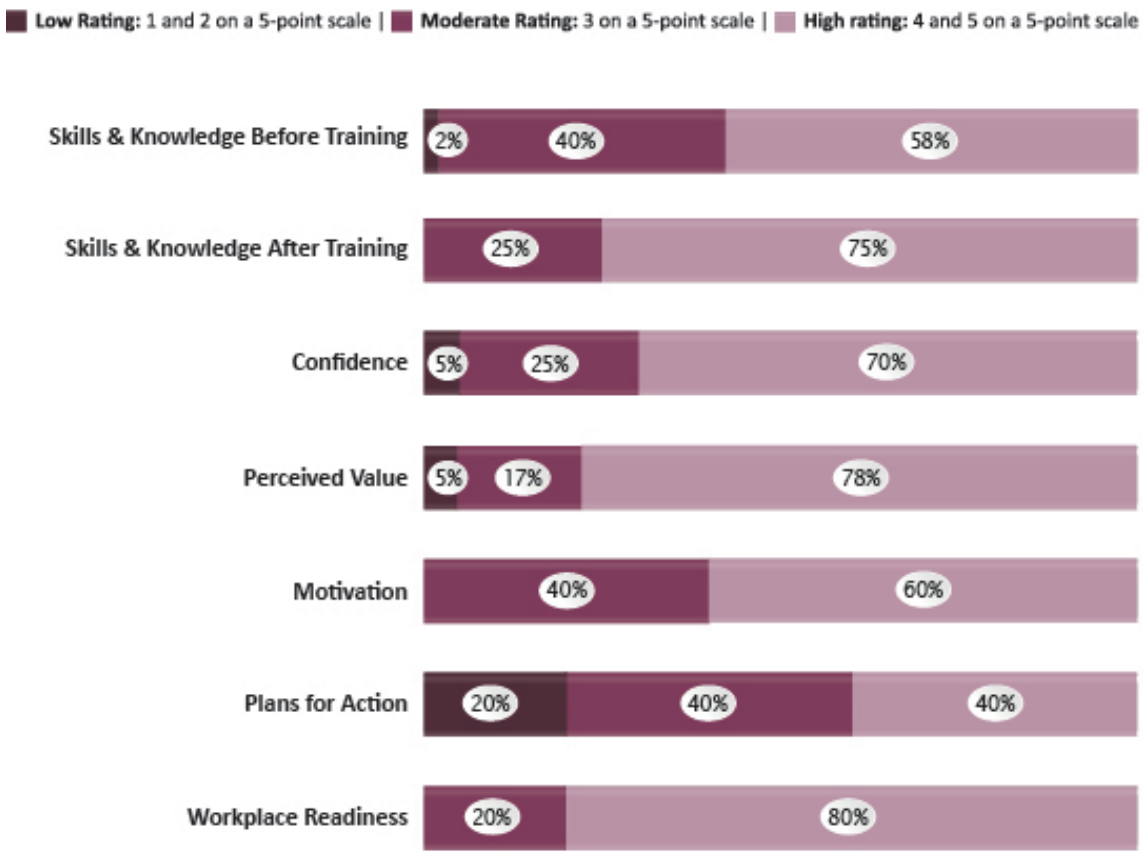
The participants also rated the instruction as "effective" or "highly effective" in all the following regards:

- Providing useful feedback during activities
- Providing opportunity for learning assessment or reflection
- Presenting key concepts clearly and logically
- Providing opportunity for collaboration, discussion and learning from others
- Providing useful response to questions, guidance or clarification
- Clearly communicating the learning and performance objectives
- Engaging and sustaining learners' interest

The instruction was rated as "moderately effective" with regard to:

- Providing realistic and work-related practice activities
- Eliciting learners' prior knowledge or experience in related areas

Capability Index



RISK ALERTS: None

Transfer Results

Evaluation Questions: Did the work environment and learning strategy support the transfer of learning to the job? Did training participants apply their learning to their jobs, and did the application of learning impact their work or job performance?

To assess Transfer—the second link in the Learning Value Chain™—participants in the Opening Doors to Workplace Learning program and their managers were asked to complete a Transfer Questionnaire (TQ) approximately two months following training. All participants responded to the questionnaires and two of their managers also completed questionnaires.

Training encourages learning application and improves job performance outcomes including reading skills, oral communication and problem solving.

The findings indicate that participants varied considerably in the extent to which they applied their learning back on the job. The two managers who completed the questionnaire noted that, in general, employee attitude improved for those who participated in the training—they become more positive and more engaged. Managers also noticed that when these employees did approach management with problems, they were more likely to come already prepared with possible solutions in mind.

The Transfer Index (Figure 2) summarizes these key results:

- **Learning Application:** Thirty-four percent of participants reported a “high” level of learning application, an additional third perceived a “moderate” level of application, and the remainder perceived a “low” level of application. Both managers found the highest application in the areas of ‘respectful communication’ and ‘applying the problem-solving process to make effective decisions’.
- **Performance Improvement:** Overall, 39% of participants reported a "high" level of performance improvement as a result of the training, and 43% reported “moderate” improvement. They perceived the highest levels of improvement in ‘being a more effective team member’ and ‘gaining confidence in speaking and listening skills’. Participants commented that they are faster, more focused and more efficient on the job. Both managers perceived “high” improvement in five out of the seven areas of performance identified.

Participants also offered additional comments related to aspects of their job that they were doing more effectively, efficiently, or better, as a result of the training:

- *I'm calmer, cooler, and not so fast to be bummed out when things go wrong.*
- *I seem to have more focus on all jobs that I'm assigned to.*
- *I usually always look for ways and means to be more efficient in my job.*
- *I don't bring work home as much.*

- *It helped me think of faster ways to do my job.*
- *This program helped me with my home life. I am dealing with a difficult child at home and feel I am more informed, patient, and understanding in how to deal with the problem.*

Managers commented on other aspects of job improvement as well:

- *The employees seem to discuss what each of them will do to achieve the goal desired, instead of waiting for someone to tell them what they should be doing next.*
- *Employees are making fewer mistakes because they now recognize the key info on their paperwork. They are more active and involved. They don't always wait for the supervisor to tell them what to do.*

Effective Practices Enabling Transfer

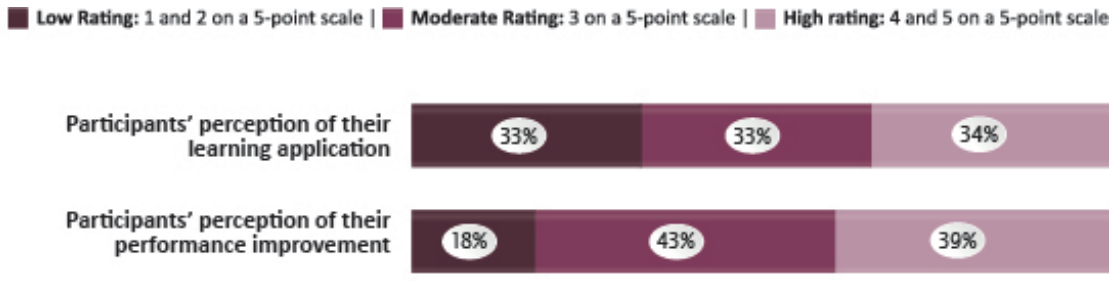
The following strategies and practices were identified by participants as significantly enabling transfer of learning:

- Clear performance expectations
- Adequate motivation and incentive
- Support from manager or supervisor
- Support from colleagues or peers
- Sufficient level of knowledge and skill
- Information, reference materials, tools, or job aids

Barriers to Learning Transfer

Participants varied widely in what they perceived as barriers to applying their learning. There appeared to be no one Transfer barrier significantly impacting the whole group.

Transfer Index



Organizational Results

Evaluation Questions: Did the application of learning or improvements to job performance impact business results? What were the intangible benefits from the training?

By becoming more effective and proactive problem-solvers, employees contributed considerably to overall improved productivity.

To assess the impact of Opening Doors to Workplace Learning on organizational results—the third link in the Learning Value Chain™—production performance data was collected and analyzed. In addition, managers and training participants were surveyed to determine their perceptions of how the training impacted business outcomes.

Supervisors and managers reported two specific areas of improvement resulting from the training—'improved problem-solving skills' and 'enhanced numeracy and document reading skills' in production operators. According to management, the enhanced capabilities of production assemblers/operators contributed substantially to improvement in overall productivity.

Productivity Improvement

As previously noted, managers observed that productivity improved as operators became better problem solvers and as they became more proficient at reading and understanding production and assembly documents, plans, and instructions.

Problem Solving

An example of improved problem solving was the enhancement in work flow in the Thermal Plant area. Production operators were able to apply their new problem-solving skills to restructure the deployment of the ten-person window frame assembly team in such a manner that spread assembly activities more evenly throughout the team. The result was a decrease in the overall time required to assemble each window unit (MHU, Man-hours per unit).

Numeracy and Document Reading

Previously, a common barrier in the production process has been operators' lower levels of numeracy and document-reading skills. Often operators might overlook or misinterpret key instructions or dimension notices resulting in either scrap product or the necessity of time-wasting re-assembly.

Senior managers identified the team's improved numeracy and document reading skills following training as a critical factor in improved product quality and productivity.

Business Results and ROI

The key business improvement resulting from the training is the

reduction in the time required to assemble window and door units—Man Hours per Unit (MHU). This is a familiar metric to Allsco, since the organization has been tracking MHU statistics for almost a decade.

2014 Improvement Data

The 2014 productivity number of 1.84 MHU showed considerable improvement over the 2012 productivity watermark of 1.90 MHU. At a labour rate of $14.00 per hour, the 2012 cost of assembly for each window was $26.60 ($14.00 X 1.90). The 2014 production cost was reduced to $25.76 per window for a cost savings of $0.84 per window.

Since the total 2014 output was 37,150 window units, the increased productivity yielded an overall cost savings of $31,206 ($0.84 X 37,150) when compared to the 2012 results.

ROI Analysis Considerations

However, before attributing these productivity gains solely to the training, the data was further analyzed to ensure that the potential contributions of other factors are taken into account. An important and conservative feature of the Phillips ROI methodology, is the requirement to ***isolate*** the contribution—determine what portion of the improvement is attributable to the training alone.

Another important consideration is the time period for calculating the impact of a training program. For most training programs of one-day to one-month duration, using the first year impact is considered a conservative and appropriate time period to develop the return on investment. Since the Allsco training occurred over a four-month time period, however, this case study uses a two-year impact timeframe to measure the business improvement and develop the ROI. This longer timeframe is further justified since improvements in essential skills typically have a longer lag time than most workplace training before the impact on business performance is appreciable.

It worth noting that the use of the first two years of benefit is a conservative convention employed for the purposes of ROI calculation for this case study. In reality the improved capabilities (reading and problem solving) will in all likelihood continue to enhance Allsco's bottom line for many years to come.

1. Isolation

In accordance with the Phillips ROI methodology, production managers and supervisors were asked to consider all other factors, besides training, that might have contributed to the 2014 productivity improvement figures (1.84 MHU).

After some deliberation the stakeholders estimated that the

training contributed in the range of 25% to 35% to the observed productivity improvement. Again, applying the guidance of the Phillips approach, this study assumes the most conservative of the stakeholders' estimates (25%). Thus, 25% of the observed improvement is attributable to the training, and the rest due to other, non-training factors.

Calculating the actual improvement due to training:

Annual improvement due to training: 25% X $31,206 = **$7,801.50**

2. Prorating

In order to develop a value for the business improvement over the first two years it is necessary to prorate the 2014 performance data over a 24 month period. Further, it is necessary to factor into the 2014 data, the lag time for the application of the newly acquired skills to produce performance improvement.

Since the Opening Doors training program did not conclude until the end of February 2014, this study assumes that the impact on the business (productivity) would not have begun to be fully realized in the 2014 production data. Further, This study assumes a 90-day time lag after training before participants have fully consolidated their newly acquired skills and applied them to the job. Thus, the actual business improvement from training would have been realized in the seven-month period between June and December.

Business Outcomes (First Two Years)

Since the benefits from training ($7,801.50) occurred over a seven-month period, this productivity improvement may be expressed as a monthly gain of $1,115.50($7,801.50÷7).
Thus the two-year Business Benefit = $26,748
($1,115.50/month x 24 months)

Program Costs

Allsco estimated the total cost of the Opening Doors to Workplace Learning program to be $15,920. This cost includes the burdened hourly salaries of participants and training facilitators.

Two-Year Benefit-Cost Ratio

Benefit-Cost Ratio = Total Benefits/Total Costs
Two-Year Benefit Cost Ratio = $26,748/$15,920 = 1.68/1= 1.68

Two-Year Return on Investment(ROI)

Return on Investment (ROI) = Net Benefits/Total Cost X100%
Thus, the Two-Year ROI= ($26,748 - $15,920)/$15,920 X 100%
Two-Year Return on Investment = 68%

(Note: This is a projected value based upon 2014 data. This projection assumes, of course, continuing status quo with no unforeseen impacts such as high turnover of trained staff, prolonged shutdowns, etc.)

Discussion

This analysis shows unambiguously that the training enhanced operator performance and workplace productivity. An ROI of 68% means that over the two-year timeframe, every dollar Allsco invested in training will be returned to the company and, in addition, the firm will earn $0.68 in profit.

While this study calculates the effect of the training in the first two years only, there is every reason to expect that the improved performance of the training participants will likely continue, and possibly even improve, in the years that follow.

Allsco trained only 50% of its production operators in 2014. These solid bottom line results suggest that it would be an entirely prudent business decision to provide the same training to the remaining production operators.

Intangible Outcomes

Apart from the fiscal returns from the Opening Doors training program, the investment also yielded several intangible benefits. Intangible benefits are those positive outcomes that, although perceptible, even measureable, are nevertheless too difficult to convert to monetary value.

Significantly, one of the key intangible benefits to Allsco of the Opening Doors to Workplace Learning program is the noticeable improvement in workplace culture and employee engagement. In particular, as mentioned earlier, managers observed that the training successfully encouraged independent thinking and engendered proactive, problem-solving behaviours in production employees. Workers are more likely as a result of the training to take the initiative and make decisions on their own "instead of waiting for someone to tell them what they should be doing next." Importantly, when workers do need help with problems, they are more likely now to give the problems some prior consideration and to come to discussions prepared with possible solutions in mind. Manager's comment:

> *"The impact is not always easy to measure in terms of dollar-savings or gains. But it is easy to see that it's helping to keep our employees more involved with a positive attitude, so it has a*

positive impact on things like less turnover and good work environment which is always a good thing for any company."

A senior manager also pointed out the training had an important impact on the atmosphere in the plant. Not only did the training give employees the skills to better communicate with one another, as noted earlier it also gave some employees critical tools to communicate more successfully in their private lives. In one case, for example, an employee praised the insight gained from the program that helped him communicate more effectively and empathetically at home: "It helped me communicate better with my wife—to put myself in her shoes."

Other Participant Comments:

- *This program helped me with my home life. I am dealing with a difficult child at home and feel I am more informed, patient, and understanding in how to deal with the problem.*
- *I don't bring work home as much.*

Although virtually impossible to quantify and monetize, such improvements in employee engagement have been shown to have positive spinoff impacts on other key measures such as staff turnover, quality, and even customer satisfaction.