

Low English Proficiency & Increased Injury Rates

Causal or associated? A case study

By F. David Pierce

A COMPANY EXPERIENCED INCREASES in injury rates among both non- and limited-English-speaking workers. Statistics showed that these workers were experiencing a significantly higher percentage of injuries. Drawing from the statistical inference of causality, the company launched an aggressive effort to increase English skills among its workers, deducing that this would help lower the injury rates. Those efforts met with worker reluctance to learn, an increase in employee relations issues, a decreasing pool of available English-speaking job applicants and no improvement in injury performance. Frustrated, the firm changed its approach and realized that English skill and injuries were merely associated measures.

Today, ethnic diversity in America's workplaces is increasing at a much faster rate than it has been during the past 75 years (FAIR). America truly is a land of immigrants—a reality that is causing both political and business response. In fact, even with decreased immigration numbers and heightened INS scrutiny since Sept. 11, 2001, ethnic diversity in the workplace continues to increase at double-digit rates across the country (U.S. Chamber of Commerce). This phenomenon is being driven by the large ethnic distribution in

You hire them because there are no other options." The rise in the number of workers who speak little or no English places a significant expanded challenge on company management, especially regarding communication (Solomon 18-22). How can benefits information or work rules such as accident reporting be communicated with these workers? How can they be trained on their jobs and how to safely perform those jobs? And how can changes and other important information—such as the hazards of a new chemical product—be shared with them?

Most companies that have experienced this increase in non- or limited-English-speaking workers have also found that accident rates rise [Harvey; Grey 16-27; Utah Dept. of Workforce Services(b)]. The deductive logic that has become unquestioned—even by OSHA—is that a causal relationship exists between these two indices. The root of this belief is tied to training effectiveness and the seeming inability to provide clear hazard and safety information to non-English speakers. In fact, the trend of OSHA citations issued for failure to provide training and warnings in the native languages of ethnically diverse workers grows each year (Pierce). Continuing this citation-abatement cycle has the power to provide a false validation of this causal relationship belief without discussion or even challenge.

In today's highly competitive business world where long-held beliefs must be challenged in order to discover new solutions for future competitive advantage, the basic question must be asked: Does a

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the available labor pool. As one company CEO says, "Even though 95 percent of your job applicants don't have the English skills to complete the written application, you are still faced with the reality that you must hire workers.

causal relationship exist between low or no English skills and increased injury rates, or is this merely an associated relationship? This is a vital question because the answer sets the stage for very different improvement strategies to be visible or not, judged or discarded, and accepted or rejected.

Different Economics & Dynamics

A 100-year-old company had successfully negotiated the ethnic expansion of the early 1900s when European immigrants flooded into America seeking an improved life and future for their families. At that time, three different factors provided much greater forgiveness for incorrect business approaches to dealing with increased ethnicity. First, in the early 1900s, the overwhelming aspiration of immigrants was to become American; to most, that meant learning the English language as quickly as possible. Second, the speed of business was much slower; change was set into timeframes that often went beyond five (or even 10) years. Third, work was simpler, tied largely to physical strength and the ability to endure long workdays. Translated to American business demands, dealing with ethnic, cultural and language issues in the early 1900s was much more forgiving and time was on the side of the companies.

Today, these factors have turned 180 degrees. Ethnic support communities provide valued nurturing for cultural ways and the dominance of native languages. English remains important but only as much as necessary to meet the demands of the workplace. Business operates at light speed, where forgiveness for poor decisions or approaches is almost extinct. If a wrong decision is made today, the business may not get a second chance—it may not survive. And while some business sectors still have a demand for low-skill work, most work available today interfaces regularly with high technology and demands higher skills, especially for promotion or increased pay. Clearly, the dynamics have changed. Translated to American business demands today, everything happens faster, is more demanding and is much less forgiving. A company may get two chances to choose the correct approach for dealing with this expanding workforce diversity, but efficiencies must be attained quickly and at minimal cost.

A Brief History

For as long as most management at this case study company could remember, the workforce had been “white.” Being in a traditional sector of manufacturing, technology change had minimal impact on the company. Operating from an old building in the historic district of a large city, the company had grown comfortable—too comfortable.

Outside dynamics began to have a negative impact on the firm during the mid-1990s. The market changed from local to regional, then to national. Competitors changed from small-sized manufacturers to large conglomerates. Technology began to quickly advance in this manufacturing niche. The availability of workers seeking low-skilled and low-pay work also

changed from largely white to people from an array of ethnic cultures. Seemingly overnight, the production workforce changed from being 95 percent white to being 80 to 85 percent non-native-English speakers. The change in market and workforce dynamics had hit this company with truck-like force.

The firm’s injury performance had never been great, but as the workforce changed, it became a horrible—five times the average injury frequencies for its SIC. Finding a workers’ compensation insurance carrier was a challenge and the costs were high. Company injury statistics showed that workers with no or limited English skills were four times more apt to be injured than those fluent in English. Management viewed safety as an admirable but unobtainable vision that simply was too expensive to pursue. Sure, associated injury costs were high, but gross profit margins had been okay. Now, they were quickly eroding.

Closer appraisal found that safety and profit weren’t the only eroding measures. Quality was a constant challenge and every customer knew it. Worker utilization and work performance were ever-present challenges. Morale had hit an all-time low, and turnover was high. By all measures, this company was in deep trouble and in clear danger.

As with many decisions facing business, the trigger for change was well into the pain threshold. Change was the only option to avoid collapse. A new manufacturing and warehouse facility was constructed. Millions of dollars were invested in an attempt to turn the company around. High-tech production equipment was purchased and installed—and that’s when the obvious problem of low English proficiency became an overwhelming issue.

Management deduced that the problem was the workers and the cause was low English proficiency. Taking a traditional “fix the workers” approach, the company invested in an English as a second language (ESL) program and required workers to participate. Thousands of dollars were poured into building English skills among workers, yet no progress was made. The measured level of English proficiency was not surging, and class attendance was dismal despite being required. Injuries, quality problems and employee relations issues continued. As a result, managers spent most of their time putting out fires rather than moving the company forward. The most frightening measure for this company was its shrinking market share. Something had to change, but what?

Changing Horses

Recognizing that this initial approach had failed, management realized that the key to improving was not rooted in “fixing the workers” and ESL. The traditional problem-solving method of changing “parts” would not improve the situation. A change from reductionistic thinking to holistic thinking was needed; the firm had to look at the system instead of its parts. This required directing all energy toward a “systems thinking” approach (Scholtes).

Using this new strategy, management began to

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see that the problem was not the workers or the workforce, and the cause was not the skills they did or did not have (including English)—nor was it the level or type of ethnic diversity within the workforce. The problem was that the system was not working effectively and the cause was the work environment and the work itself. Not having a common language certainly contributed to the problem, but that alone was not the cause of the increased injuries, the increased quality errors, the decreasing morale or the lagging productivity. In a systems perspective, English proficiency and the other performance measures were only associated system issues. In a system, as one “tanks,” they all “tank”—perhaps not immediately, but eventually. The opposite is also true.

Implementing a Systems Strategy & Plan

As with many problem-solving efforts, the first attempt (the ESL strategy) had no established objectives that could be measured when successful. The only “semiobjective” was to eliminate the problems. This time, clear objectives were established. Because the problems (including injuries) were occurring at the work/worker interface, the change objectives had to target this critical interface. Management established four change objectives:

- 1) Remove leadership and information barriers that create confusion, ignorance and a lack of companywide focus and effort.
- 2) Remove work environment and cultural barriers that impede team dynamics.
- 3) Remove barriers in the work itself that make worker success difficult.
- 4) Remove individual barriers that impede worker progression and success.

Thinking in systems terms, leadership asked, “What interrelated and interdependent system parts are present that cause a loss of quality at the work/worker interface?” Several upper-management-led problem-solving teams made up of managers, professionals and hourly employees were formed. Using a systems perspective, each team began by focusing on the work/worker interface and used the five-whys technique to find common and interrelated causes. (The five-whys technique is a process of asking “why” at least five times in a row to detect the root cause or meaning of a particular problem or situation; see sidebar on pg. 44 for more information.) All team findings were pooled into a cross-matched list that was channeled to a contracted change leadership firm. At that point, 20 major parts of the system that required orchestrated improvement were identified.

- Identify and measure the knowledge required to do the work.
- Identify and measure the skills necessary to perform the work.
- Restructure how workers are rewarded for the work, learning and building skills.
- Improve the quality of the worker/supervisor interface.
- Monitor and control critical process points, and implement other quality standards and measures.

- Enable individual participation in and ownership of the change process.
- Build team dynamics throughout the work environment.
- Evaluate and restructure the work itself.
- Standardize and formalize the work processes and tasks.
- Improve the quality of work leadership.
- Entrench individual dignity and establish shared values.
- Improve the scheduling of work.
- Establish clear work goals and objectives.
- Measure the work and overall worker/process performance.
- Create empathy with and involvement in life and community elements that can be confounders to work quality.
- Create and share a common vision to focus improvement.
- Re-establish company and team identities.
- Plan change and worker skill/job progression.
- Establish a healthy climate for and activity level of communication.
- Recognize and celebrate progress and successful performance.

From this 20-point strategy for improvement, a 10-step improvement plan was drafted and the necessary resources and subapproaches were identified or acquired. This 10-step plan would establish the progression of specific efforts that would accomplish the 20-point strategy. Like most successful company-wide improvement plans, this plan started with leadership and ended in celebration.

The 10-Step Improvement Plan

- 1) Build leadership skills and establish clear expectations and accountability.
- 2) Re-establish the company identity, a common vision, and company mission and values.
- 3) Open the communication climate and establish clear expectations for communication and information sharing.
- 4) Establish a trickle-down strategic planning effort including goal setting and the measurement of accomplishment.
- 5) Implement a comprehensive approach for actively integrating cultures and building teams.
- 6) Create and implement a system for work evaluation and skill/knowledge definition.
- 7) Institute and provide resources for a continual learning culture.
- 8) Build process formalization, standardization and control.
- 9) Establish expectations for individual participation and accountability.
- 10) Institute formal objective reviews, recognition and celebration processes.

Methodology

Build leadership skills, expectations and accountability. Both internal and contractor resources were used to evaluate leadership skill levels and to teach those skills found to be individually

low; the Kouzes and Posner leadership model and the Leadership Skills Assessment were among the tools used (Kouzes and Posner; Alliance for Training Inc.). Beginning with upper management, the evaluation and teaching effort was continued throughout the management chain, including all first-line supervisors. A 360-degree management evaluation process (manager, peers and subordinates) was implemented to gather regular feedback on the application of leadership skills and to entrench a high level of accountability for practicing leadership throughout the management chain.

Re-establish identity, vision, mission and values. Using long-term employees and newer employees with an interest in company history, a team-based effort to rediscover the company's historical identity was undertaken via archived materials, correspondence reviews and product evolution. Digital recreations of historical materials were framed and used as wall decorations throughout the new facility.

Additionally, as a result of many executive management meetings, a company mission was created and a vision for future company success was identified. As one step in the development of these critical guidance documents, an assessment was performed to identify and crystallize the values that had brought the company success and would carry it into the future. The values identified were customers, quality, workers, safety and profit. The statements of vision, mission and values were displayed throughout the facility, published regularly in the company newsletter, and used as the basis for strategic planning and decision making.

Open communication and information. Knowing that "information is power," management determined that all employees needed to feel powerful through opening the avenues of communication and sharing extensive company information with all them—including financial data and reports. An open-door policy went from being "just a saying" to reality. A no-fault communication rule was established: All communication was allowed (except that which was legally forbidden, was socially unacceptable, or degraded the human dignity of employees or teams). By opening pathways and sharing information, the preferred communication path quickly became overt, and management no longer had to address covert communication such as the grapevine and rumors.

Establish strategic planning and measurement. Starting with executive management, clear strategies and plans were created to guide the company toward its mission. In a trickle-down fashion, plans were shared with each department and team, and each then created strategies and plans to enhance its success and contribute to the company's success. Performance and improvement measures were identified and visually depicted for leading indicators and results, and also for key trailing results; injuries and results-oriented measures that serve to prevent injuries were included. Measures appeared

everywhere—in boardrooms, on department walls, on team whiteboards and at workstations. Goals and objectives identified in each plan created clear knowledge of what needed to be done and started a coordinated company-wide progressive effort toward the future vision.

Integrate cultures and build teams. A model for integrating cultures that emphasized the entrenchment of four cultural integration attributes was used [Utah Dept. of Workforce Services(a)]: 1) The management-led company culture is open to ethnicity. 2) All individuals are valued. 3) Knowledge and interaction is provided and assured. 4) The workplace environment is empowering. The model established 18 characteristics of a culturally integrated company; these included:

- Ensure a complete openness to speaking native languages.

- Provide programs for increasing workforce knowledge and appreciation of all ethnic cultures and differences.

- Entrench a commitment to employee retention and employee investment.

- Openly solicit ideas and valuing input.

- Provide chances for advancement.

- Build an open empathy for personal, family and cultural needs.

- Provide and ensure job knowledge.

- Provide individual learning/self-improvement opportunities and resources.

- Ensure regular management workplace interaction and communication.

- Build a strong sense of individual belonging to the company and teams.

- Help all employees feel that they contribute to the company's success.

Associated with this cultural integration effort, skill-building resources were provided, including English, mathematics, computers and other life skills (such as budgeting, dealing with single-parent challenges and U.S. citizenship); employees' family members were also encouraged to participate.

Team building became a major focus. Team leaders received training on team-building techniques

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Five Whys Technique

Five whys is a troubleshooting technique developed by Toyota Motor Co. in the early 1970s. Toyota had discovered that troubleshooting efforts often did not establish the true causes of problems before actions were taken to correct them or minimize their effects. Consequently, problems would recur. The need to get to the root cause led to development of the five whys technique. Its premise is to find the root cause of a problem by repeatedly asking why.

To use the technique, begin by asking, "Why did this problem or defect occur?" When the answer is found, ask, "Why is this the case?" and continue asking why questions at least five times. Through this process, a root cause about which action can be taken can be identified and corrected.

Five is not a magic number. It may be necessary to continue questioning why until the root cause is discovered or until no more information is available. When using this technique, it is important to focus on isolating and confirming the answer to each question, not on just brain-

storming answers. Brainstorming implies that all answers are valid, when, in the case of the five whys, only clearly factual answers provide help.

When using the technique, it is important not to accept intermediate causes without testing to be sure they are the cause of the previous "unknown." Otherwise, the troubleshooting effort may go off-track, pursuing causes unrelated to the original problem. It may also encourage the team to stop questioning before the true cause(s) has been identified.

Care must also be taken to ensure that this doesn't become an exercise in finger-pointing and blame-fixing. Blaming individuals often leads to quick "punishment" fixes and allows for no examination of systems or processes that contribute to human behavior. The idea is not to avoid the human causes of problems, but to avoid making them the only line of inquiry. In many cases, both mechanical and human factors contribute to a problem—and they often require different, complementary fixes.

Source: Stottler, W. "The Five Whys." Kepner-Tregoe Inforum. 2001, No. 2.

and on addressing team-destructive behaviors. Teams were emphasized in weekly meetings and in monthly team competitions for rewards.

Implement work evaluation and define skill and knowledge. All jobs were evaluated to define the knowledge, skill and performance needed to successfully perform each job. As baseline knowledge and skills were identified, each worker was evaluated against those measures; based on that assessment, the supervisor developed knowledge- and skill-building plans for each employee. The building of skills and knowledge was tracked via quarterly status and action meetings between the employee and supervisor or manager. In addition, the pay structure was changed from a seniority-based system to a pay-for-performance-and-skill system. This allowed employees to be rewarded for progress and for learned knowledge and skills. It also served to hold employees accountable for the individual improvement plans to which they had agreed and for those action items for which they had voluntarily taken accountability.

In addition, each job was evaluated in an effort to eliminate low-skill, low-reward, high-stress and

high-hazard jobs or tasks. Various alternatives were used to eliminate these jobs/tasks, including outsourcing, task elimination, job/task modification, purchasing semifinished product, and eliminating processes and lines altogether.

Institute a continual learning culture. The concept that one's learning is finished upon completion of formal schooling was aggressively assaulted. Beginning with upper management, programs for disseminating and reviewing new ideas, new knowledge and skills, including books and articles, were expanded companywide. A company library was created. Speakers were regularly invited to make presentations to employee teams and groups, and a program of team-based visits to and tours of other companies and processes were initiated. A computer lab was created next to the employee break area and its use was encouraged—even to play computer games. The monthly company newsletter highlighted individual learning successes and announced new learning opportunities and presented new ideas.

Build process formalization, standardization and control. Each process, including production and administrative functions, was defined, standardized and formalized into operating procedures and quality control documents. These procedures and documents were openly displayed in each work area so workers could review them at any time, and so they could be used in each employee's documented job-training process. Key quality control points were identified in each process and scorekeeping was created to track the control of quality in each process.

Establish individual participation and accountability. Weekly team meetings were established throughout the company. Individual team member participation was not only required, it was documented and became part of each employee's pay-for-performance review. Individual accountability was emphasized as each employee personally identified improvement or corrective actions taken each week, including safety hazards or behavioral contacts made. Reports from each team meeting were scored and points were awarded to each team. Competition for points between teams encouraged individual participation and action, as monthly winning teams received special recognition and rewards. Additionally, individual "line stop" powers were given to each employee when urgent or severe quality or safety issues were identified.

Institute objective reviews, recognition and celebration. To create a positive atmosphere concerning skill- and knowledge-building and to minimize the confrontational aspects of reviews, the skill- and knowledge-building review process was decoupled from the pay adjustment/pay-for-performance process. This allowed the supervisor and employee to concentrate on building the skills and knowledge needed to meet the demands of the current job and to ensure planned future progression. As much as possible, reviews were based on actual objective testing in order to remove possible biases from supervi-

sor or employee likeability, and also to prevent errors caused by reviewer observation deficiencies.

Several company recognition programs were created to honor individual successes and exceptional performance. Team leaders and supervisors were taught the importance of cheering on team members, both individually and in team meetings (Blanchard and Bowles). Each month, all employees gathered to celebrate accomplishments, and those who actively participated during the month to correct safety or quality problems took part in prize drawings. A calendar showing all holidays and celebrations of the different cultures represented in the workforce was created and displayed in the employee entry hall. This not only educated employees about the different cultures, it also became a focal point for additional company celebrations of major ethnic holidays such as Cinco de Mayo, Eid-al-Fitr and the Chinese New Year.

Results & Conclusions

Planning and communicating a massive change effort such as this predictably brought about an immediate Hawthorne Effect in which almost all failing measures improved or held steady (Mayo). Management used this "honeymoon period" to get well into the 10-step improvement plan, where results could start coming from better processes, communication, leadership, teams and morale. Within six months, all programs were either completed, implemented or well into development, and all key success measures showed significant improvement, including English proficiency (up eight percent); injury rates (monthly injuries cut in half); quality performance (error rate decreased by 15 percent); turnover (year-to-date rate leveled off); team performance (productivity rates up seven percent); and employee relations issues (decreased by nearly half).

In retrospect, one expected and one unexpected barrier were identified to implementing a systems approach in this case study. The expected barrier was getting employees to look at problem solving from a holistic, systems viewpoint. The high participation used in this effort—fueled mainly by employee excitement and energy—quickly overcame this barrier.

The unexpected barrier was getting management to let go of traditional problem-solving techniques and assumed-successful historical approaches. This barrier was by far the greatest roadblock to progress—remaining significant even in the face of eroding business and workplace indicators. It was overcome thanks to solidarity of belief in the systems approach within upper management, by upper management coaching and tenacity, and by the successes generated by the new approach.

The company recently celebrated 1,800 days without a lost-time injury and has developed a reputation in its market for quality and affordability (due to production efficiencies). The market share erosion was reversed and profit margins are again strong. The future looks bright.

This started out as a traditional problem-solving

effort to correct an obvious problem—poor English skills among a majority of workers. In the process, company management discovered that the commonly taken approach failed because it began with a false assumption.

Since one clear exception puts the entire rule in question, the results of this case study indicate that increased injury rates and decreased levels of English proficiency in the workforce are not causally connected as it is often assumed they are. Just as it is true of many other system measures such as quality and performance, and turnover and morale, high injury rates and low English proficiency are merely associated measures.

Regardless of the tempting inference provided by the probability analysis from injury data of both English-speaking and non-English-speaking workers that shows the latter are more apt to be injured, this is not a simple picture. In fact, many other system parts contribute to the data and to the improvement of all measures. This case study shows that long-range improvements in safety, quality, morale, turnover or English proficiency can be achieved using a systems perspective to problem solving. ■

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