by Kim Finison and Fred Szedlak

General Motors Does a Needs Analysis

NEEDS ANALYSIS is an essential part of any training professional's toolbox. Simply put, it's a way to gather and interpret information on the needs of an organization, a group, or an individual.

To conduct a needs analysis in its metal fabrication plant, General Motors and the United Auto Workers collaborated. The UAW's needs analysis instructor, production training coordinator, and the training coordinator's counterpart at GM's Educational Development Center made up the needs analysis team. They also selected additional people for the project, from employees with a skill assessment survey on file. The final team included one supervisor and two hourly employees—us, the authors.

As a team, we selected a press operation—the blanker area—in the metal fabrication plant as the pilot area because it was undergoing major changes in new technology, a new operational philosophy, and new dies (tools for imparting a shape or finish to an object or material). A *blanker* is a shop term for a press that cuts the shape of a part (or *blank*) from a coil of sheet metal, much like a giant cookie cutter.

At the initial meeting between the needs analysis team and its client, the blanker area's planning coordinator, the coordinator identified what he considered to be a performance problem. He said that the blanker area couldn't achieve the desired production schedules, efficiency, and cost-per-part competitiveness required to meet companywide goals for continuous improvement and customer satisfaction. The team determined that the main focus of the needs analysis would be on training solutions, but the coordinator agreed to look at any nontraining issues that the team might find. We told him that experience had shown that nontraining issues were important in previous projects in the metal fabrication plant.

Five steps to solutions

We set about to implement a five-step needs analysis:

1. Identify symptoms and causes.
2. Plan data-gathering techniques.
3. Collect the data.
4. Analyze and interpret data.
5. Report results and suggest solutions.

The first step was to identify symptoms (observable facts or events) that could indicate a performance problem. The main performance problem in the blanker area was not meeting production schedules on time. Some of the symptoms were:

- a decrease in efficiency
- an increase in the transition time (the time it takes to change a die to run a different part)

> ***Needs analysis is an essential trainer's tool***

- downtime due to a lack of steel
- downtime due to repairs on dies.

Some causes (reasons that could explain the observable facts or events) for the symptoms were as follows:

- There were frequent scheduling changes.
- There was inefficient communication between production, scheduling, and maintenance areas.
- The storage room was disorganized so that it was difficult to locate different types of steel rolls or blanks, which also caused inventory errors.
- The maintenance and production schedules weren't coordinated for maximum efficiency.

In step 2, the team planned its data-gathering techniques by interviewing production and skilled trade workers; production, skilled trade, and maintenance supervisors; scheduling personnel; and the steel expediter.

It became apparent that the problem was complex. It wasn't limited to the blanker area but overlapped into several departments and job classifications, including production, maintenance, scheduling, steel expediting, die tryout, and die-cycle control. In fact, the problem had a snowball effect: A small problem in one area of the operation affected another area, which affected another area, and so on.

In step 3, we collected data through a survey questionnaire and face-to-face interviews with workers in the affected areas. It was a challenge because so many departments were involved and because we wanted representatives of all three shifts.

Due to the project's complexity, the team decided to form a core team of key players from each of the affected departments to assess the feasibility of possible solutions in those areas. Everyone liked that approach because each area could have buy-in and be involved directly. We held roundtable discussions on each department's work roles and responsibilities and how they affect each other. We also assigned subject matter experts from each area to examine their departments' trouble spots, including the training and nontraining issues identified by the needs analysis team. And we contacted other SMEs from other GM locations to obtain additional information.

In step 4, we analyzed and interpreted the data. The results indicated these possible solutions:

- Use a computer program for scheduling (a training solution).
- Develop and implement an organized floor plan and layout for the storage room (a nontraining solution).
- Color-code the dies to the presses (a nontraining solution).
- Provide intermediate training on P.S.I.C. (a computer program for ordering steel) and on cutting shippers (a training solution).
- Have the service departments give equal priority to the blanker area as other areas (a nontraining solution).

All of the SMEs' preliminary information was presented to core team members to assess the feasibility of the possible solutions for their departments. Then, they prioritized the solutions to arrive at a recommended mix. The final list, which contained training and nontraining recommendations, is a direct result of the questionnaires, face-to-face interviews,

and possible solutions posed by all involved parties. Next, the core team members assumed responsibility for implementing the recommendations in their own departments.

In step 5, the needs analysis team reported its findings to the blanker area's planning coordinator. We listed solutions, the costs to implement them, the expected results, and the potential value and benefits.

We finally ended up with nine solutions for the blanker area to solve the problem of not meeting its production schedules:

1. Implement a new two-week scheduling program.
2. Implement a floor plan and layout for the storage room.
3. Institute a preventative maintenance program.
4. Provide dedicated service people for the blanker area.
5. Divide the blanker area into two separate areas to make it more manageable.
6. Implement a skeleton-part procedure for dies scheduled for maintenance.
7. Color-code the dies to the presses.
8. Train production operators in statistical process control.
9. Provide a training solution for the steel expediter.

The solution that turned out to have the most impact was number 8. Here's how it worked.

Training in SPC was provided for the production operators. The cost was minimal because we already had the course, taught by in-house instructors. The results were improved quality and a 30 percent reduction in scrap rate. The value was a savings of $502,855 in the first year. The benefits were the financial savings and workers' pride of ownership for the improvements.

Other results were

- 30 percent increased efficiency
- 10 percent lower costs
- improved inventory capability and cost
- a 35 to 80 percent increase in first-time quality
- less downtime for repair
- a 7 percent increase in productivity
- a 30 percent reduction in the scrap rate.

Perhaps this tale lacks a few bells and whistles, but it is an instructive account of how a no-nonsense needs analysis can achieve some pretty fair results.

Kim Finison *and* **Fred Szedlak** *are with the Lansing Automotive Division, General Motors, 920 Townsend, Lansing, MI 48921. Phone 517/885-1612 (Finison); 517/885-1511 (Szedlak).*

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