

What Managers Need To Know About Training Their Production Workforce

*A Guide For Plastics Companies That Are Serious
About Developing A Fully Skilled Workforce*



Routsis Training
Hands-on. Online. Ongoing.

The Challenge...

An open invitation to anyone who does not want to spend a dime on training and believes that structured in-plant training is just a waste time.



Unlike some plastics trainers, I started out on the production floor. I have since owned a tool shop, sold and rebuilt molding machines, and am currently active in the industry as a hands-on engineer and trainer.

I have worked in the plastics industry and have seen first hand the gross amount of money and resources wasted because of poorly trained production workers.

It has been over 20 years now since I founded A. Routsis Associates and I'm honored to say that our training

materials are used in over 1,800 companies in 31 different countries. This includes 61 learning centers and educational institutions that use our interactive training programs as part of their standard training.

Challenge: I am so confident that our training system will save you money that I am willing to outfit your company with an in-house training system at no cost to you. All your company has to do in return is train your employees and share a percentage of your savings with us.

To discuss the details of this offer and to get your in-house training without spending a dime up front, please call me at (978) 957-0700 today.

**Andy Routsis, President
A. Routsis Associates, Inc.**



What to expect from this report

This report was created to help educate decision makers of companies that are serious about developing a fully skilled production workforce. We'll cover just about everything that's involved with implementing an effective, structured, in-house training program.

The Importance of Plant Specific In-House Training

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An experienced and efficient workforce is a company's most valuable asset. While the majority of managers realize that training is important, many don't take the time to devise and execute a structured training initiative. You'll also find some tips for setting up your facility's training initiative.

Exploring the Different Methods of Training Your Workforce

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The only viable solution for achieving workforce competence is to establish a structured, plant specific In-House training program that combines interactive training and advanced process simulation, which is reinforced by job specific, on the floor training exercises. Also covered are the critical success factors for a successful training plan.

Get a Measurable Return on Your Training Investment

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We'll help you justify the cost associated with training in-house by pointing out the areas that provide immediate payback. We list the areas in which you'll see improvement. We'll also provide you with a payback calculator to validate your facility's situation.

Plastics Industry Survey Reveals Importance of a Skilled Production Workforce

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A comprehensive industry-wide survey revealed many statistics and conclusions relevant to plastics manufacturing facilities such as yours.

What Can Make or Break Your Training Initiative

10

With over twenty years of workforce training under our belt, we know what can make or break a company's training initiative.

Choosing the Right Training Provider

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10 requirements that you should demand from any training provider.

Global Standards for Plastics Certification (GSPC)

12

We're the only training provider that offers proven, recognized Global Certification for operators and technicians. This comprehensive system is being used in dozens of countries across the world, and is quickly being accepted and implemented here in the United States.

A Program Designed to Guarantee that Your Employees Get Trained

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Our Training Assurance Plan goes above and beyond the capabilities of other training providers. We'll come to your plant, help you devise a training plan for each of your employee levels and see to it that the plan is executed by following up with quarterly reviews.

Manufacturing Industry Survey Reveals an Overwhelming Lack of Skilled Employees

15

A 2005 survey of US manufacturing derived many surprising concerns. With the skills gap continuously increasing, the need for developing a high-performance workforce is greater than ever.

14 of the Most Frequently Asked Questions

16

Here are some questions that we answer on a regular basis.

Problems Facing Plastics Manufacturers

- ☒ over \$250,000.00 of scrap produced annually (results of 2005 survey)
- ☒ mountains of regrind in inventory
- ☒ smashed and damaged molds
- ☒ hundreds of machine hours lost weekly from technicians troubleshooting unstable processes
- ☒ over two hours spent changing over and starting up each job

What is the root cause of all this loss and damage?

In a recent industry survey, 100% of the managers and executives polled stated that these problems are a direct result of a poorly skilled workforce. Don't let under-trained employees run your company into the ground.

The In-House Training Solution

Even the best equipment cannot compensate for bad processing or a poorly designed mold. The solution to the problems listed above is to improve the skill level of your production personnel.

Since it's not logical to send all your production personnel away for training, the only viable option for achieving workforce competence is to establish a structured in-house training program.

By significantly improving the skill level of the workforce, companies have increased their productivity by at least 37% within the first year.

The Importance of Training

A business grows and profits when its employees are constantly increasing their knowledge and experience. No one can dispute that an experienced employee is a valuable asset to any company. But while most managers realize that training is important, many don't take the time to set up a training initiative and keep it going.

Successful businesses always provide extensive and continuous training for their employees. This attention to education and training is one of the reasons these companies are where they are today. A business can only grow when its employees are constantly improving their skill levels. Setting up an in-house training program takes some work, but the dividends are well worth it.

Why Train?

Training is one of the hottest topics being discussed by managers throughout the plastics industry. To be competitive in today's lean global marketplace, companies must continue to produce quality parts with a minimal number of skilled employees.

Technology is constantly changing in the plastics industry. Materials have changed drastically, new machine control systems are being introduced, electric machines are becoming just as common as hydraulic machines, and processing techniques are being altered to keep up with the trends.

Why Make a Commitment to Training?

Reason #1: To Stay Competitive

An in-house training program gives you the competitive edge in today's fast-paced plastics industry. Having trained employees who understand the concepts of the molding process can better adapt to new production runs and can troubleshoot in a more logical and efficient manner. The bottom line is that your company will run smoother and will have a reputation for consistently delivering quality parts.

Reason #2: Commitment to Your Employees

Today's customers are sensitive to quality, economy and worker safety. Customers are impressed with a job delivered on time and on budget, and from a safe plant.

Imagine being able to boast that all of your production workers have gone through a comprehensive in-house training program and that your company has a system in place for continually improving the skills of its workers! Not only does this boost confidence and security among your employees, but it also tells your customers that you're committed to raising the bar.

"A survey of 42 injection molders who have had process improvement training programs, indicated that their per machine profit increased by more than \$13,000."

Plastics World (February, 1993) ← *Imagine that was over 12 years ago!*

Training Tips for Your Facility

➔ **Be Aware that You Are Training Adults**

Adults often have firm ideas of how to go about learning a subject. Realize that people receive information in a variety of ways, and only a percentage of the material presented will be learned. When training, retention is the key for developing applicable skills.

Studies have shown that people learn best from a combination of training methods that can be repeated over and over again if necessary. Some concepts may have to be repeated as many as seven times to be remembered. Reading books, magazines, and industry manuals can be helpful, but it's not realistic to use such forms as a primary source of training. Retention rates are maximized when the information is presented in a multimedia format - utilizing audio, video, and on-screen titling.

➔ **Refer to Yourself as the Facilitator, Not the Instructor**

Adults often bristle at the labels "teacher" and "instructor". We have learned that the preferred term when training adults is "facilitator". This title infers that the facilitator is not lecturing or preaching, but is there to help the employee teach him or herself or provide the necessary pathway.

➔ **Your Key Employee May Not Be the Best Facilitator**

You might start off your training program by making your most valuable employee the facilitator. However, this could be a mistake. This is not necessarily the best way to go about setting up the program. We've learned that an organized and personable individual is more than capable of being a successful facilitator and can always ask a more knowledgeable person for information on an occasional basis when necessary.



A good facilitator never infers to a participant that he or she is incompetent or ignorant, and never gets angry at a participant for not understanding. A facilitator's patience is just as important as a grasp of the subject matter.

Participants sometimes want to leave a course of study before they have finished. This often happens because the participant is confused or lacks confidence. It is up to the facilitator to get the participant back on track to finish the course.

When choosing your facilitator, look for someone with a natural inclination to explain concepts and help others. Your employees will respect such a person, and will be grateful that you have chosen such a good facilitator. They will also learn better and faster, and will make the training more enjoyable for all those involved. After all, your employees want to do a good job.

➔ **Training Room Setup**

When setting up the training room, it's important to understand the effect that the room will have on participants. If the room is professionally appointed, clean and quiet, participants will take training seriously. If it's dirty and cluttered with noisy people wandering in and out, the training room will seem more like a break room or cafeteria, and little or no training will take place.

To set up the training area, choose a room as far as possible from the production area. There should be sufficient lighting, enough chairs and tables for participants to be comfortable, and a small shelf with texts, magazines, manuals and other materials for participant reference. Remove everything from the room that does not pertain directly to training. If this isn't possible, move boxes or other clutter to a corner of the room and cover it up so it doesn't distract the participants.

Make and uphold a few simple rules to distinguish the training area from other areas of the plant. For example, you might insist that no food, drink or smoking be allowed in the training area, and that breaks be taken outside the training room. Make a sign with the rules and post it on the door. This tells participants that the training room is for training only, not for socializing or coffee breaks. The room should be a soft, light color, such as pastel blue or green. Avoid dark colors since it will put people to sleep!



To learn more, visit www.traininteractive.com/newsletter and sign up for our FREE eNewsletter

Exploring the Different Methods of Training Your Workforce

Available Training Options

Training comes in many different forms – books, manuals, videos and DVDs, seminars, computer-based interactive training, process simulation software, and plant specific on-the-job training. Ideally, every company would like to provide on-the-job training performed by a knowledgeable, experienced leader with a knack for instruction. However, the right person for the job is often too busy producing to take the time to extensively train new employees.

We have determined that an effective in-house training initiative requires a combination of training methods.

A. Routsis Associates was the first training provider in the industry to actually travel to a plant, discuss the problems that need improvement, and help devise a structured training plan geared to a specific operation. The following paragraphs give a brief description of each available training method.

→ Printed Materials

Books, manuals, and industry publications are inexpensive, easy to obtain, and can be used over and over again. However, asking an employee to read and retain a large body of written information is somewhat unrealistic. Most people require interaction in order to learn effectively. Printed materials are essential forms of reference but do not provide any measured results.

→ Video Training

Training with videos or DVDs is visually interesting and is somewhat inexpensive, but still lacks interaction and the ability to monitor progress, unless hand written tests are passed out and logged by a facilitator. Another drawback is that a video is a linear presentation that can not be customized. Video presentations can be very lengthy, and studies have shown that retention drops after more than three minutes of continuous video. It is for these reasons that video or DVD training are not viable options when choosing the best training methods.

→ Seminars

There are several variables associated with classroom training, guest lecturers and seminars. Will the workers be able to understand and keep up with the instructor? How much will they retain if they “zone out” during the session? How many times will they have to repeat the session to apply it on the job? What’s the ideal number of employees to train at one time? Although the information provided in a classroom setting may be useful, it is almost impossible to track its effectiveness and should not be used as the primary training source.

→ Interactive Training

Interactive training is continually gaining popularity throughout every industry. A. Routsis Associates combines 3-D animation, digital video from actual production environments, on-screen titling, and professional narration – guaranteed to captivate the end user. Each training course contains an average of fifty questions that tests a participant’s knowledge before, during, and after the program is delivered. This type of training is available 24/7 and employees can learn at their own pace, creating a comfortable environment.

Since all of our training programs are up-to-date and use ‘industry best’ practices, the information presented to your employees is undoubtedly relevant. Furthermore, each of our courses can be easily customized to your specific needs. Interactive training provides measurable results and is most effective when used in conjunction with plant-specific exercises. This ensures that the knowledge gained during the interactive training can be demonstrated as learned skills.

→ Process Simulation Software

This virtual machine allows the user to experience a ‘real’ processing environment minus the costs involved with interrupted production, machine time, and material waste. Participants are required to ‘produce’ an acceptable product within given specifications – utilizing interactive process control parameters to identify and remedy product faults. Troubleshooting abilities are measured and logged as a spreadsheet for the facilitator to analyze. Process simulation software is an ideal transition between interactive training and the production floor – allowing you to isolate part defects, improve cycle times, and test various processing methods.

→ On-the-Job Training

Hands-on training is perceived as the best way to train any employee, but it is very costly. For this type of training to be successful, it must be conducted by an experienced supervisor or manager. With that being said, if you pulled one of your best workers off the production line to become an instructor every time a new employee was hired, you may suffer some consequences.

On-the-job training can teach an employee about the visible workings of machines, but not the inner workings, and some processes may be too fast to see well. This is another reason why we suggest a structured “blend” of training. When implementing an in-house training program, specific on-the-job training should be combined with other training methods in order to be effective and efficient.

With over 20 years of training experience in the plastics industry, A. Routsis Associates knows the 6 critical factors that can make or break your company's in-house training program.

Relevant: The information being presented must be relevant to their job and your plant. A comprehensive in-house training plan incorporates all of the training necessary to instill a good base of fundamental knowledge.

Captivating: Training must be captivating in order to keep the participants' attention. Everyone knows that in order to learn, you must pay attention – yet companies often rely on boring lectures and literature to train.

Interactive: Employees retain significantly more information in an interactive environment. Research has shown a 38% increase in retention when using interactive training compared to other methods.

Customizable: Curriculum must be tailored to meet the specific needs of your plant. Training media, such as interactive training, can be easily customized to your business at no additional cost.

Skill Development: Too often, participants learn a wealth of theoretical information yet do not understand how to apply it to the workplace. After being trained, your workers need to develop skills so the knowledge can actually be used.

Progress Monitoring: Tracking the results proves the effectiveness of the training. Facilitators need to use a training method which makes it easy to track and monitor each employee's progress.

You Wouldn't Sit Through A Boring Presentation, So Why Should Your Workers?

Just as presentations need to be captivating – so does your in-house training. Many companies place a large importance on multimedia tools for sales and business presentations, but none of these tools are used to train their workforce.

A study performed by the Department of Defense revealed a "38% increase in retention" as a direct result of using multimedia training (Ultimedia Digest, 1, 5-8, 1992). Despite profound advances in technology over the past decade, outdated learning practices are still being employed in plants across the world. Without the use of multimedia presentation, nearly half of your training efforts will be wasted.

Interactive Training Is the Most Efficient Option

When compared to other training methods, computer-based interactive training can reduce learning time by up to fifty percent. This significant reduction in learning time is a result of the flexibility associated with interactive training.

- The combination of visual presentation with audio explanation delivers information in an easy-to-comprehend format and gives the user the ability to essentially rewind and replay any section that is not fully understood
- As the user trains, the program monitors how much time is being spent and can provide the facilitator with detailed test results
- By providing immediate interaction and feedback when answering questions, the content covered is reinforced as many times as necessary until the user displays a predetermined percentage of mastery
- Self-paced instruction allows each participant to progress comfortably
- All of our interactive training courses can be customized to meet your company's specific needs

Why Off-Site Training, by Itself, Is Not a Viable Option

There are many drawbacks to training your workforce using off-site training providers.

- It is impossible to send your entire workforce away for training
- Most people cannot apply off-site training to their production workplace
- Off-site training tends to cram extensive amounts of information into marathon sessions of time – counteracting most expert recommendations of 1-2 hours a week
- Sending multiple employees to off-site training is most often cost-prohibitive

Off-site training initiatives are most effective in the role of introducing new concepts and theories, such as process monitoring to key employees. In practice, companies only send managers and supervisors out for off-site training, isolating the information and thus affecting very few workers.

Interactive training is the most cost effective method...



Additional benefits to interactive training:

- Low cost per employee with each additional person trained
- Training can occur during unexpected downtime and off-shift hours
- Trained employees work safer and more confidently
- A commitment to training creates company loyalty, thus reducing turnover
- Information is more consistent

...when compared to other forms of in-house training; especially when broken down to a 'per-employee' basis. The cost of hiring on site experts and trainers can be a very costly venture, which can increase exponentially as the trainer returns over time. By taking your employees off the floor for days at a time, costs can exceed five to ten thousand dollars per employee in labor costs.

Using on-the-job training as the exclusive method to train all your employees is the most costly option out there by far, since it requires time off the job for both the trainer and trainee. Over a period of time, it has been our experience that the information passed on is limited to a need-to-know basis, making it sparse and incomplete.

It is impossible for most workers to convey both the fundamentals and concepts necessary to make educated and confident decisions. After a couple years, this apprenticeship process can cost tens of thousands of dollars in the wages of each employee. When factoring in the cost of wasted material, machine usage, and possible equipment damage – the overall figure can be staggering.

Our interactive training solutions will impact your production workforce within three months for costs as low as a few hundred dollars per employee.

What Improvements Can You Expect From Training?

Let's face it — an employee that can recognize and correct problems is far more valuable than someone with only a surface understanding of his or her job. Thorough knowledge of plastics production can be gained through years of experience, but this means it will take a significant amount of time for a new employee to become a valuable asset to an operation.

A greater understanding of the job at hand can be achieved through structured training. By utilizing training, your new employees can become "experienced" much quicker. The effort required to set up a structured training program is paid back many times over by reducing; cycle times, scrap rates, mold damage, regrind, machine downtime, rework of parts, and employee injuries. Any manager can quickly assign a monetary value to all of these areas.

As an example of just how important training is in reducing and optimizing an injection molding process, the chart on the right illustrates savings on only one machine!

Savings Per Machine on a Yearly Basis				
Injection Molding Machine Hourly Rate				
% Cycle Time Improvement	\$30 / hr	\$40 / hr	\$50 / hr	\$60 / hr
10%	\$18,000	\$25,000	\$31,000	\$37,000
15%	\$28,000	\$37,000	\$47,000	\$56,000
20%	\$37,000	\$50,000	\$62,000	\$75,000
25%	\$46,000	\$62,000	\$78,000	\$93,000
30%	\$56,000	\$75,000	\$93,000	\$112,000
35%	\$65,000	\$87,000	\$109,000	\$131,000

This table represents the cost savings per machine when improving process efficiency through structured training. The annual figures above are based on a 5 day/24 hour operation.

Visit www.traininteractive.com/cases to read a number of ROI Case Studies

Can My Company Really Justify Spending Money To Train Our Employees?

At Routsis we are constantly asked "I know we need training, but how do I justify it?". There are many ways to justify the cost and quantify the associated payback areas. Since poorly skilled employees are the root cause of most production losses, the highest return on investment comes from these three categories: Scrap, Downtime, and Equipment/Mold Damage.

In a recent industry survey we found that most companies lose over a quarter of a million dollars annually just in scrap and reworked parts, yet are not willing to invest a fraction of this to remedy the problem. As a result, the trend continues and as the company expands and grows the financial losses become staggering. Our customers typically realize first year reductions of over 61% in both scrap and rework while also eliminating customer returns – all as a direct result of improving the skills and confidence of their workforce.

The Most Advanced Equipment Will Never Compensate for Poorly Skilled Workers

Despite major advances in technology, machine manufacturers have still not eliminated the need for a good, skilled molder. A strong fundamental knowledge of injection molding is necessary to properly set-up, troubleshoot, and maintain a repeatable process.

Do You Underestimate the Cost of Downtime?

In our experience, managers underrate the impact of downtime on their company, often ignoring hidden downtime in their calculations. Downtime is not only the time when the machine is idle not making parts. Mold change time, troubleshooting time, additional cycle time and any time when the machine is producing defective parts also constitutes downtime. Faster mold changes, more stable processes, and shorter cycle times can easily reduce this by more than 65%.

How Much Are Damaged Molds and Equipment Costing Your Company?

Although any piece of equipment can malfunction, smashed and damaged molds are generally the result of improper handling, processing, or maintenance. Employees lacking competence ignore signs of wear or violate good practices because they just don't know any better. In most cases, they do not understand the impact of their actions to the company and their customers. We have found that virtually all employees want to do their jobs well, but most have never received the skill and confidence building tools necessary to do so.

It's Time to Get Serious About Training

Investing in professional training demonstrates a commitment to your employees. Improvements in company loyalty and morale, as well as reduced turnover, will be clearly evident. A commitment to your workforce competence is also an impressive selling point for both your current and future customers.

Competent Workers Provide Immediate Payback Through:

Lower scrap rates

Reduced mold damage

Decreased machine downtime

Improved troubleshooting time

Faster machine startup

Fewer defects

Consistent part quality

Highly repeatable processes

Shorter cycle times

Less accidents

Process optimization

Increased customer satisfaction

Quicker changeovers

Extended tool and machine life

More energy efficient processes

Less employee turnover

5 Typical Excuses for NOT Training

1 'If we train them, they will just leave.'

Train one employee and they may leave, train your entire workforce and you will always have competent employees to run your facility.

2 'I can't pay for it without a grant.'

If you wait for the government to train your employees, they may never get trained. On average, our customers report a three month payback on their training investment.

3 'I can't convince management.'

Give us a call. We have years of experience in helping companies of all sizes convince management to invest in training their workforce.

4 'We tried training and it didn't work.'

Having machine manufacturers and consultants come in for a day and then leave does not constitute a training initiative.

5 'I don't have the time to train.'

We offer many different training options that will consume minimal time to administer and facilitate.

Payback Calculator

Scrap & Rework Savings Calculations

- | | | |
|----------|----------------------|--|
| A | <input type="text"/> | ← Enter Actual Scrap Rate Percentage |
| B | <input type="text"/> | ← Enter Expected Scrap Rate Percentage |
| C | = A - B | ← Percentage Scrap Rate Improvement |
| D | = C / A | ← Scrap Rate Improvement Factor |
| E | <input type="text"/> | ← Enter Actual Annual Scrap and Rework Losses (in dollars) |
| F | = D × E | ← Actual Scrap and Rework Savings |

Machine and Labor Savings *

- | | | |
|----------|----------------------|--|
| G | <input type="text"/> | ← Enter # of Machines |
| H | <input type="text"/> | ← Enter Hourly Machine and Labor Costs per Machine |
| I | = G × H | ← Hourly Operating Costs in Dollars |
| J | = I × 6000 | ← Annual Operating Costs in Dollars |
| K | <input type="text"/> | ← Enter Actual Downtime Percentage |
| L | <input type="text"/> | ← Enter Expected Downtime Percentage |
| M | = K - L | ← Percentage Downtime Improvement |
| N | = C + M | ← Percentage Machine Time Improvement |
| O | = N / 100 | ← Improvement Factor |
| P | = J × O | ← Annual Machine and Labor Savings |

* Based on 24 hours a day / 5 days a week / 50 weeks a year

“Since we’ve integrated Routsis’ interactive training into our in-house training program, we have realized significant results. A 60 percent reduction in the first year in scrap and rework costs were then followed by an additional 10 to 15 percent per year over the following 3 years.”

Steve Malinoski
Director of Quality & Engineering
Scitech Plastics Group
West Hatfield, MA

Visit www.traininteractive.com/payback
to use our interactive *Payback Calculator*

Plastics Industry Survey Reveals Importance of a Skilled Production Workforce



A comprehensive, industry-wide survey conducted by Plante & Moran, PLLC commissioned by Mid-America Plastics Partners (MAPP) revealed many statistics and conclusions relevant to plastics manufacturing facilities such as yours. The following are excerpts from the in-depth report:

Workforce Development

The key is to have an increasingly talented workforce to keep up with the industry's ever growing complexity. Treat your workforce just as you would any other asset! Invest in talent wisely and do not consume talent on low potential activities or customers. Talent should be treated like the rare jewel it is. (North American Plastics Industry Study - Plastic Processors Report, Plante & Moran, 14, 2005)

Customer Demands	
Average number of customers demanding price reductions annually	7
Price reduction percentage granted to customer on average	4.8%
Percentage of new sales requiring future price reductions	36.7%
<i>Customers have requested and received higher price reductions from the molding community. The impending future price reduction highlights the need for continuous improvement to maintain profitability. (North American Plastics Industry Study, Plante & Moran, 45, 2005)</i>	

Employee Training	
Percentage of operators receiving annual training beyond orientation	75%
Number of annual training hours that a typical individual receives	42
Total dollars (direct costs) spent on training per employee per year	\$215.67
<i>Molding/extrusion is a unique blend of man, machine, and mold/die. We believe you need to have a balanced investment in all three ingredients to optimize the molding/extrusion process. (North American Plastics Industry Study - Plastic Processors Report, Plante & Moran, 59, 2005)</i>	

Unique Processes

Custom molders that embrace unique processing skills have a higher probability of being better equipped than the customer to identify new applications of the process. If the process improves the price, form, fit, or functionality of the product then the custom molder has a temporary advantage over its competitors and its customer. Examples include, in-mold labeling or assembly, co-injection, multi-shot, etc. Custom molders with these skills are more apt to look for existing product that can be converted to this process versus designing new product. The bad news is the process requires significant investment and is only novel for a window of time before the process becomes mainstream. Process skills and product design skills, while still important, are not as important as knowledge of the science of molding. (North American Plastics Industry Study - Plastic Processors Report, Plante & Moran, 71, 2005)

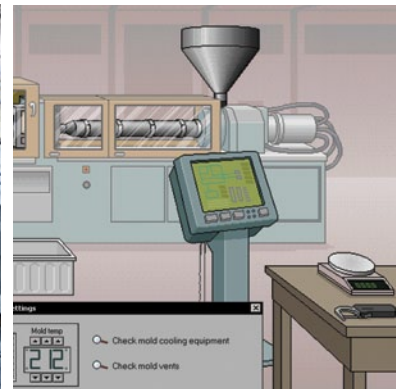
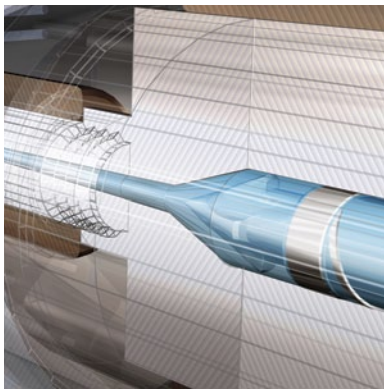
For details on obtaining a copy of this comprehensive, 85 page Benchmarking Survey call MAPP at 317-913-2440, visit www.mappinc.com or e-mail info@mappinc.com.

In-House Training – Making It Work for You

Introducing computer-based interactive training to your facility is the first step. Effective implementation is then required to significantly increase workforce competence. A structured training plan should be devised to ensure that the information being presented is relevant and successfully learned. This plan dictates the overall flow of the in-house training by establishing a realistic pace and does not overwhelm your employees.

Process simulation and supplemental hands-on training can be major contributors in developing a skilled workforce in a timely and cost efficient manner. Process simulation software is an ideal link between the computer and the production floor. Participants develop troubleshooting skills by solving defect scenarios on a virtual molding machine - minus the excess scrap and machine downtime. The employee's actions are closely monitored, allowing the facilitator to evaluate their processing skills and make specific recommendations for areas that need improvement.

After an employee has spent some time at the computer training station, he or she should receive focused hands-on training. This is best done using supplemental task sheets, in conjunction with training materials such as blueprints, processing guides, and machine manuals.



How to Make Your Training Successful

In order to make your training program successful, the objectives of each training session should be clearly defined. Each participant must understand the goal of the training and how it pertains to his/her job. The facilitator must direct the training and steer the participant from one program to the next.

There must also be a way to test a participant's knowledge and progress. Test the participant both before and after a training course. Also, make it easy for the participant to ask questions about each training session. It also helps when each step of the training provides a reward of some kind. One way is to print completion certificates that the participant will receive after successfully passing the assigned training. Another idea is to post the names of participants as each completes a particular course of study.

An effective training program also needs the support of management. Employees will follow management's lead and will develop the same attitude toward training that management has. This is why it's critical to train from the top down.



How to Make Your Training Fail

A training program can fail for a variety of reasons. The most common is lack of direction. When the participant enters the room and the facilitator asks, "What do you want to do today?" the training program is doomed. The facilitator should have each portion of the training program planned, and should always direct the participant to the next step. Training plans detailing employee tasks (interactive, simulation, job activities) and progress should be posted for everyone to see.

Lengthy distractions can also derail a training initiative. Of course, it is fine when a participant wishes to take some time to read over a book or manual for more specific information, or to go and look at a piece of machinery to see what it really looks like. But these brief diversions from the planned program should not take long, and should always serve to enhance the training program.

A training program also fails when participants lose enthusiasm. This can happen for a variety of reasons. Participants need to have their progress measured and reported, and must be congratulated and recognized when they complete a program. They must also be reminded if they fall behind.



10 Requirements You Should Demand from Your Training Provider and How Routsis Addresses Them

"I need training products that apply to what my employees actually do here. I want to purchase what my company needs... and nothing more."

FACT: Most training for the plastics industry is theoretical and does not apply to your operation... we guarantee that the products you buy are going to improve your operation.

"I need a training provider who is willing to come to my plant and teach me how to effectively use the training system. We should have a structured plan in place and ready to train before they leave."

We will show up at your plant, teach you how to get the most out of your in-plant training initiative, and you'll be training production employees before we're out the door.

"I need to ensure that my purchase is supported so I can maintain my training system indefinitely and continuously. Good instructional media, such as DVDs and manuals, must be provided and phone and e-mail support should be available whenever I need it."

We are the only in-house training company who provides instructional DVDs so that the training can be maintained for years to come, even by your future employees.

"I need to know the system I purchased will pay for itself in a timely manner. My vendor should be able to project some figures so I can justify such an investment."

We will help you justify the return on investment... If you do not believe your in-house training program will benefit your company, we're more than willing to implement the training for free and share the returns.

"I need my employees to learn skills that apply directly to my workplace. Along with relevant training materials, I must also receive supplemental on-the-job training materials to expedite the learning process for each employee level."

We're the only in-house interactive training company who provides actual on-the-job training exercises to ensure your employees can apply the training they receive.

"I need the entire production force to utilize the training materials we purchase. I also need a training provider who will help me create a training plan to help ensure this happens."

We're the only in-house interactive training company who provides an actual structured training plan to ensure your employees can actually get trained.

"I need to be able to implement this training system with just the employees I already have. I do not want to hire more employees or send my people out for additional training in order to implement this solution."

We'll come to your plant, show you how to make the system meet your specific needs, and create a training plan which you can maintain with the employees you currently have.

"I need training that teaches my employees the best manufacturing practices in the industry. I need to know that the information my employees learn stresses safety and is up-to-date."

We will help you establish a set of goals for all your production employees... your employees will learn and apply the knowledge to your operation so you can get the most from your machines.

"I need to pay a fair price for my training products and services. I don't want to be hit with any hidden fees for things that were not included."

We assure you that you will get powerful employee skills development training at a fair price that is significantly less than you are currently losing.

"I need training that will improve the attitude and morale of my employees. I need help convincing upper management to get behind the training initiative, 100%."

We can help you identify the return on your training investment and convince management so that your employees will learn to make good parts and really care about doing a good job.

Global Standards for Plastics Certification (GSPC)

A. Routsis Associates has teamed up with Polymer Training Limited, UK (PTL) and Mid-America Plastics Partners (MAPP) to provide the Global Standards for Plastics Certification (GSPC) to the United States. This comprehensive system is being used in dozens of countries across the world, and is quickly being accepted and implemented here in the United States. Originally developed by the UK Government in the 1970's as an apprenticeship qualification, GSPC has evolved through the years to be the most rigorous and comprehensive certification system available to the plastics industry. This is because certification is based on an operator or technician clearly demonstrating their ability – not just passing a multiple choice test.

A Standard Tailored to Your Facility

Although the technical aspects of the standard are fixed, a large percentage of the standard is based on an understanding of your company's specific procedures and policies regarding production, work relations, quality, and safety. When employees become certified, it assures the employer that their workforce has a strong foundation of knowledge, but more importantly the applicable skills which relate directly to the production environment.

Get Your Entire Production Workforce Certified

GSPC certification is a progressive system which starts at Level 1 and progresses up to Level 3. The typical candidates for the appropriate levels are as follows:

Level 1

- Machine Operators
- Material Handlers
- Quality Auditors
- All Production Personnel

Level 2

- Molding Technicians
- Die Setters
- Toolmakers
- Supervisors

Level 3

- Senior Process Technicians
- Senior Toolmakers
- Process Engineers

How Does the GSPC Process Actually Work?

The GSPC system is a robust system that employs a system of checks and balances to ensure that your certified employees meet the international guidelines by which the standard is based. There are three primary people involved in the certification process:

Candidate

Your employees become candidates. The company provides each candidate with their own workbook to prepare them for certification. Through the aid of training, facilitation, and existing plant-specific documentation, the employee obtains the knowledge and competency to fulfill the workbook and ultimately meet the standard.

In-Plant Assessor

As the employee progresses through the workbook, the in-plant assessor periodically tests and approves the employee's progress until he/she believes the candidate is ready to be certified.

Verifier

The verifier ensures the integrity of the standard by visiting the plant and randomly testing the candidates on the material within the workbook using the production floor as the backdrop. Once the candidates show complete compliance, they are approved and receive a certificate for their appropriate level that's internationally endorsed by both PTL and MAPP.

Visit www.traininteractive.com/GSPC
to read more about *Global Certification*

Top 10 Reasons to Become GSPC-Certified

Associations and professions use certification to recognize qualified and competent individuals. The certification process is one of the single most important steps in career development. Here are the top ten reasons a plastics professional should consider becoming GSPC-certified.

1. Certification grants you professional credentials. Since GSPC recognizes your individual accomplishments, it serves as an impartial, third-party endorsement of your knowledge and experience on both a national and international basis.
2. Certification demonstrates your commitment to the plastics industry. Receiving GSPC certification shows your peers, supervisors and, in turn, the general public, your commitment to your chosen career and your ability to perform to set standards.
3. Certification enhances the profession's image. The GSPC program seeks to grow, promote and develop certified professionals, who can stand out as examples of excellence in the plastics industry.
4. Certification reflects achievement. GSPC is a reflection of personal achievement because the individual has displayed excellence in his or her field by meeting global standards and requirements established by the plastics industry.
5. Certification builds self-esteem. GSPC is a step toward defining yourself beyond a job description or academic degree while gaining a sense of personal satisfaction.
6. Certification can improve career opportunities and advancement. GSPC can give you the "edge" when being considered for a promotion or other career opportunities. GSPC clearly identifies you as an employee who has demonstrated competency in specific technical areas based on accepted industry standards.
7. Certification may provide for greater earnings potential. For example, in the automotive industry, car mechanics who have become certified experience salary and wage increases based on their certification status.
8. Certification improves skills and knowledge. Typically, achieving certification requires training, study and the demonstration of applicable skills. GSPC showcases your individual competence by confirming proficiency and knowledge.
9. Certification prepares you for greater on-the-job responsibilities, since GSPC is a clear indicator of your willingness to invest in your own professional development. Certified professionals are aware of the constantly changing technology and environment around their profession and possess the desire to anticipate and respond to change.
10. Certification offers greater recognition from peers. As a certified operator or technician, you can expect increased recognition from your peers for taking that extra step in your professional development.

➔ What are people saying about GSPC?

Here's what some Top Executives are saying about adopting Global Certification for their Operators, Technicians, Die-setters, Mold Makers, and Supervisors.

"My company needed a training system. The GSPC Certification and Standards system is more than we have ever dreamed. We now have documented training standards and the latest technology to train our employees on the technical aspects of their jobs. Above all, we now have a system, governed by an independent body, to verify my company's training protocol and test our employees' progression in improving their knowledge and skills!"

-Rick Green, President, Bourbon Plastics

"This is the missing piece for Metro's training puzzle. We have been looking for a way to tie certification to all of the training we do, and GSPC is the answer. This system is well balanced, very comprehensive, and requires employees to be well rounded; now my employees have a method of building on their technical strengths by learning more about the business side of the operation!"

-Lindsey Hahn, President, Metro Plastics Technologies

"This certification has teeth, and the content of the standards will challenge production employees at all levels in any organization. In the years I've been in this industry, I've never seen a system that standardizes training like this one!"

-Joe Wolf, President, Scottsburg Plastics, Inc.

We Go Above & Beyond the Competition

Routsis is the only plastics training provider who will actually come to your plant. We'll ensure that your training investment gets results.

As the premier interactive training provider for the plastics industry, A. Routsis Associates goes above and beyond anyone else by not only educating your employees, but actually train them as well. We combine comprehensive interactive training, process simulation, and focused on-the-job exercises for each employee level at your facility.

We also offer the most extensive implementation assistance in the industry. This includes facilitator instruction by one of our plastics professionals on how to use, customize, and track the interactive training system.

We ensure that your training gets up and running quickly and offer support via manuals, instructional DVDs, phone and email. We will also install and configure the software on your computer at no additional cost. If you do not have an available computer, we have the latest Dell powered turn-key training stations available.

8 Questions Our Competitors Hope You Never Ask

- 1 Do you employ your own plastics professionals that will come to my plant to devise a structured training plan?
- 2 Do you supply the necessary tools to customize my interactive training?
- 3 Do you provide plant-specific on-the-job training tasks?
- 4 Do you have free additional training resources available to all customers?
- 5 Do you provide instructional DVDs to teach your customers how to setup, configure, and customize the training?
- 6 How long have you provided on-site training assistance?
- 7 How many on-site training assistance visits have your employees performed?
- 8 Will you provide quarterly reviews of the training progress?

Routsis employs their own plastics professionals who have conducted on-site training assistance to more than one-hundred plants across the world over the past 4 years. These professionals also provide quarterly reviews for customers to ensure the training is being used properly and yielding measurable results.

After discussing your training goals and objectives, a structured training plan will be created for each job position being trained. This comprehensive plan includes interactive training, advanced process simulation and plant-specific training materials. Customized task sheets are generated to provide workers with focused on-the-job training exercises to better associate the interactive training with the production environment.

Whether you are just training your machine operators, or conducting a plant-wide training initiative, we can provide as much assistance as necessary to get your training off the ground – including quarterly reviews.

Learn More About Our Comprehensive Training Solutions: Check out our FREE online presentation entitled *Develop a Fully Skilled Workforce* at www.traininteractive.com/skills or contact our office for a set of demonstration CDs.

Visit www.traininteractive.com/cases
to read *Training Assurance Plan Case Studies*

2005 Skills Gap Report

In 2005, Deloitte Consulting LLP performed a comprehensive survey of the North American manufacturing industry which derived many surprising concerns.

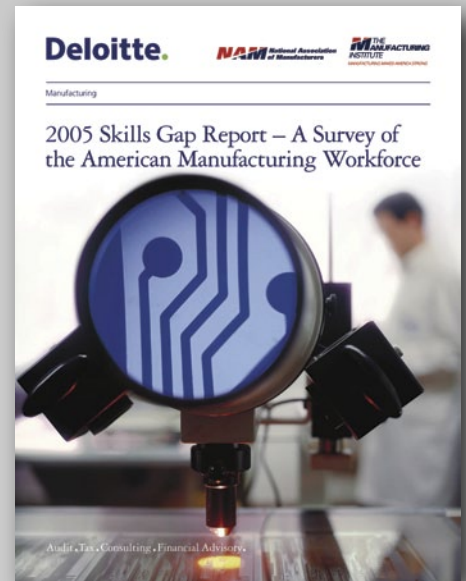
Overwhelming Lack of Skilled Employees

The Skills Gap 2005 Survey found that the vast majority of American manufacturers continue to experience a serious shortage of qualified employees. This has created a significant impact to business and the ability of the country as a whole to compete in a global economy. In fact, **81 percent of respondents answered that they are currently facing a moderate to severe shortage of qualified workers.** (2005 Skills Gap Report – A Survey of the American Manufacturing Workforce, Deloitte Development LLC., 4, 2005)

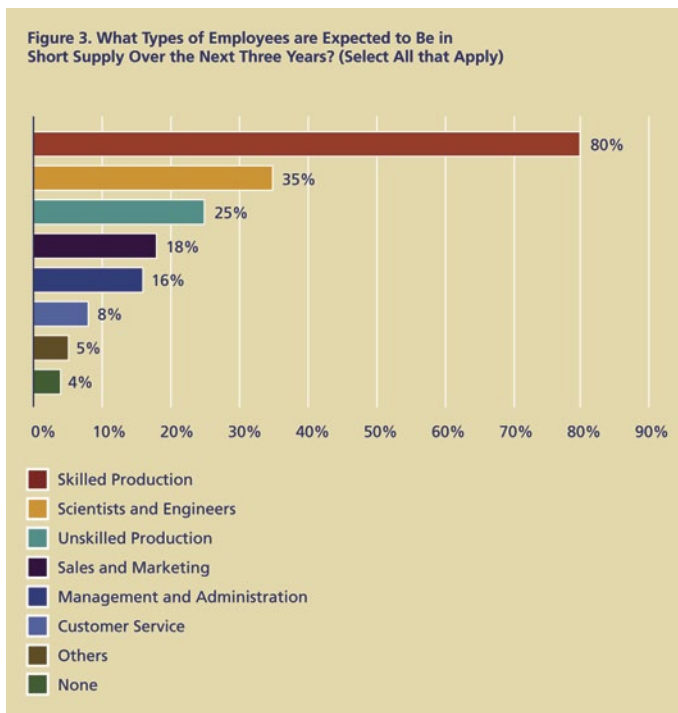
The Need for a High-Performance Workforce

Although many expect that overall employment levels in manufacturing will not rise considerably, 74 percent of respondents indicated that **having a “high-performance workforce” will be the key factor to their business success.** (ibid., 6, 2005)

As the graph below shows, the companies surveyed believed skilled production workers to be in the highest demand in the future.



“81 percent of respondents answered that they are currently facing a moderate to severe shortage of qualified workers.”



(ibid., 7, 2005)

The Need to Invest in Training

Employers should invest at least three percent of payroll whenever possible to provide training opportunities for their current employees, particularly in areas that will enable them to become a high-performance workforce, learn new methods to attract, retain, develop and motivate employees. (ibid., 3, 2005)

For details on obtaining a copy of this comprehensive, 28 page Manufacturing Survey visit www.deloitte.com.

Frequently Asked Questions

Why do I need an in-house training program?

Since it's not logical to send all of your employees away for training, the only viable solution for achieving workforce competence is to establish a structured in-house training plan. The most effective way to reduce scrap, excessive downtime, damaged equipment and customer returns is to improve the skills and confidence of your employees.

What is interactive training?

Interactive training is a computer-based training method in which the information is presented using animation, digital video, titling, and professional narration. During the course, the participant is asked questions which they must answer correctly before they can proceed. If a question is answered incorrectly, the information pertaining to that question is shown again to reinforce the topic being covered.

Can your interactive training courses be customized?

Yes, our interactive training is extremely flexible and courses can be easily customized. The facilitator can insert custom text, digital pictures, audio, and questions. Sections of the courses that may not agree with your plant's mode of operations can be easily turned off. We also give you with a DVD presentation that provides step-by-step instructions on how to customize our courses.

How can simulation software develop troubleshooting skills?

Our simulator, PICAT, is a virtual machine that acts and responds like the real thing. Each simulator provides 64 different defect scenarios in which the employee must make adjustments to the machine, material, or controller to correct the problem, or problems. As the participant progresses to the complex defect scenarios, they develop a more logical approach to troubleshooting as well as more confidence in their abilities. Molding problems can be solved in a faster amount of time and processes can also be fine tuned and optimized.

What support comes with my purchase?

All of our customers receive full support. Each customer has the option to send in their training computer for configuration at no additional charge. This includes loading all of the software and setting up your training station so all you have to do is plug it in. We also provide setup manuals, step-by-step instructional DVDs, and are available via phone and e-mail for both installation and training support. Task templates that correspond to each of the training modules are supplied in Microsoft Word format as sample training plans. Our primary goal is to ensure that your training initiative gets up and running as soon as possible.

What comes with the "Training Assurance Plan"?

First, we will fully configure your interactive training station – including the installation of all the software and entering all your participants data into the program. Second, a plastics trainer will visit your plant and provide thorough instruction on how to use, track and administer the training. Third, you will be provided with a digital camera/audio recording device and instructed on how to use it for customizing your training courses. Lastly, we will gather information about your particular training goals and develop supplemental on-the-job training materials and a plant-specific training plan for all of your employees.

Do your courses cover safety?

Our training courses always stress safety and industry best-practices whenever possible. We also offer a full library of 59 different health and safety courses. Check out our website for a current list of courses, as new programs are constantly being developed.

How do I track my employees' progress?

All of our interactive training programs use CourseWorks™ – the delivery, tracking and monitoring software. Pretests and posttests can be administered to assess an employee's knowledge level before and after taking a course. Passing scores are assigned to ensure that the participants have retained the information before taking another course. CourseWorks™ is ISO and QS compliant, providing detailed results for outputting and review. Our advanced process simulator records every parameter adjustment made during each troubleshooting exercise and uses a 'real-time' clock to calculate what the actual amount of processing time would be.

Does interactive training replace hands-on training?

Although interactive training has many benefits, it can never fully replace the need for instruction on the actual production floor. The drawback is that most hands-on training is typically disorganized, causing employees to receive inconsistent and limited information. We strongly recommend using interactive training in conjunction with focused on-the-job training sessions to keep specific training goals and objectives on track. Our company can provide you with templates for each of our training modules.

How will training reduce employee turnover?

We have found that most employees want to perform better at their jobs but lack the skills and confidence to do so. When supported by management, a structured training initiative shows that the company is committed to its employees and will undoubtedly increase their morale and loyalty.

Is your training up-to-date and relevant?

We have the industry's largest library of interactive courses with over 187 plastics training titles. On average, we produce 6 new courses every 12 months. These courses are developed by plastics experts and emphasize the industry's best-practices. We have relevant training materials that cater to virtually any plastics company.

Can interactive training be used in a classroom environment?

Yes, there are many companies and educational institutions using the software in exactly that capacity. The most effective formula we have seen thus far is when the program is first played over a digital overhead projector, and the students are then allowed to take the training program individually to learn at their own pace.

Can the software be networked?

The software can run on a standalone computer, a local area network (LAN), or a wide area network (WAN) using one of two configurations. The software can be loaded onto each computer with a shared database, or loaded directly onto a server. Please contact one of our service reps for more information or to discuss your specific networking needs.

Do I need to hire a facilitator to run the training program?

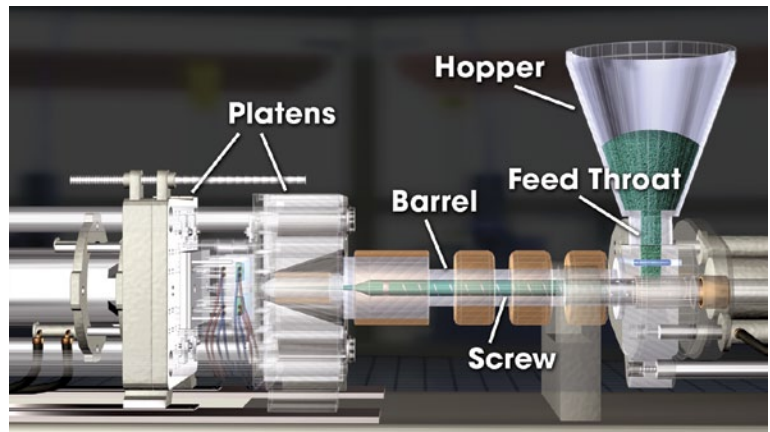
It is not necessary to hire additional employees to train your workforce when training in-house. We recommend choosing two employees to share the task of facilitating and scheduling training. The computer-based interactive training is self sufficient and requires no supervision, just a facilitator to periodically review and monitor participant progress.

Visit www.traininteractive.com/faq
for more answers to frequently asked questions

Training Courses from A. Routsis Associates

We now have *hundreds of interactive training courses available!*

- Injection Molding Basics Series (*also in Spanish, Mandarin, and Euro versions*)
- Production Series
- Advanced Processing Series
- Maintenance Series
- Mold Design and Moldmaking Series
- Plastic Part Design Series
- Health & Safety Series
- SPC/DOE Series
- Blow Molding
- Extrusion
- Blueprint Reading
- Geometric Dimensioning & Tolerancing
- Basic Measuring Tools



+ *New courses are continuously being developed, so check out our website for the latest listing at www.traininteractive.com*



Routsis Training
Hands-on. Online. Ongoing.

www.traininteractive.com



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