Root Causes - Appendix
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Focus Groups: Methodology and Results

Focus Group Methodology

Focus groups were held with a variety of people from both the demand and supply sides. Representatives of companies in each NAICS sector were invited to sessions concentrating on their particular sector. The meetings were held throughout EGR2, according to the following schedule:

Northern Indiana Workforce Investment Board
Strategic Skills Initiative

Root Causes Focus Groups, by NIACS

<table>
<thead>
<tr>
<th>NIACS</th>
<th>Date</th>
<th>County</th>
</tr>
</thead>
<tbody>
<tr>
<td>326</td>
<td>11.10.05</td>
<td>Marshall</td>
</tr>
<tr>
<td>332,333</td>
<td>11.11.05</td>
<td>St. Joseph</td>
</tr>
<tr>
<td>3391</td>
<td>11.15.05</td>
<td>Kosciusko</td>
</tr>
<tr>
<td>622</td>
<td>11.17.05</td>
<td>Elkhart</td>
</tr>
<tr>
<td>All</td>
<td>11.22.05</td>
<td>Fulton</td>
</tr>
<tr>
<td>Suppliers*</td>
<td>11.30.05</td>
<td>St. Joseph</td>
</tr>
<tr>
<td>621</td>
<td>12.01.05</td>
<td>Elkhart</td>
</tr>
</tbody>
</table>

* Suppliers designation includes educators, WorkOne staff, personnel agency staff, and DWD staff.

Suppliers’ representatives, especially WorkOne staff members and trainers/educators, were encouraged to attend, so that they could hear, first hand, what the employers had to say.

Once the participants were gathered and introductions made, the session began with a brainstorming exercise. The facilitator clarified the group’s purpose: “Why do you experience shortages in the occupation(s) identified in SSI Phase 1?”

Three Problem-Solving Tools Used to Process Information:
1. **Brainstorming**

The goal of brainstorming is to generate as many ideas as possible in a fairly brief amount of time. The clear emphasis is on quantity, rather than quality, and additional emphasis is placed on the fact that there are no right or wrong responses. There are three formal rules to brainstorming, designed to enhance the success of the activity:

1. **No criticism** – no ideas are too impractical or too unusual. No participant is allowed to disparage another’s idea.
2. **Equal opportunity** – everybody is encouraged to contribute ideas to the session, and the facilitator may even prompt people to join in if they seem reluctant to voice their opinions.
3. **Piggybacking or hitchhiking** are encouraged. This means that participants are challenged to use someone else’s idea to generate their own.

Each specific idea is written on either a sticky note, i.e. a 3X5 Post-It paper, or a flipchart. The former is by far the better method, since the sticky notes can be easily moved. As an idea is written down by its author, the note is taken and stuck on a convenient wall or dry-erase board. The process is continued until no more ideas seem to be forthcoming.

2. **Affinity Diagrams**

Once the notes have been affixed to the wall, the facilitator directs the participants to go up to the wall and arrange the notes into column, each of which is organized according to what they perceive to be a common theme. This is to be done in silence, since the themes are not identified at this point, and different people may arrange the notes differently. If someone sees that a person has placed a note in a column, but believes it should be elsewhere, they are welcome to move the note…as is the first person welcome to move it back. The goal of this activity is to reach a consensus as to the arrangement of notes. A column of “other” ideas is quite acceptable, and should there be ongoing concern about the placement of particular notes, the facilitator will encourage the group as a whole to make the decision.

Once consensus has been achieved, the facilitator asks the group to assign labels to each of the columns, identifying the theme uniting the different notes. This label must be a phrase, rather than a word, for the purpose of clarity. Generally, discussion will fairly quickly identify the theme, and a label citing that theme is placed at the head of the column. This is repeated for all the columns, and usually there will be between 3 and 6 columns of notes. The graphic
representation of these columns and their headers is an affinity diagram (see diagrams in Appendix).

3. Relational Diagrams

A relational diagram is designed to establish cause-and-effect relationships in a clear and positive way. The process begins by determining causal headers for each affinity column. The header phrases that identify the affinity themes of the columns are written on a board or flipchart.

Now, the facilitator restates the question that is the focus of the session – “Why do you have trouble finding qualified workers in the specific occupations we have identified?” Thinking of that question, the participants construct a diagram that indicates causal relationships. To do this, the facilitator leads the discussion in rather narrow channels. First, one label is selected, and the facilitator directs the conversation about the relationship between that label and each of the other labels. The operating question is, “Does this category influence the other one, or is it influenced by the other?” If the influence is away from the first and toward the second, an arrow is drawn showing the direction of the influence. And if the influence is in the opposite direction, an arrow is drawn that way. If there is no perceived influence of one category on the other, no arrow is drawn, and if the relationship is viewed as mutual, or circular, no arrow is drawn. Once the relations between the first label and all the others have been established by consensus, the facilitator turns to the second label and compares it with all the others, except for the first, which was already decided. Eventually, a diagram showing the relationships between all variables and all other variables will be constructed.

Following this analysis, the facilitator leads the group by simply counting the arrows, and establishing a ratio of arrows pointing in to those pointing away from each label. Thus, a ratio of #in:#out will be written next to each label on the board or chart. When all the ratios have been recorded, they are evaluated. That label having the greatest number of arrows pointing to it is thus identified as the Root Effect, since it is the most influenced by other factors. Similarly, the label having the greatest number of arrows directed away from it has the greatest influence on all the other variables, and hence is the Root Cause. If two labels have the greatest number of arrows pointing away from them, and the ratios are the same, they both are Root Causes. If one has fewer arrows in, however, it is the Root Cause, because it is less influenced by other factors.

Often, participants are surprised by the results of this exploration, and it may be worthwhile to conduct further discussion, so as to understand the meaning of the results in the light of their expectations prior to the exercise. All of our focus
groups experienced this, and while such discussions may never change the identity of the Root Cause, they are frequently lively. Moreover, it is important to analyze the Root Effect as well, since that assignment suggests issues that need to be addressed.

The following constitutes the summation of the focus group analyses; details and raw qualitative data will follow the affinity and relational summaries:¹

AFFINITY DIAGRAM
NIACS 326, Plastics and Rubber Mfg. and Supplier Focus Group Plymouth, IN 11.10.05

Vocational Training Needs
- Training of CNC Operators - inadequate programs
- Funding for training (in general)
- Eli Lilly grant focused on COLLEGE internships, excluded vocational education
- High schools devalue skills training for trades
- Medical entrance exams and classes are too difficult, especially anatomy/physiology
- Lack of clinical sites for medical occup. training

Perceived Compensation Issues
- Employers are impersonal
- Pay scales in area are too low
- Indiana is a poor state
- People are too interested in making the quick buck - jump from job to job
- Health care jobs have difficult work schedules

Vocational Awareness in High School
- H.S. grads don’t know what manufacturing jobs entail
- Inadequate career guidance in H.S.
- H.S. and up students are not aware of needed vocations outside of those needing college
- No more Junior Achievement programs
- Companies don’t go into schools to spread the word about mg. jobs
- H.S. discourage skilled trades, or reserve training for “bad” kids
- H.S. students are not aware of in-house training opportunities in mg. firms.

Attitudes Toward Vocational Skills
- "Manufacturing is not good enough."
- Older workers viewed as lacking skills
- People unwilling to put in time and energy to complete necessary CNC (or other) training.
- Individuals not convinced that manufacturing has a future
- Perceived Compensation Issues
- Employers are impersonal
- Pay scales in area are too low
- Indiana is a poor state
- People are too interested in making the quick buck - jump from job to job
- Health care jobs have difficult work schedules

Cultural Issues
- Gender bias in training and hiring
- Media bias against U.S. manufacturing
- Cultural mindset against mg.
- Lack of parenting skills/classes causes poor work ethic
- Poor language skills, both spoken and written
- Health care stereotypes turn some people off
- Personal values - selfishness, no discipline
Relational Diagram
NIACS 326, Plastics and Rubber Mfg

Vocational Training Needs

Perceived Compensation Issues

Attitudes Toward Vocational Skills

Vocational Awareness in High School

Cultural Issues

ratio 2:0

ratio 1:2

ratio 2:2

Ratio 3:1 = Root Effect
ratio 0:3 = Root Cause

ratio #lines in: #lines out
Greatest number of lines in = Root Effect
Greatest number of lines out = Root Cause
Plastics & Rubber Products Focus Group Meeting Notes
November 10, 2005
Plymouth Chamber of Commerce

Attendees:
Marilyn Miller – Plymouth Foundry       Melissa Denton - GIM
Kelly Gates – Nyloncraft               Gregg Toth - WorkOne
Glenn Hopkins – Ferro Corp             Joyce Graybill - IUSB
Suzie Johnson - Polygon

Review the occupations that have been identified.

The group brainstormed the reason for the shortages. Chuck suggested some possible areas:
- getting to work on time
- HR kinds of relationship employees have with employers
- Education System – deficient in some subject manner
  - Advance math, supervisory courses, type of welding needed for
    For 21st century industry
- Economy
  - Global or national trends – decline in programs producing welders or CDL licenses truck driver
  - Personal – people don’t have the financial resources for adult learners to return to school
- Pipeline
  - Educational system and the sources is somehow bottleneck
    - e.g. certification requiring courses that are more liberal arts, no certification test planned for the next 6 months, supply issue
    - getting people into the job at the right time
- Leakage
  - people leaving the area – unexpected leakage of an occupation
  - personal life – stresses in home life that limit the people’s ability to pursue education opportunities
- Cultural pressures – English as a second language – family culture values
- personal history or experience

Question presented to the group:
What is the occupation most difficult for you to find good people?
- Furnace operator (melt and test medal)
  Knowledge of chemistry and computers required.
Why: It requires a knowledge that most people do not get in a high school education
They would have to pursue in

- CNC
  o To do finishing

Mixers
It is trainable. Skill Set – we look for a work history at least 1 year in manufacturing
Work Ethics
Basic math – decimals
Legible printing
English/Spanish (Communication between employee and employers
Good Supervisors on the floor (no personnel skills in 1-2 day courses)
Organize the product and get it out the door.

WorkOne – Receive request from employers
Welders
CNC Operator – need minimal knowledge of set up
In Health Care
  Certified Nursing Assistant – (CAN)

CNC & Lays
The company mix lays – it is not a difficult task but finding someone to do it without making a mess and take pride in their work. – Skill obtainable with OTJ (on the job training)

Where company is located – before St. Joe, Marshall and Stark. Draw people from all angles but not from South Bend.

From computer and education what is the greatest demand for occupations you find from companies in the field.

IUSB
- Translation (Spanish)– from fast food to manufacturing – Supervisors with
  linguistic skills – increasing need in Marshall County
Con’t Education – Anything health care related – pharmacy tech program
(there is a waiting list) and medical coding

Computer skills are a popular program – Supervision Program

Ivy Tech
- Industrial Demand – programs designed for basic level manufacturing to intermediate – our limitation is only having someplace to conduct the program.

- Calls from outside of the counties – Wabash – looking for CNC, Lay

- Translation – is in high demand Supervisors to meet the need.
  Work Ethics – starting a youth program called “Work Smart)” – Hope it will address the concerns – being offered state wide

- At job fairs – employers say prospective employees don’t know how to dress and lack the soft skills

What is the most basic cause for not being able to find enough qualified/skilled
In the occupations that we need?
- not enough training of CNC Operators in schools
- secondary education in Trade Schools
- High School and above students do not know what opportunities are out there other than college
  - companies do not go into schools to let students know what’s jobs are available in the manufacturing area
  - No availability of Junior Achievement
- More demand than supply and what supply is there - the older workers lack the skills
- Ivy Tech has excellent training program for CNC operators but individuals are unwilling to devote enough time to training – but want the money
  (Need 1 ½ yr to 2 months to become a programmer.)
Is there a strategy to allow them to become skilled in a lesser amount of time. Ivy Tech has a manufacturing training program is intended to get the person started, give them some basic set up and operation skills along with some basic math. The counselor’s job is to convince them to go into college and get a certification or degree in CNC programming.

The region can probably train about 50 individuals per semester (appx 128 hours).

- Individuals are not convinced of the future of manufacturing industries – the future meaning, they are expecting much more pay than what the industries can support.

- High school discourage skilled trades or reserve the skills training for bad kids. Kids that are not smart enough to get into a regular college. They throw them into the manufacturing processing area.

- insufficient previous experience

- Inadequate career guidance for high school students – not aware of possibilities –

- General devaluation of manufacturing jobs (cultural)

- In the past – people retired from the manufacturing jobs – general economic trends. – now young people see where parents have lost their jobs because they went down south where’s its cheaper or doors closed. No loyalty Employers are in personal

- People fall through the cracks for training opportunities. If you are not a dislocated worker and you did not make minimum wage in your last job. And you’re not an ex felon or diversity client – other people who are out of a job and want training but can’t finance it.

- Communication – cultural barriers – misconception of what the Hispanic population is like. Difficult to address the language and cultural issues at the same time.
- High School grads don’t choose manufacturing jobs because they don’t know they can come in and get a skilled labor on the job training and be able to progress in their careers with just coming in and doing some basic line training. Stay on for 6 months and progress on the career ladder. Be more exposed to what manufacturing is all about, so they can be more comfortable choosing this as a career.

- The educational system is focused on ISTEP - Focus is you go to college and You will get a good job. Lack of focus on vocational jobs in South Bend Community School Corporation. People are unaware of in house opportunities.

- Language skills - both written and oral
- Personal values – showing up (attendance)
- You owe me attitude – as soon as they come in the door
- Workers move around for a quick buck – employees not loyal to employers
  And sometimes employers are not loyal to employees
- Soft skills – basic work ethics, show up to work on time – know how to follow instructions – having an interest in your job – wanting to keep it – not just going there for a paycheck. People don’t how to say things and what to say – even in an interview

Cause of people not having soft skills
- parenting - don’t have a strong work ethic in their families
- Eli Lily has grant focused on college internship – IUSB pay interns from his grant. Lack of support

Nursing (coders)

Nursing stereotyped as a female dominated field. Should be more encouragement for more males to choose nursing.

Lack of clinical sites – certain criteria is for clinical – very difficult to get everyone trained.

The schools are blaming the hospitals and the hospitals are blaming the schools.

Lots of people who would like to go into health care but can’t make it through.
Very demanding science courses, Anatomy & Psychology (A&P) Courses extremely difficult. Reason people don’t do well; previous education not sufficient, fear of the academic rigor, not willing to dedicate time and effort

Causes – lack of early career counseling
AFFINITY DIAGRAM

Social Barriers: Family
- Children are being taught entitlement by parents
- Parents don't want their kids in mfg. - "they need better work"
- Two income families mean less discipline - can afford to miss work
- Parents give kids what they want and don't emphasize having to work for it
- Generational differences
- Loss of farming communities means loss of basic values and skills
- Young people lack discipline
- Parents are biased against industry
- Parents are too "soft" on kids

Educational Mismatch
- Lack of vocational programs - jr. and sr. high
- "theory is good, applied is bad" mentality
- Limited exposure to mfg careers
- Core 40 degrades mfg
- Guidance counselors push college
- Testing focus on graduating H.S.; reduces focus on skills

Social Barriers: Public
- Limited career exposure
- Insufficient guidance counseling in schools
- Litigious society reduces interest in mfg
- Society places too much emphasis on professions, too little on mfg

Dysfunctional Values
- Generation Y - do only enough to get by
- Lack of persistence - if it's hard, they give up
- Employees don't value team skills
- Employees feel entitled, not that they need to work for things
- Need for instant gratification
- Lack of personal responsibility
- Employees falsely complain that management never listens
- Greed, drugs, and a lack of pride in who and what they are

NAICS 332 Fabricated Metal
333 Machinery Mfg
South Bend, IN  11.11.05
Relational Diagram
NAICS 332 and 333

ratio 3:0 = Root Effect

Educational Mismatch

Social Barriers: Family

Social Barriers: Public

Dysfunctional Values
ratio 1:2

ratio #lines in: #lines out
Greatest number of lines in = Root Effect
Greatest number of lines out = Root Cause
Attendees:
Tony Veger – Lock Joint Tube         Bonnie Sullivan – Ivy Tech
Jack Isles – Bull Moose Tube         Suzanne Wheeler – Purdue University
Sue Kinnucas – Hoosier Tank          Howard Blackwood - WorkOne
Pam Rubenstein – Allied Specialty Precision Sharon Prusinski - WorkOne
Krysten Shoulders -
Karen Dady – Master Metal Engineering
Mark Melnick – Magnetech Industrial Services
Jamie Stockhouse – Mederal – Mogul
Jinny Longbrake – Memorial Health System

The group discussed the most difficult occupations to fill. The positions have certain skill sets:
- Machinist
- Electric Motor Repair
- Seasoned General Laborers
- Production Workers
- Electrical Maintenance
- Entry Level People with basic math, communication and interpersonal skills
- Skilled CNC Machinist
- Machinist – non CNC Operator
  o To run a manual lathe
  o Create from raw material
- General Laborer
- Respiratory Therapist

A summary of some suggested main points for skills shortages:
- HR Policies too demanding, impersonal, a perception of too structure environment
- Individuals did not receive the proper education/training needed for the job
- The general trends of the economy inhibiting some of the people from getting the training they need.
- Economic issue with area schools having to shut down some programs
- Pipeline / Awareness – the fact or the notion that kids as early as 6/7 grade know what the options may be in terms of vocations may be available in advanced manufacturing.

- High School Counselors aware of job opportunities – an evaluation or favorable vision to have kids prepare for a advanced manufacturing or do high school counselors or teachers tend to devalue these jobs.

- Personal Issues – home life – family demands prohibit people from getting the kinds of skills acquisition they need.

- Cultural Issues
- Individual Values do not promote the kinds of training and work ethical issues
- Regulations and Policies on the federal level – certification is too long, too rigorous
- Policies in terms of state boards for corporation are inhibiting the influx of desirable skills/people.

A summary of the group’s discussion in why there are not enough people being made aware of opportunities in advanced manufacturing:

- Education Funding Cuts – no hands experience - no industrial arts – shop classes are no longer offered in high schools. Some high schools now are getting into Robotics programs. The young people are very excited – but program is not available in most schools.
- Parenting Skills needed– not every kid is cut out for college – parents should be oriented to technical programs.
- 40% turnover for production workers in some companies. Young people do not seem to care about consequences for not coming to work.
- No college training for certain skilled positions (e.g., motor repair). Employers train in house but still have difficulty finding the correct person for the position.
- Our society is putting more emphasis on professional positions instead of manufacturing Technical position. Core 40 and ISTEP are college prep programs being implemented in the high schools and steer students away from manufacturing and technical positions.
- Guidance counselors are unaware of opportunities other than college and do not have enough time to do anything other than scheduling.
- Some young workers lack of discipline
- Social cultural changes that have led people in general away from a certain traditional set of skills. Currently, everything is mechanical reasoning. In the past kids earned how to fix things. They did not have a formal training program, your father taught you how to fix it. Growing up on a farm – you learn basic mechanical and life skills.
- One of the fundamental problems is the educational theory is not right. ISTEP appeals to two types of intelligence; how good is your memory, math and language skills. SBCSC goal is to increase the ISTEP scores.
- Politicians geared towards new opportunities in technology and not the manufacturing industry.
- Media Bias against Manufacturing industry
- Parents dissuade/prevent young people from involvement in manufacturing industry.
- Two family incomes, takes the parent away from the home. While both parents are working, who is watching the babies. Materialism/greed have young people wanting more and more....
- Y Generation have certain values and have the feeling of entitled. Most will not work overtime. The older generation is there when needed to work the overtime. Disintegrate of values.
- The school policies allow students with an excessive amount of excused time off. The young people take this practice to the workforce. Lack of individual responsibility/accountability
- Life skills are not being taught at home
- There is a false premise, if you go to college – you will make more money

The group categorized the sticky notes in the following areas:

- Dysfunctional Value
- Educational Mismatch
- Social Barriers (Family & Public Cultural/Value Mismanagement)
- Soften Values
- Changing Values
- Dimensioning Values
- Change of Society
- Undesirable Social Changes
- Social barriers
- Negative View of Manufacturing Industry

Root Effect: Educational Mismatch
Root Cause: Social Barriers (Family & Public Cultural/Value Mismanagement)

Solutions for critical job skills shortage:
- Develop mentoring programs for young people to see what manufacturing jobs are all about. SE Michigan currently have a very successful program.
AFFINITY DIAGRAM
NIACS 3391, Medical Equipment
Focus Group
Warsaw, IN 11.15.05

Educational System Deficiencies
- High Schools oriented toward 4-year degree
- No programs for polishers
- Lack of funding for technical education
- Insufficient education in skill areas

Regional Trends
- Competition
- Decline in manufacturing industry - job loss

Cultural Attitudes
- Instant gratification mindset
- People don't want to go back to school
- Many workers have a tendency to get "lazy"
- School takes too much time

Inadequate Technical and Language Skills
- Poor math skills
- Unable to use calipers
- No blueprint training
- Lack of training in making measurements
- Some language deficiencies, esp. Hispanics
RELATIONAL DIAGRAM
NAICS 3391, Medical Equipment

Regional Trends

Educational System Deficiencies

Cultural Attitudes

Inadequate Technical and Language Skills

ratio 0:3 = Root Cause

ratio 2:1

ratio 1:2

ratio 3:0 = Root Effect

ratio #lines in: #lines out
Greatest # of lines in = Root Effect
Greatest # of lines out = Root Cause
Perceptions of Manufacturing

- Employers do not respect employees
- Competition is all-important
- Media and school bias against manufacturing
- Perception that manufacturing jobs are unstable
- Brain drain - instead of factory work, leave
- Disgruntled workers go elsewhere

Lack of Educational System support for Manufacturing

- Decline in farming and skills related to it
- Suppression of high-paying jobs in Fulton Co - rumor
- Lack of school administration support for non-college youths.
- Lack of training programs
- No vocational training in high school
- Lack of awareness of available training opportunities (H.S.)
- Teaching to standardized tests doesn't support skills needed in manufacturing
- Manufacturers don't present themselves as having opportunities for college graduates
- Too many kids in schools slip through the cracks, either drop out, or are borderline illiterate
- Educational pass-through, without appropriate skills for next grade
- H.S. students lack awareness of advanced manufacturing opportunities

Erosion of Traditional Values in Younger People

- People no longer plan for a future
- Younger workers don't understand compensation - only pay
- No more worker loyalty to employer
- Workers believe they are entitled to rewards without work
- Workers will not accept structured work schedules
- Workers just don't want to think
- We've forgotten the idea of a day's work for a day's pay
- Too much emphasis on 4-year college programs
- Lack of encouragement to students who are not college material
- County problem with literacy - large numbers of workers can't read or write
RELATIONAL DIAGRAM
Manufacturers, Fulton Co., 11.22.05

ratio #in: #out
Greatest number of lines in = Root Effect
Greatest number of lines out = Root Cause

Perceptions of Manufacturing

Lack of Educational System Support for Manufacturing

Erosion of Traditional Values in Young People

ratio 2:0 = Root Effect
ratio 1:1
ratio 0:2 = Root Cause
**Training Program Problems - Management Level**
- Not enough clinical instructors - all occupations
- No local programs for surgical techs OR respiratory therapists
- Instructors are not paid enough to make the job attractive
- Instructors' skills get "old" unless they remain in clinical setting, and clinicals require FT
- No local school for coders
- Clinical instructors are not knowledgeable of the area they are assigned to teach
- Educational institutions fail to monitor students at clinical sites
- Ultrasound students do not receive hands-on training
- Lack of direct, applicable experience for the job coming out of school
- Not enough clinical slots for students

**Training Program Problems - Student Level**
- Students not attracted to health care work
- Lack of clinical sites causes time constraints for students
- Clinical sites that do exist are limited in what students can learn
- HS emphasis on 4-year degrees - students unaware of 2-year programs
- Coder training requires 95% accuracy - hard to achieve
- Students do not know about certification changes
- Students cannot learn everything they need to know at clinical sites because of insurance restrictions
- In-house training programs take employees from other duties
- New hires usually start on 2nd or 3rd shifts

**Economics of Health Care**
- Demand has outstripped supply
- Temps cause long-term shortages
- Internal struggles within providers wanting RNs but admins want MAs for financial reasons
- With online coding services, competition for coders is now national, and out salaries can't always compete
- People may be aware of coding and RN jobs, but not of the rigors of training

**Cultural Issues**
- RNs don't want their kids going into nursing
- Health care jobs are either deprecated or invisible
- Health care jobs not seen as professional
- Workers don't want to work weekends
- Respiratory therapy has a negative image
- Cultural bias against math and science
- Young people want minimum work for max pay
- Cultural bias towards 4-year college shifts value away from technical programs
- Are health care jobs too strenuous?

---

**NAICS 622 Hospitals**
621 Ambulatory Care
11.17.05
Page 1
AFFINITY DIAGRAM

Financial Issues

- People need to work and cannot afford to go back to school
- Some people cannot begin school without financial aid
- Managed care required providers to do more with fewer resources, increases provider stress
- Prerequisites for nursing programs mean more time is spent in classroom, less in clinicals, at greater expense
- Managed care creates barrier between patients and providers, reduces provider passion for work
- Poor pay for instructors reduces interest in teaching

RELATIONAL DIAGRAM

NAICS 621 and 622

Training Program Problems - Management level

Ratio 2:0 = Root Effect

Training Program Problems - Student Level

Ratio 2:0 = Root Effect

Financial Issues

Ratio 1:0

Cutural Issues

Ratio 0:4 = Root Cause

Economics of Health Care

Ratio 1:2

Ratio #lines in: #lines out
Greatest number of lines in = Root Effect
Greatest number of lines out = Root Cause
Attendees:
Jinny Longbrake – Memorial Hospital
Jackie Neuman – IUSB
Joe Jarboe – Kosciusko Community Hospital
Lynn Eberle – Kosciusko Community Hospital
Nicole Lambert - Kosciusko Community Hospital
Cassie Fox - Kosciusko Community Hospital
Jennifer Straw – St. Joseph Regional Med Center
Marv Yoder – Memorial Hospital
Julian Lewiecki – Memorial Hospital
Kathy Lapierre – Memorial Hospital
Kim Wilcoxson – WorkOne

The group discussed the most difficult occupations to fill:
- Respiratory Therapist
- Registered Nurse
- Transcription
- Coder
- RAD Tech
- Ultra Sound Technologist
- Nuclear Medicine Technologist
- Surgical Technician

Why do these shortages exist:
- 2-3 years ago schools closed down due to federal credentialing changes
- In house training
- Students in high school and other individuals do not know about health care careers
- Better job opportunity somewhere else
- No local training programs
  - Respiratory Therapist – nearest school in Michigan City
  - Surgical Technicians – nearest school in Fort Wayne
  - Too expensive for schools to offer the program
- Image of the profession that people get turned off with
- Health care not viewed as professional occupation
- Increased demand in the area
- Lack of awareness of certain professions/opportunities in the health care industry
e.g., surgical technicians
- Not competitive to other occupations
- Core problem is the whole mind set of a kid coming out of high school going to college. 4 years or 2 years for general degree. A lot of young people do not know what they want. Some specialized fields only require a two year degree.
- High school emphasize 4 year degree – a cultural bias towards college and shift awareness away from technical training.
- Reluctant for in house employees to assist with training students/Lack of mentorship – Lack of involvement with the program to assist students with clinicals.
- School does not prepare individual for working in the workplace. School is only partial. Workplace has its own way of doing things and have to train employee
- Limitation of clinical sites
  - Many facilities willing to offer clinicals during the evenings or weekends
    Due to time constraints this does not always work for the students
- In house training may take Respiratory Therapists away from other duties.
- Practitioners prefer to work with more highly trained individuals
  - Students are limited with hands on training and restricted by what they can do.
    - Insurance limitations with the hospitals
- Because of shortages of experts in specialized areas, Nursing Instructors are not very knowledgeable in specialized areas they are required to teaching – e.g., specialty in Nursing is psychology but they are teaching pregnancy care
- Training programs are unaware of the needs that coders have
- Lack of faculty to teach
  - People that do the work do not feel competent enough to teach others even though they have the necessary skills needed to do the job
  - No Salary incentive
  - No logical track that people can do to become instructors
  - Schools can not have more part time instructors than you have full time
    - More nurses willing to teach, but only want to do it part time
  - Schools pre-requisites are stringent
- Students not motivated to become certified to do job sufficiently
- Nationwide competitive for Coders and Transcriptionist
  o Temporary agencies raising the cost to get quality workers
- People in the health care industry has not done a good job promoting the industry as an attractive industry.
  o Employers worst sales person. A nurse job is a difficult job
    ▪ Some nurses will not recommend career to their children
- Unaffordable tuition for training
- More opportunities for nurses to work in other areas other than the hospital.

The group categorized the issues into phases.

- Educational Programmatic Issues
- Cultural Issues
- Financial Issues
- Economics of Health Care
- Training Deficiencies
- Institutional Deficiencies in Training
- Program Flaws/Lack

Root Effect: Educational Programmatic Issues
Root Cause: Cultural Issues
RELATIONAL DIAGRAM
Supplier Focus Group - Educators,
Workforce Staff, and Staffing Agency
Representatives
11.30.05

Erosion of Traditional
Values Among Young
People

Educational System
Issues...Is it all about
$$?$$

Stress and Structural
Changes in the Family

Cultural Issues - Personal
Values...egoism, distaste for
work, bias against math and
science, media and politician
bias against mfg.

Economic Issues -
Competition, Fragmentation,
Globalization

ratio 3:1

ratio 3:0 = root effect

ratio 1:3

ratio 0:3 = root cause

ratio #lines in: #lines out

greatest #lines in = root effect
greatest #lines out = root cause
Attendees:
Melissa Denton – Ivy Tech Community College
Dawn Feller – Ivy Tech Community College
Nancy Ross – DWD
Kim Wilcoxson – WorkOne
Larry King – WorkOne
Lisa Bohner – Staffing Services
Suzanne Wheeler – Purdue University – TAP
Howard Blackwood – WorkOne
Wendy Hatcher – WorkOne
Deja Ream – WorkOne
Mary Jo Regan–Kubinski – IUSB
Carolyn Fermoyle – IUSB
Tom Primrose – WorkOne
Sonja Matheny – WorkOne
Graig Toth – WorkOne
Dave Brinkruff – Ivy Tech Community College
Jackie Neuman – IUSB
Alonzo Poindexter – JobWorks
Al Hairston – JobWorks

The two goals for the focus group:

Goal 1: TO uncover the root cause of the shortage of workers and skills in key occupation (outcome of 1st Focus Group)

Goal 2: To begin the process of identifying possible solution to the root cause

There are four basic resolutions of the skills and worker shortages in the Health Care Industry

- Training program problems from a management level
- Training program problems from the student level
- Economics of health care and certain issues in the economic sphere that cause constraints because the people they need are not getting there
- Cultural Issues
The occupations are Medical Assistants, Registered Nurses, Coders and Respiratory Therapist, RAD Techs, Surgical Technologist and Ultra Sound Technicians.

From a management point of view in terms of hospital administration, schools and faculty. The problem has to do with finding faculty with appropriate experience and who want to teach. Funding faculty is also an issue. In this area, we are missing programs in Respiratory Therapist. There are all types of issues with clinicals.

Training Program Problem with Students
- not an attractive industry
- finding funding
- rigorous training
- high school do not promote

Issues
- The lack of nursing faculty
- The colleges/university blames hospitals for not having enough facilities for the clinical sites and the hospitals are blaming for the schools saying they do not have enough professors to offer enough classes. The Hospitals blame the schools for not supervising the people at the clinical sites.
- Faculty must have a MSN or PhD to teach in the either the Associate Degree or the Bachelors program. An LPN program can be taught by a BSN Registered Nurse.
- People waiting to get into the nursing program and get tired of waiting. Some try to get clerical jobs in the nursing industry until they are able to get into the nursing programs.
- The ladder into the nursing for people who are waiting is to be a Certified Nursing Assistant. You can get patient experience. Move you up the ladder to get into the nursing program.
- WIA funding cannot fund Registered Nurses or MA. The further they can fund are CNAs and Phlebotomy. The service provider has a cap of $5,000 for training.
- Increase male interest into the profession
- No glamour in the medical industry
- Nurses need a public relations campaign
- Employer and Employee loyalty
- Not a good media perception of the manufacturing and health care industries
Manufacturing Industry Problems
- Education System – Mismatch
- Family Issues
- Generation X issues
- Cultural Issues

Causes
- Erosion of traditional values
- Stress and structural change in the family
- Education System Issues – is it all about the money
- Economic Issues – Competition, globalization
- Cultural Issues – “Me First”

Dan’s Board NOTES:

Causes – Health Care

Lack of Nursing Faculty

Finding faculty – most critical – salary compression

BSN Make almost as much as MSN level pay

Not enough MSN to teach

MSN’s earn more than in practicing team clinicals

Solution: Increase nursing faculty salary by 50%

Minor – manikins

CNA – RN – Pay for cost – aval CNA’s for this (see Phil)

Johnson/Johnson Campaign – visibility of nurses

Nursing 2000 – to expose career opportunity
ROOT CAUSE: Economic Issues

ROOT EFFECT: Educational System

SOLUTIONS:

- Advertise and develop public relations program to change the image of manufacturing and health care industry. In Virginia it’s called the other 4 year degree

- Become a maintenance person in a manufacturing company (another 4 year program)

- Create entry level ladders

- Kalamazoo incentive plan for individuals to attend college

- Create partnerships with companies – strengthen commitment if they are trained will you hire them?

- Mentoring

Dan informed the group that would like to have a combined focus group meeting for suppliers and customers. He asked for help in getting employers to this summit.

A survey is being sent out to Manufacturing and Health Care Employees.

Julie Neuman offered to get some people from Elkhart County attend this meeting

Dawn Feller is willing to hand deliver letter to companies who she already has an established relationship with.
Surveys and Results

The Northern Indiana SSI team conducted six (6) sets of surveys, to a variety of EGR2 employee, employer, and educational/training institution groups:

1. Employee Feedback survey
2. Human Resource Managers survey
3. Post-Secondary Student survey
4. Post-Secondary Institutional surveys
5. Secondary School data surveys
6. Secondary Student survey

The surveys of Secondary Students and Post-Secondary Students were distributed in person by NIWIB research assistants, and then were collated by those assistants and summarized electronically. The Employee Feedback Surveys were distributed by the Human Resource departments of the organizations offering to participate in the survey, along with a SASE, and the participating employees completed the survey and mailed it back to a local research organization, which tabulated and compiled the results, a portion of which are reported below. Altogether, 1078 manufacturing employee surveys were returned, a return rate of 30.0%. In addition, 396 health care employee surveys were returned, a return rate of 28.5%. Thus, the results of these surveys can be considered statistically significant for EGR2 as a whole.

The other surveys, those addressing human resource and retention issues, those soliciting information as to secondary vocational/technical course offerings, and those investigating the program capacity/enrollment/graduation rates and dropout rates of EGR2 higher educational institutions, were conducted via the Internet.

Additional data about EGR2 schools, both secondary and post-secondary, were acquired via the Internet, as cited in the sections of this Appendix.

The goal of the various surveys was to gather and assess the opinions of people at different locations in the pipeline as to their perceptions of manufacturing and health care occupations, their awareness of the particular occupations and skills identified in the Shortage Report, and their perceptions of the root causes of those shortages.
The data for this report was gathered from 1,445 completed questionnaires, which had been distributed to the employees of various organizations in St. Joseph, Elkhart, Marshall and Kosciusko counties of Indiana. Completed questionnaires were returned to Midwest Marketing Research either via MMR’s business reply envelopes or via overnight delivery from the organizations. 1,390 questionnaires were distributed to the employees of four hospitals within the geographic area and 3,602 questionnaires were distributed to the employees of twenty industrial firms in the same area. 396 returns were received for the hospital group, which was a 28.5% response rate. 1,078 returns were received for the industrial group, which was a 30% response rate. The survey was conducted from November 23, 2005 through December 15, 2005.

The data from each question on the questionnaire was tabulated. Selected additional cross-tabulations were completed for all organizations, job types and occupational sectors.

The margin of error when analyzing all responses for the industrial survey is plus or minus 2.75%. The margin of error when analyzing all responses for the medical survey is plus or minus 4.5%.

The questionnaire was created by representatives of the Northern Indiana Workforce Investment Board.
Employee Feedback Survey

Purpose: To provide an understanding of the causes for critical skill shortages from an employee point of view. To prepare for implementing solutions - attacking the causes and alleviating the shortages.

Private: Workforce Investment Board (WIB) provides the survey, as a word document by e-mail (or hand delivered to you). Self addressed, stamped envelopes will be sent to you from Midwest Marketing Research. Midwest Marketing Research receives and tallies all individual surveys, and produces a specific report available to your organization and Workforce Investment Board. An overall report will also be available for your industry sector.

Process: 1. WIB provides the Employee Feedback Survey to you. 2. Midwest Marketing Research sends, overnight the number of stamped, return envelopes to your attention. 2. You ask them to quickly fill out, (note deadline on survey of Friday December 9th) place in the sealed envelope and mail. 3. Midwest Marketing Research number crunches and analyzes. 4. We send you the results and invite you to a meeting to review all root cause findings as a result of reviewing literature, managerial focus groups and the employee survey. The meeting will be held on December 20th, 2005 from 8:00 to 10:00 AM, at Swan Lake, Plymouth, IN. Please make reservations with Barbara White, our Office manager at 547-2380 ext. 234.

Cost to You: None

Survey Questions: See handout attached.
Northern Indiana Workforce Investment Board
Industrial Employee Feedback Survey

1. What is your occupation?  
   __welder (514121) __first-line supervisor (511011)  
   __transportation equip painter (519122) __CNC operator (514011)  
   __truck driver (533032) __industrial engineering tech (173026)  
   __polisher (519000) __other(specify)____________________ (100000)

2. What led you to decide to work at this occupation? (circle all that apply)  
   A. Father or other relative had a similar job.  
   B. High school guidance counselor or teacher suggested it.  
   C. A friend had this or a similar job.  
   D. Answered a want ad that sounded interesting.  
   E. Don’t know, just ended up in this occupation.

3. In high school, did you learn the skills you needed for this job? (circle one)  
   A. Yes    D. No  
   B. Some of them    E. School was a start, but I needed a lot of on-the-job training.  
   C. I went to a technical program specializing in this occupation.

4. What did you NOT learn in school that you needed for the job? (circle one)  
   A. Math    D. Reading detailed paperwork, like a chart, drawing, or print.  
   B. Computer skills    E. How to use measuring instruments.  
   C. Discipline    F. Other ________________________________________

5. Do new hires in this job know what they need to know? (circle one)  
   A. Yes, pretty much.  
   B. No, they need some training.  
   C. No, because they don’t pay enough to attract good workers.  
   D. No, because they don’t treat their employees very well.  
   E. No, because there aren’t enough good workers in the occupations we need.

6. Are there enough people doing what you do to keep you from being overwhelmed by work? (circle one)  
   A. Yes, we have a lot of good, well-trained people working here.  
   B. No, because they don’t pay enough to attract good workers.  
   C. Yes, if my company would pay me for the time it takes to get the training.

7. Would you be interested in getting some training to move up to a higher level position? (circle one)  
   A. No, I’m at the level I want to be.  
   B. No, more training would take too much time and money.  
   C. Yes, if the company or some program paid for it.  
   D. Yes - and I would pay for it if I could be certain of getting a better-paying job.  
   E. Yes, if my company would pay me for the time it takes to get the training.

8. Does your employer hire and keep good workers? (circle one)  
   A. Yes, we have a lot of good, well-trained people working here.  
   B. Yes, but it seems to be a real struggle to find good workers.  
   C. No, because they don’t pay enough to attract good workers.  
   D. No, because they don’t treat their employees very well.  
   E. No, because there aren’t enough good workers in the occupations we need.

9. If you had to do it all over, what would you do? (circle one)  
   A. I would work at the same occupation.  
   B. I would go further in school in order to improve my chances for a better job.  
   C. I would get more technical training in order to become more skilled.  
   D. I would go to college.  
   E. I would look for a different occupation.

10. Please indicate the range in which your age falls:  
    ___20-29 ___30-39 ___40-49 ___50-59 ___60+

11. Please write any solutions you have for skills shortages on the back of this paper.
Northern Indiana Workforce Investment Board
Medical Employee Feedback Survey

Circle Answer:

1. What is your occupation?  
   A. Medical assistant  E. Radiologic tech  
   B. Registered nurse  F. Surgical tech  
   C. Respiratory therapist  G. Other (specify)_____________________
   D. Records tech/coder

2. What led you to decide to work at this occupation? (circle all that apply)  
   A. A relative or friend had a similar job.  
   B. High school guidance counselor or teacher suggested it.  
   C. I was always interested in health care professions.  
   D. I had some experience at lower-level health care jobs and decided to move up.  
   E. Don’t know, just ended up in this occupation.

3. In school/college, did you learn the skills you needed for this job?  (circle one)  
   A. Yes  D. No  
   B. Some of them.  E. School was a start, but I needed a lot of on-the-job training.  
   C. My education prepared me for this occupation very well.

4. What did you NOT learn in school/college that you needed for the job?  (circle one)  
   A. Communications skills  D. Reading detailed paperwork, like a chart.  
   B. Computer skills  E. How to use the technology I use on the job.  
   C. Discipline/motivation  F. Other _______________________________________

5. Do recent graduates in this job know what they need to know?  (circle one)  
   A. Yes, pretty much.  D. Yes, but only the basics.  
   B. No, they need some training.  E. No, they need a lot of training.  
   C. They arrive with a certification or degree that has prepared them adequately.

6. Are there enough people doing what you do to keep you from being overwhelmed by work? (circle one)  
   A. My employer doesn’t have any trouble finding people to work in this occupation.  
   B. My employer has trouble finding workers who can do what I do.  
   C. There seems to be a general shortage of workers in this occupation in the area.  
   D. There are plenty of people around who can do this work, but they are not applying here.  
   E. There aren’t enough training programs to meet the demand for people in this occupation

7. Would you be interested in getting some additional training/education to move up to a higher level position?  (circle one)  
   A. No, I’m at the level I want to be.  
   B. No, more training would take too much time and money.  
   C. Yes, if my employer or some program paid for it.  
   D. Yes - and I would pay for it if I could be certain of getting a better-paying job.  
   E. Yes, if my company would pay me for the time it takes to get the training.

8. Does your employer hire and keep good workers in your occupation?  (circle one)  
   A. Yes, we have a lot of good, well-trained people working here.  
   B. Yes, but it seems to be a real struggle to find good workers.  
   C. No, because they don’t pay enough to attract good workers.  
   D. No, because they don’t treat their employees very well.  
   E. No, because there aren’t enough good workers in the occupations we need.

9. If you had to do it all over, what would you do?  (circle one)  
   A. I would work at the same occupation.  
   B. I would go further in school in order to improve my chances for a higher level job.  
   C. I would get more technical training in order to become more skilled.  
   D. I would take more college courses.  
   E. I would look for a different occupation.

10. Please indicate the range in which your age falls:  __20-29 __30-39 __40-49 __50-59 __60+

11. Please write any solutions you have for skills shortages on the back of this paper.
Northern Indiana Workforce Investment Board
Employee Feedback Survey Results

Executive Summary

The purpose of this survey was to determine the job skill and training needs of the medical and industrial workforce in St. Joseph, Elkhart, Marshall and Kosciusko counties.

Selected Results – Industrial Combined

58% of all responses were from the transportation equipment sector while 20% came from fabricated metal products and 18% came from plastics and rubber products.

20 employers responded with 56% of the responses coming from 3 of those 20 employers.

The most frequently reported job type was “other” at 62% followed by CNC Operator at 13%, First-Line Supervisor at 11%, Welder at 8% and Painter at 3%. Among the “other” responses, assembly, group leader, general labor or production, machine operator, material handler, packer, press operator and shipping were among the most frequent responses.

39% of all respondents said they didn’t know what led them to select their current occupation while 27% said a friend had held a similar job, 17% said a relative had held a similar job and 13% had answered an interesting ad.

43% of respondents indicated that they had not learned the skills needed for their job in high school while 23% felt they had received some of those skills, 18% said they needed on the job training and 13% felt they had learned the skills needed while in high school.

33% of respondents said they did not learn computer skills in school while 24% referred to “other” skills not learned, 17% named reading drawings and prints, 14% named using measurement instruments, 6% named discipline and 5% named math. Among the “other” responses were “people skills” and “English” – most other responses indicated that the respondent had not learned the requisite skill for whichever job they now held.

69% of respondents indicated that new hires to the job need either some or a lot of training in order to perform their job. 21% of respondents felt that the new
hires knew what they needed to know, but only the basics. 9% felt that new hires came with all the training required.

36% of respondents thought that their company had no trouble finding employees while 23% thought that their employer did have trouble. 18% felt that there was no worker shortage but that people were not applying for jobs and 14% felt that there was a general shortage of workers. 8% indicated that there were not enough training programs.

40% of respondents were interested in getting more training so they could move up if their employer paid for it while 24% were interested if their company paid for their time to pursue further education. 18% were satisfied with their current job level, 15% said they would pay their own way and 2% felt that pursuing more education required too much time and money.

69% of respondents felt that their employer hired and kept good workers although 40% of those respondents said it was a struggle to find those employees. 16% of respondents felt that their employer did not pay enough, 10% felt that employees in their company were not treated well and 4% thought that there were not enough good workers at their company.

If they had it to do over again, 38% of respondents would get more schooling, 19% would get more technical training, 17% would go to college, 16% would work at the same occupation and 10% would look for a different occupation.

78% of the respondents were evenly distributed by age between 20 and 49 years of age. 18% fell into the 50-59 category and 3% were 60 and over.

Cross-Tabulation of Results By Job Type – First-Line Supervisors

60% of respondents came from the transportation equipment segment while 27% came from fabricated metal products and 10% came from plastics and rubber products.

This job type was proportionately distributed among all 20 employers.

32% of all respondents said they didn’t know what led them to select their current occupation while 20% said a friend had held a similar job, 30% said a relative had held a similar job and 13% had answered an interesting ad. 5% mentioned a school counselor/teach suggested it.

31% of respondents indicated that they had not learned the skills needed for their job in high school while 31% felt they had received some of those skills, 28% said
they needed on the job training and 8% felt they had learned the skills needed while in high school.

60% of respondents said they did not learn computer skills in school while 9% referred to “other” skills not learned, 21% named reading drawings and prints, 3% named using measurement instruments, 6% named discipline and 0% named math. Among the “other” responses were “people skills” and “leadership skills”.

79% of respondents indicated that new hires to the job need either some or a lot of training in order to perform their job. 15% of respondents felt that the new hires knew what they needed to know, but only the basics. 5% felt that new hires came with all the training required.

24% of respondents thought that their company had no trouble finding employees while 34% thought that their employer did have trouble. 17% felt that there was no worker shortage but that people were not applying for jobs and 17% felt that there was a general shortage of workers. 9% indicated that there were not enough training programs.

37% of respondents were interested in getting more training so they could move up if their employer paid for it while 16% were interested if their company paid for their time to pursue further education. 34% were satisfied with their current job level, 12% said they would pay their own way and 1% felt that pursuing more education required too much time and money.

69% of respondents felt that their employer hired and kept good workers although 58% of respondents said it was a struggle to find those employees. 21% of respondents felt that their employer did not pay enough, 3% felt that employees in their company were not treated well and 7% thought that there were not enough good workers at their company.

If they had it to do over again, 29% of respondents would get more schooling, 20% would get more technical training, 27% would go to college, 14% would work at the same occupation and 9% would look for a different occupation.

Cross-Tabulation of Results By Job Type – CNC Operators

44% of respondents came from the transportation equipment segment while 31% came from fabricated metal products and 4% came from plastics and rubber products. 22% came from miscellaneous manufacturing – medical.

This job type was present among one-third of the 20 employers.
28% of all respondents said they didn’t know what led them to select their current occupation while 31% said a friend had held a similar job, 18% said a relative had held a similar job and 19% had answered an interesting ad. 4% mentioned a school counselor/teach suggested it.

38% of respondents indicated that they had not learned the skills needed for their job in high school while 25% felt they had received some of those skills, 16% said they needed on the job training and 16% felt they had learned the skills needed while in high school.

39% of respondents said they did not learn computer skills in school while 8% referred to “other” skills not learned, 19% named reading drawings and prints, 20% named using measurement instruments, 6% named discipline and 8% named math. Among the “other” responses, there were significant recurring responses.

70% of respondents indicated that new hires to the job need either some or a lot of training in order to perform their job. 20% of respondents felt that the new hires knew what they needed to know, but only the basics. 10% felt that new hires came with all the training required.

21% of respondents thought that their company had no trouble finding employees while 31% thought that their employer did have trouble. 18% felt that there was no worker shortage but that people were not applying for jobs and 21% felt that there was a general shortage of workers. 10% indicated that there were not enough training programs.

42% of respondents were interested in getting more training so they could move up if their employer paid for it while 23% were interested if their company paid for their time to pursue further education. 7% were satisfied with their current job level, 25% said they would pay their own way and 2% felt that pursuing more education required too much time and money.

69% of respondents felt that their employer hired and kept good workers although 38% of respondents said it was a struggle to find those employees. 19% of respondents felt that their employer did not pay enough, 10% felt that employees in their company were not treated well and 5% thought that there were not enough good workers at their company.

If they had it to do over again, 42% of respondents would get more schooling, 18% would get more technical training, 13% would go to college, 17% would work at the same occupation and 10% would look for a different occupation.
Cross-Tabulation of Results By Job Type – Painters (Transportation Equipment)

91% of respondents came from the transportation equipment segment while 9% came from fabricated metal products.

This job type was present predominantly among 2 of the 20 employers.

34% of all respondents said they didn’t know what led them to select their current occupation while 16% said a friend had held a similar job, 22% said a relative had held a similar job and 22% had answered an interesting ad. 6% mentioned a school counselor/teach suggested it.

47% of respondents indicated that they had not learned the skills needed for their job in high school while 28% felt they had received some of those skills, 13% said they needed on the job training and 6% felt they had learned the skills needed while in high school.

21% of respondents said they did not learn computer skills in school while 41% referred to “other” skills not learned, 3% named reading drawings and prints, 14% named using measurement instruments, 10% named discipline and 10% named math. Among the “other” responses was “how to paint”.

66% of respondents indicated that new hires to the job need either some or a lot of training in order to perform their job. 22% of respondents felt that the new hires knew what they needed to know, but only the basics. 13% felt that new hires came with all the training required.

32% of respondents thought that their company had no trouble finding employees while 16% thought that their employer did have trouble. 32% felt that there was no worker shortage but that people were not applying for jobs and 19% felt that there was a general shortage of workers. 0% indicated that there were not enough training programs.

31% of respondents were interested in getting more training so they could move up if their employer paid for it while 25% were interested if their company paid for their time to pursue further education. 13% were satisfied with their current job level, 28% said they would pay their own way and 3% felt that pursuing more education required too much time and money.

63% of respondents felt that their employer hired and kept good workers although 41% of respondents said it was a struggle to find those employees. 31% of respondents felt that their employer did not pay enough, 3% felt that
employees in their company were not treated well and 3% thought that there were not enough good workers at their company.

If they had it to do over again, 44% of respondents would get more schooling, 16% would get more technical training, 13% would go to college, 16% would work at the same occupation and 13% would look for a different occupation.

Cross-Tabulation of Results By Job Type – Welders

49% of respondents came from the transportation equipment segment while 48% came from fabricated metal products.

83% of this job type was distributed among 4 of the 20 employers.

35% of all respondents said they didn’t know what led them to select their current occupation while 31% said a friend had held a similar job, 11% said a relative had held a similar job and 11% had answered an interesting ad. 12% indicated that a school counselor or teacher had suggested it.

48% of respondents indicated that they had not learned the skills needed for their job in high school while 21% felt they had received some of those skills, 13% said they needed on the job training and 12% felt they had learned the skills needed while in high school.

23% of respondents said they did not learn computer skills in school while 27% referred to “other” skills not learned, 29% named reading drawings and prints, 9% named using measurement instruments, 9% named discipline and 3% named math. Among the “other” responses was “welding”.

66% of respondents indicated that new hires to the job need either some or a lot of training in order to perform their job. 26% of respondents felt that the new hires knew what they needed to know, but only the basics. 9% felt that new hires came with all the training required.

43% of respondents thought that their company had no trouble finding employees while 25% thought that their employer did have trouble. 16% felt that there was no worker shortage but that people were not applying for jobs and 8% felt that there was a general shortage of workers. 7% indicated that there were not enough training programs.

38% of respondents were interested in getting more training so they could move up if their employer paid for it while 32% were interested if their company paid for their time to pursue further education. 12% were satisfied with their current
job level, 18% said they would pay their own way and 1% felt that pursuing more education required too much time and money.

60% of respondents felt that their employer hired and kept good workers although 29% of respondents said it was a struggle to find those employees. 29% of respondents felt that their employer did not pay enough, 7% felt that employees in their company were not treated well and 4% thought that there were not enough good workers at their company.

If they had it to do over again, 40% of respondents would get more schooling, 19% would get more technical training, 15% would go to college, 18% would work at the same occupation and 7% would look for a different occupation.

Selected Results – Medical Combined

Four hospitals responded with 74% of the responses coming from one of those four hospitals.

The most frequently reported job type was registered nurse at 58% followed by medical assistant at 12%, respiratory therapist at 8% and records tech/decoder at 4%.

When asked what led them to select their current occupation, 54% of all respondents said they had always been interested in health care while 16% said they had prior experience and moved up, 15% said a relative had held a similar job and 9% didn’t know. 5% mentioned suggestions from a high school counselor or teacher.

34% of respondents indicated that they learned the skills needed for their job in school/college while 25% said they needed on the job training, 20% said they learned some of the necessary skills in school/college and 15% felt that school had prepared them well for the job.

32% of respondents said they did not learn computer skills in school while 27% mentioned using technology needed for the job, 23% named “other” skills, 9% named communication skills, 7% named reading detailed paperwork and 2% named discipline/motivation. Among the most frequently mentioned “other” responses were “organizational skills”, “prioritizing”, “hands on experience”, “specialization” and “real world experience with real patients”.

52% of respondents indicated that new graduates have the training they need in order to perform their job although 39% said the new graduates know only the
basics. 21% of the respondents felt that the new graduates still need some training, and 23% felt that they need a lot of training.

43% of respondents thought that there is a shortage of workers and another 22% thought their employer had trouble finding workers. 21% felt that their employer had no trouble finding workers. 8% said there was no shortage but people were not applying and 6% indicated that there were not enough training programs.

42% of respondents were interested in getting more training so they could move up if their employer paid for it while 29% were satisfied with their current level. 15% said they would be interested if their hospital paid for their time to pursue further education while 10% said they would pay their own way and 5% felt that pursuing more education required too much time and money.

75% of respondents felt that their employer hired and kept good workers although 30% of respondents said it was a struggle to find those employees. 10% of respondents felt that their employer did not pay enough, 11% felt that employees in their hospital were not treated well and 4% thought that there were not enough good workers at their hospital.

If they had it to do over again, 45% of respondents would work at the same occupation, 28% would get more schooling, 18% would look for a different occupation, 6% would get more technical training and 3% would take more college courses.

62% of respondents were over 40 years of age while 38% were under 40.

Cross-Tabulation of Results By Job Type – Medical Assistants

When asked what led them to select their current occupation, 65% of all respondents said they had always been interested in health care while 13% said they had prior experience and moved up, 6% said a relative had held a similar job and 12% didn’t know. 4% mentioned suggestions from a high school counselor or teacher.

40% of respondents indicated that they learned the skills needed for their job in school/college while 19% said they needed on the job training, 23% said they learned some of the necessary skills in school/college and 16% felt that school had prepared them well for the job.

19% of respondents said they did not learn computer skills in school while 33% mentioned using technology needed for the job, 19% named “other” skills, 8%
named communication skills, 17% named reading detailed paperwork and 3% named discipline/motivation. Among the “other” responses there was no one dominant need.

63% of respondents indicated that new graduates have the training they need in order to perform their job although 29% said the new graduates know only the basics. 29% of the respondents felt that the new graduates still need some training, and 7% felt that they need a lot of training.

45% of respondents thought that their employer had no trouble finding people, 26% felt that there is a shortage of workers and another 19% thought their employer had trouble finding workers. 10% said there was no shortage but people were not applying and 0% indicated that there were not enough training programs.

62% of respondents were interested in getting more training so they could move up if their employer paid for it while 26% were interested if their hospital paid for their time to pursue further education. 7% said they would pay their own way and 2% felt that pursuing more education required too much time and money. 2% were satisfied with their current level.

77% of respondents felt that their employer hired and kept good workers although 28% of respondents said it was a struggle to find those employees. 16% of respondents felt that their employer did not pay enough, 5% felt that employees in their hospital were not treated well and 2% thought that there were not enough good workers at their hospital.

If they had it to do over again, 73% of respondents would get more schooling, 18% would work at the same occupation, 5% would look for a different occupation, 5% would get more technical training and 0% would take more college courses.

**Cross-Tabulation of Results By Job Type – Registered Nurses**

When asked what led them to select their current occupation, 55% of all respondents said they had always been interested in health care while 17% said they had prior experience and moved up, 18% said a relative had held a similar job and 6% didn’t know. 4% mentioned suggestions from a high school counselor or teacher.

32% of respondents indicated that they learned the skills needed for their job in school/college while 29% said they needed on the job training, 21% said they...
learned some of the necessary skills in school/college and 14% felt that school had prepared them well for the job.

35% of respondents said they did not learn computer skills in school while 27% mentioned using technology needed for the job, 22% named “other” skills, 8% named communication skills, 5% named reading detailed paperwork and 1% named discipline/motivation. Among the most frequently mentioned “other” responses were “organizational skills”, “time management”, “prioritizing” and “real world experience with real patients”.

51% of respondents indicated that new graduates have the training they need in order to perform their job although 43% said the new graduates know only the basics. 17% of the respondents felt that the new graduates still need some training, and 32% felt that they need a lot of training.

46% of respondents thought that there is a shortage of workers and another 23% thought their employer had trouble finding workers. 21% felt that their employer had no trouble finding workers. 4% said there was no shortage but people were not applying and 5% indicated that there were not enough training programs.

38% of respondents were interested in getting more training so they could move up if their employer paid for it while 34% were satisfied with their current level. 12% said they would be interested if their hospital paid for their time to pursue further education while 9% said they would pay their own way and 7% felt that pursuing more education required too much time and money.

73% of respondents felt that their employer hired and kept good workers although 27% of respondents said it was a struggle to find those employees. 10% of respondents felt that their employer did not pay enough, 14% felt that employees in their hospital were not treated well and 2% thought that there were not enough good workers at their hospital.

If they had it to do over again, 54% of respondents would work at the same occupation, 20% would get more schooling, 18% would look for a different occupation, 5% would get more technical training and 2% would take more college courses.

Cross-Tabulation of Results By Job Type – Respiratory Therapists

When asked what led them to select their current occupation, 47% of all respondents said they had always been interested in health care while 18% said they had prior experience and moved up, 13% said a relative had held a similar
job and 16% didn’t know. 5% mentioned suggestions from a high school counselor or teacher.

46% of respondents indicated that they learned the skills needed for their job in school/college while 27% said they needed on the job training, 10% said they learned some of the necessary skills in school/college and 17% felt that school had prepared them well for the job.

33% of respondents said they did not learn computer skills in school while 37% mentioned using technology needed for the job, 13% named “other” skills, 7% named communication skills, 7% named reading detailed paperwork and 3% named discipline/motivation. There was no one “other” response that predominated.

70% of respondents indicated that new graduates have the training they need in order to perform their job although 47% said the new graduates know only the basics. 27% of the respondents felt that the new graduates still need some training, and 3% felt that they need a lot of training.

53% of respondents thought that there is a shortage of workers and another 17% thought their employer had trouble finding workers. 0% felt that their employer had no trouble finding workers. 23% said there was no shortage but people were not applying and 7% indicated that there were not enough training programs.

27% of respondents were interested in getting more training so they could move up if their employer paid for it while 37% were satisfied with their current level. 23% said they would be interested if their hospital paid for their time to pursue further education while 10% said they would pay their own way and 3% felt that pursuing more education required too much time and money.

73% of respondents felt that their employer hired and kept good workers although 50% of respondents said it was a struggle to find those employees. 4% of respondents felt that their employer did not pay enough, 12% felt that employees in their hospital were not treated well and 12% thought that there were not enough good workers at their hospital.

If they had it to do over again, 33% of respondents would work at the same occupation, 23% would get more schooling, 37% would look for a different occupation, 3% would get more technical training and 3% would take more college courses.
Cross-Tabulation of Results By Job Type – Records Tech/Coders

When asked what led them to select their current occupation, 60% of all respondents said they had always been interested in health care while 0% said they had prior experience and moved up, 0% said a relative had held a similar job and 30% didn’t know. 10% mentioned suggestions from a high school counselor or teacher.

13% of respondents indicated that they learned the skills needed for their job in school/college while 13% said they needed on the job training, 47% said they learned some of the necessary skills in school/college and 7% felt that school had prepared them well for the job. 20% said they did not learn the required skills in school.

14% of respondents said they did not learn computer skills in school while 7% mentioned using technology needed for the job, 50% named “other” skills, 14% named communication skills, 14% named reading detailed paperwork and 0% named discipline/motivation. Among the most frequently mentioned “other” responses were “anatomy and physiology” and “coding”.

34% of respondents indicated that new graduates have the training they need in order to perform their job although 20% said the new graduates know only the basics. 53% of the respondents felt that the new graduates still need some training, and 13% felt that they need a lot of training.

50% of respondents thought that there is a shortage of workers and another 14% thought their employer had trouble finding workers. 14% felt that their employer had no trouble finding workers. 0% said there was no shortage but people were not applying and 21% indicated that there were not enough training programs.

40% of respondents were interested in getting more training so they could move up if their employer paid for it while 27% were satisfied with their current level. 7% said they would be interested if their hospital paid for their time to pursue further education while 27% said they would pay their own way and 0% felt that pursuing more education required too much time and money.

86% of respondents felt that their employer hired and kept good workers although 29% of respondents said it was a struggle to find those employees. 7% of respondents felt that their employer did not pay enough, 7% felt that employees in their hospital were not treated well and 0% thought that there were not enough good workers at their hospital.
If they had it to do over again, 40% of respondents would work at the same occupation, 40% would get more schooling, 0% would look for a different occupation, 13% would get more technical training and 7% would take more college courses.

These results are displayed on the following two spreadsheets:
## Employee Survey Results: by Question #

### Question: 1. What led you to work at this occupation?

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Supervisors</th>
<th>CNC Ops</th>
<th>Painters</th>
<th>Welders</th>
<th>Med Asst</th>
<th>Reg Nurse</th>
<th>Resp Ther</th>
<th>Coders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don’t know</td>
<td>32%</td>
<td>28%</td>
<td>34%</td>
<td>35%</td>
<td>65%</td>
<td>56%</td>
<td>45%</td>
<td>50%</td>
</tr>
<tr>
<td>Relative</td>
<td>20</td>
<td>31</td>
<td>16</td>
<td>31</td>
<td>14</td>
<td>16</td>
<td>16</td>
<td>0</td>
</tr>
<tr>
<td>Want ad</td>
<td>32%</td>
<td>18</td>
<td>22</td>
<td>11</td>
<td>4</td>
<td>18</td>
<td>18</td>
<td>0</td>
</tr>
<tr>
<td>School counselor or teacher</td>
<td>5%</td>
<td>4%</td>
<td>6%</td>
<td>12%</td>
<td>12%</td>
<td>5%</td>
<td>15%</td>
<td>38%</td>
</tr>
</tbody>
</table>

### Question: 2. In high school, did you learn what you needed for this job?

<table>
<thead>
<tr>
<th>Need</th>
<th>Supervisors</th>
<th>CNC Ops</th>
<th>Painters</th>
<th>Welders</th>
<th>Med Asst</th>
<th>Reg Nurse</th>
<th>Resp Ther</th>
<th>Coders</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>31</td>
<td>38</td>
<td>47</td>
<td>48</td>
<td>40</td>
<td>31</td>
<td>42</td>
<td>8</td>
</tr>
<tr>
<td>Some</td>
<td>31</td>
<td>25</td>
<td>28</td>
<td>21</td>
<td>18</td>
<td>29</td>
<td>27</td>
<td>15</td>
</tr>
<tr>
<td>Needed OJT</td>
<td>28</td>
<td>16</td>
<td>13</td>
<td>13</td>
<td>18</td>
<td>15</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>Yes</td>
<td>8</td>
<td>16</td>
<td>6</td>
<td>12</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>15</td>
</tr>
</tbody>
</table>

### Question: 3. What did you NOT learn in H.S. that you need for this job?

<table>
<thead>
<tr>
<th>Skill</th>
<th>Supervisors</th>
<th>CNC Ops</th>
<th>Painters</th>
<th>Welders</th>
<th>Med Asst</th>
<th>Reg Nurse</th>
<th>Resp Ther</th>
<th>Coders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer skills</td>
<td>60</td>
<td>39</td>
<td>21</td>
<td>23</td>
<td>18</td>
<td>37</td>
<td>38</td>
<td>17</td>
</tr>
<tr>
<td>Other skills</td>
<td>9</td>
<td>8</td>
<td>41</td>
<td>27</td>
<td>21</td>
<td>22</td>
<td>15</td>
<td>50</td>
</tr>
<tr>
<td>i.e. “people skills”</td>
<td></td>
<td></td>
<td>i.e. “painting”</td>
<td>i.e. “welding”</td>
<td></td>
<td></td>
<td>i.e. time mgt prioritizi ng</td>
<td>i.e. A&amp;P coding</td>
</tr>
<tr>
<td>Reading drawings, prints, charts</td>
<td>21</td>
<td>19</td>
<td>3</td>
<td>29</td>
<td>9</td>
<td>9</td>
<td>4</td>
<td>17</td>
</tr>
<tr>
<td>Using measuring devices</td>
<td>3</td>
<td>20</td>
<td>14</td>
<td>9</td>
<td>18</td>
<td>18</td>
<td>4</td>
<td>17</td>
</tr>
<tr>
<td>Discipline</td>
<td>6</td>
<td>6</td>
<td>10</td>
<td>9</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Math</td>
<td>0</td>
<td>8</td>
<td>10</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
</tbody>
</table>

### Question: 4. Do new hires know what they need to know?

<table>
<thead>
<tr>
<th>Knowledge Level</th>
<th>Supervisors</th>
<th>CNC Ops</th>
<th>Painters</th>
<th>Welders</th>
<th>Med Asst</th>
<th>Reg Nurse</th>
<th>Resp Ther</th>
<th>Coders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Need some, or a lot of, training</td>
<td>79</td>
<td>70</td>
<td>66</td>
<td>66</td>
<td>67</td>
<td>50</td>
<td>69</td>
<td>39</td>
</tr>
<tr>
<td>They know enough, but only the basics</td>
<td>15</td>
<td>20</td>
<td>22</td>
<td>26</td>
<td>31</td>
<td>43</td>
<td>50</td>
<td>23</td>
</tr>
<tr>
<td>They have all the training they need</td>
<td>5</td>
<td>10</td>
<td>13</td>
<td>9</td>
<td>26</td>
<td>18</td>
<td>27</td>
<td>46</td>
</tr>
</tbody>
</table>

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52
### Question:

<table>
<thead>
<tr>
<th>Question</th>
<th>Supervisors</th>
<th>CNC Ops</th>
<th>Painters</th>
<th>Welders</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Are there enough good people in your occupation?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No problem finding workers</td>
<td>24</td>
<td>21</td>
<td>32</td>
<td>43</td>
</tr>
<tr>
<td>Employer has trouble finding workers</td>
<td>34</td>
<td>31</td>
<td>16</td>
<td>25</td>
</tr>
<tr>
<td>No shortage, but folks not applying here</td>
<td>17</td>
<td>18</td>
<td>32</td>
<td>16</td>
</tr>
<tr>
<td>Not enough training programs</td>
<td>9</td>
<td>10</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>6. Would you be interested in training to move up?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If employer paid for it</td>
<td>37</td>
<td>42</td>
<td>31</td>
<td>38</td>
</tr>
<tr>
<td>If employer paid paid for the time it takes</td>
<td>16</td>
<td>23</td>
<td>25</td>
<td>32</td>
</tr>
<tr>
<td>No, I’m satisfied with where I’m at</td>
<td>34</td>
<td>7</td>
<td>13</td>
<td>12</td>
</tr>
<tr>
<td>No, takes too much time and money</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>7. Does your employer hire and keep good workers?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>69</td>
<td>70</td>
<td>63</td>
<td>60</td>
</tr>
<tr>
<td>...but it’s a struggle</td>
<td>58</td>
<td>38</td>
<td>41</td>
<td>29</td>
</tr>
<tr>
<td>No, they don’t pay enough</td>
<td>21</td>
<td>19</td>
<td>31</td>
<td>29</td>
</tr>
<tr>
<td>No, they don’t treat their employees well</td>
<td>3</td>
<td>10</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>No, there aren’t enough good workers</td>
<td>7</td>
<td>5</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8. If you had it to do over, what would you do?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>More schooling</td>
<td>29</td>
<td>42</td>
<td>44</td>
<td>40</td>
</tr>
<tr>
<td>More technical training</td>
<td>20</td>
<td>18</td>
<td>16</td>
<td>19</td>
</tr>
<tr>
<td>Go to college</td>
<td>27</td>
<td>13</td>
<td>13</td>
<td>15</td>
</tr>
<tr>
<td>Same occupation</td>
<td>14</td>
<td>17</td>
<td>16</td>
<td>18</td>
</tr>
<tr>
<td>Different occupation</td>
<td>9</td>
<td>10</td>
<td>13</td>
<td>7</td>
</tr>
</tbody>
</table>

| 5. Are there enough good people in your occupation?                      |             |         |          |         |
| Yes, no problem finding workers                                          | 41          | 18      | 18       | 15      |
| Employer has trouble finding workers                                     | 21          | 26      | 26       | 15      |
| There is a shortage in this area                                         | 28          | 45      | 54       | 46      |
| No shortage, but folks not applying here                                  | 10          | 5       | 5        | 0       |
| Not enough training programs                                             | 0           | 6       | 6        | 23      |

| 6. Interested in more educ./training to move up?                         |             |         |          |         |
| If employer paid for training                                            | 62          | 36      | 23       | 31      |
| If hospital paid me for my time                                          | 28          | 13      | 23       | 8       |
| I’d pay my own way                                                       | 5           | 9       | 12       | 31      |
| I’m at the level I want to be                                            | 3           | 35      | 38       | 31      |
| More training takes too much time and $$                                  | 3           | 7       | 4        | 0       |

| 7. Does your employer hire and keep good workers?                        |             |         |          |         |
| Yes                                                                      | 75          | 72      | 71       | 92      |
| ...but it’s a struggle                                                   | 58          | 38      | 41       | 29      |
| Employer doesn’t pay enough                                              | 30          | 24      | 50       | 25      |
| Employees are not treated well                                           | 18          | 11      | 4        | 0       |
| Not enough good workers                                                  | 5           | 16      | 13       | 8       |

| 8. If you had it to do over, what would you do?                          |             |         |          |         |
| Get more schooling                                                       | 70          | 19      | 19       | 31      |
| Same occupation                                                          | 19          | 59      | 35       | 46      |
| More college courses                                                     | 0           | 2       | 4        | 8       |
| Different occupation                                                     | 5           | 19      | 37       | 0       |
Post-Secondary Student Survey

In order to assess student awareness of occupational realities and possibilities, particularly those concerning occupations identified in the Phase One report, surveys were conducted during class sessions at the South Bend campus of Ivy Tech Community College. One survey was administered to students pursuing studies in welding, and a second survey was given to students in a CNC class. The survey instrument and results follow:

Northern Indiana Workforce Investment Board
Strategic Skills Initiative
Post-Secondary Student Survey

1. What career are you planning to pursue? ________________________________

2. How did you arrive at your choice of careers? Identify the single most important factor.
   a. Parent or guardian.
   b. Friend(s)
   c. Teacher
   d. School Guidance Counselor
   e. Media (e.g., newspaper, magazine, internet)
   f. Television show
   g. Other (please specify) ___________________________________________

3. Have you ever worked in the field of your chosen career?
   a. Yes  b. No
   If yes, at what job or jobs? _________________________________________

4. Were you aware that there are shortages in the occupation you are studying for?
   a. Yes  b. No
   If yes, how did you learn that? _______________________________________

5. Why do you think that shortage exists?

6. Why do you think people drop this class or program?
   a. Courses are too difficult.
   b. The program costs too much.
   c. The program is offered at times difficult for me to attend.
   d. The program takes too long to complete.
   e. Other reasons (please specify) _______________________________
7. Do you think your high school education prepared you well for postsecondary education?
   a. Yes  b. No
   If not, why not?
   __________________________________________________________________________
   __________________________________________________________________________

8. Do you plan to work in this area – Northern Indiana and Southern Michigan – when you complete your studies?
   a. Yes  b. No
   If not, why not? __________________________________________________________________________

Post-Secondary Survey Results:

Survey Results for Welding Students
Surveys taken at Ivy Tech Community College: Dec. 7, 2005
Mary Beth Greer

1. What is your career goal?

   - Promotion at work
   - welding
   - AAS and long term job
   - Build motorcycles
   - Associates Degree in HVAC
   - HVAC
   - Plumber/pipefitter
   - millwright
   - To finish my Millwright apprenticeship. Make a better life for my family.
   - Millwright

2. How did you make your career decision? Select the one most important influence.

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>School Guidance</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Teachers</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Parents</td>
<td>1</td>
<td>10.0 %</td>
</tr>
<tr>
<td>Friends</td>
<td>2</td>
<td>20.0 %</td>
</tr>
<tr>
<td>WorkOne Center</td>
<td>1</td>
<td>10.0 %</td>
</tr>
<tr>
<td>Publications</td>
<td>1</td>
<td>10.0 %</td>
</tr>
</tbody>
</table>
Other:  
-job  
-me  
- Have been in construction for years, tired of making no money.  
- My father is a millwright, and work was looking for millwrights.  
- AM General offered the apprenticeship, and I was qualified enough to get it.  
- Apprenticeship program through work

3. Have you ever worked in manufacturing?

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>8</td>
<td>80.0 %</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
<td>20.0 %</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>100 %</td>
</tr>
</tbody>
</table>

If yes at what job or jobs?

- Assembly-parts  
- Air Conditioning  
- Making musical instruments  
- Maintenance  
- Factory-Machine operator  
- Trailer factory, tub factory, automotive.  
- Bock Products, sheet metal, Delta Plastics, then Apartment Maintenance.  
- AM General 27 yrs. Assembly, inspection, repair, welder, painter, test driver.

4. Were you aware that there are shortages in the occupation you are studying for?

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>4</td>
<td>40 %</td>
</tr>
<tr>
<td>No</td>
<td>6</td>
<td>60 %</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>100 %</td>
</tr>
</tbody>
</table>

If yes how did you learn that?

- Counselor  
- My journeymen have informed me about the skilled trades are approaching retirement age and most companies aren’t producing any more.  
- NAFTA “No” “American” “Factories” “Taking” “Applications”
5. Why do you think that shortage exists?

-Outsourcing
-Because not enough people have training beyond on the job training
-Not getting paid enough for the work
-Skilled trades retiring and not being replaced
-Trade policies of Republican Administrations enabling big business to move overseas with lower costs and bonus

6. Why do you think people drop this class or program?

<table>
<thead>
<tr>
<th>Reason</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program of study too difficult:</td>
<td>Yes</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Left Blank</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>10</td>
</tr>
<tr>
<td>Cost too high:</td>
<td>Yes</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Left Blank</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>10</td>
</tr>
<tr>
<td>Length of Program too long:</td>
<td>Yes</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Left Blank</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>10</td>
</tr>
<tr>
<td>Days and hours of classes not flexible enough:</td>
<td>Yes</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Left Blank</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>10</td>
</tr>
<tr>
<td>Other:</td>
<td>Yes</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Left Blank</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>10</td>
</tr>
</tbody>
</table>

Other
-Some people just aren’t able to do it.
-They don’t have the skill ability
9. Do you think your high school education prepared you well for postsecondary education?

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>6</td>
<td>60.0 %</td>
</tr>
<tr>
<td>No</td>
<td>4</td>
<td>40.0%</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>100.0 %</td>
</tr>
</tbody>
</table>

If not, why not?
- Too easy
- Didn’t go too much
- I had no idea what I wanted to be when I grew up.
- Was not prepared for Arabic Math “Algebra” Save the trees!

10. Do you plan to work in this area of Indiana when you complete your studies?

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>9</td>
<td>90.0 %</td>
</tr>
<tr>
<td>No</td>
<td>1</td>
<td>10.0 %</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>100.0 %</td>
</tr>
</tbody>
</table>

If not, why not, and where do you plan to go?
- Can’t stand this place. I need warmth.

Survey Results for CNC Students
Surveys taken at Ivy Tech Community College: Dec. 7, 2005
Mary Beth Greer

1. What is your career goal?
- To become a line foreman. Maybe an engineer if possible.
- Quality Control Manager.
- No answer
- To be a machinist/maintenance.
- Engineering
- Mold maker
- I want to be a manufacturing Engineer.
- Tool Maker/ CNC Programmer
- Design Layout Machinist
- Training to become a CNC Programmer. Eventually I would like to be able to make custom parts for all types of vehicles.
- Become a CNC Programmer (Operator).
- Manufacturing Engineer/ Programmer.

2. How did you make your career decision? Select the one most important influence.

<table>
<thead>
<tr>
<th>Influence</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>School Guidance</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Teachers</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Parents</td>
<td>5</td>
<td>41.7%</td>
</tr>
<tr>
<td>Friends</td>
<td>2</td>
<td>16.7%</td>
</tr>
<tr>
<td>WorkOne Center</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Publications</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
<td>41.7%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
<td>100%</td>
</tr>
</tbody>
</table>

**Other:**
- Apprenticeship at work
- Interest in hands on occupation
- My current job
- I have had jobs in Marshall County that closed down, and I liked the manual labor with CNC. I decided to learn how to program them. I believe that CNC is the way of the new world.

3. Have you ever worked in manufacturing?

<table>
<thead>
<tr>
<th>Work Experience</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>11</td>
<td>91.7%</td>
</tr>
<tr>
<td>No</td>
<td>1</td>
<td>8.3%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
<td>100%</td>
</tr>
</tbody>
</table>

If yes at what job or jobs?

- Attco Machine as a lathe operator for 3 years. Now I am employed at Shafer Gear works doing lathe work (some hob a shaving and milling too) for almost 3 years now.
- Quality Tech, Fork lift driver, Machine Sort, Shipping and Handling
- Tool and Die Maker, Injection Mold Maker
- Production
- Die Mold making
- Machinist-mold repairer
I am currently doing CNC set up technician job at Hayes Lemmerz International at Bristol Indiana
-apprentice as a tool maker-CNC operator
-machinist work
-Weld maintenance, shipping and receiving, incentive press work, construction, welding towers, machine technician.
-Symmetry Medical, Fulton Industries, B&D Manufacturing, Coan Engineering

4. Were you aware that there are shortages in the occupation you are studying for?

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>6</td>
<td>50 %</td>
</tr>
<tr>
<td>No</td>
<td>6</td>
<td>50 %</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>100 %</td>
</tr>
</tbody>
</table>

If yes how did you learn that?

- Shafer Gear goes through a lot of people who don’t know to much about machining. We use a lot of temp services as well as hiring services.
- Networking
- Word of Mouth
- I already am doing that job
- From working in the trade for 3 years. Seeing CNC operators come and go that are under-qualified.
- I am from Marshall County, about 15 miles from Warsaw. CNC’s are the closest pay for the job I lost.

5. Why do you think that shortage exists?

- I feel that there should be more of a wet wage limits between shops and within your area of expertise. Long hours with some benefits aren’t appealing either.
- Low pay, Low interest in job, workers lack of Quality in job.
- Lack of interest, also the length of study time needed to become a Tool and Die maker, machinist or mold maker or CNC operator programmer, and the starting pay for beginning or entry level workers deters people’s interest.
- Because of the length of time required to be qualified in this career. Also available classes at night. (Because most people are working.)
- Low pay and benefits-Occupation not taught as option
- Because it is not easy to learn. That job needs lots of responsibility, hard to work quickly and keep tolerance etc.
- Not enough qualified personnel.
- Trade not known about.
- CNC’s are the future for manufacturing.
- Because it takes knowledge and skill in that area to be able to do CNC.
- Lack of awareness that the career even exists.
6. Why do you think people drop this class or program?

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program of study too difficult:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>7</td>
<td>58.3 %</td>
</tr>
<tr>
<td>No</td>
<td>4</td>
<td>33.3 %</td>
</tr>
<tr>
<td>Left Blank</td>
<td>1</td>
<td>8.3 %</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>100.0 %</td>
</tr>
</tbody>
</table>

| Cost too high:            |        |            |
| Yes                      | 4      | 33.3 %     |
| No                       | 6      | 50.0 %     |
| Left Blank               | 2      | 16.7 %     |
| Total                    | 12     | 100.0 %    |

| Length of Program too long: |        |            |
| Yes                       | 3      | 25.0 %     |
| No                        | 8      | 66.7 %     |
| Left Blank                | 1      | 8.3 %      |
| Total                     | 12     | 100.0 %    |

| Days and hours of classes not flexible enough: |        |            |
| Yes                                       | 4      | 33.3 %     |
| No                                        | 6      | 50.0 %     |
| Left Blank                               | 2      | 16.7 %     |
| Total                                    | 12     | 100.0 %    |

| Other:                                  |        |            |
| Yes                                      | 3      | 25.0 %     |
| Left Blank                               | 9      | 75.0 %     |
| Total                                    | 12     | 100.0 %    |

**Other**
- Long Hours at shops.
- They find they do not enjoy or like the work.
- CNC not easy to run

11. Do you think your high school education prepared you well for postsecondary education?

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>9</td>
<td>75.0 %</td>
</tr>
<tr>
<td>No</td>
<td>3</td>
<td>25.0%</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>100.0 %</td>
</tr>
</tbody>
</table>

If not, why not?
They offered math but no machine type classes. I didn’t take my math too serious back then either.

Manufacturing no longer subject in school.

They did not focus on what college would be like or what you would have to do to succeed.

12. Do you plan to work in this area of Indiana when you complete your studies?

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>10</td>
<td>83.3 %</td>
</tr>
<tr>
<td>No</td>
<td>1</td>
<td>8.3 %</td>
</tr>
<tr>
<td>Undecided</td>
<td>1</td>
<td>8.3 %</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>100.0 %</td>
</tr>
</tbody>
</table>

If not, why not, and where do you plan to go?

I hate Indiana and I plan to move back to Colorado.

It all depends on benefits and money. I already have companies in other states looking at my resume.
Post-Secondary Institutional Surveys and Results

In order to establish institutional capacity for training programs in the occupations targeted in the Phase One report, surveys were distributed, via email, to program directors in regional institutions. For advanced manufacturing, the programs in which we were interested included those in welding and CNC operation. It was not possible to administer surveys for the other two occupations in this sector, supervisor and transportation equipment painter, because there are no programs in EGR2.

In the Health Care sector, surveys were sent to regional nursing programs, as well as to the regional schools offering degrees or certificates in Medical Assisting and Health Information Technologist/Coder. No funded programs exist locally for Respiratory Therapists, so no survey could be administered. The following charts and documents are the raw responses from the programs surveyed:

Welding and CNC Operators:

**Welding and CNC Operator Training Information**

Elkhart Area Career Center data

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Machine Trades</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>32</td>
<td>14</td>
<td>18</td>
<td>unk</td>
<td>unk</td>
<td></td>
<td></td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>2002-2003</td>
<td>33</td>
<td>1</td>
<td>16</td>
<td>15</td>
<td>unk</td>
<td>unk</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>2003-2004</td>
<td>40</td>
<td>20</td>
<td>20</td>
<td>2</td>
<td>13</td>
<td></td>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2004-2005</td>
<td>40</td>
<td>18</td>
<td>22</td>
<td>7</td>
<td>12</td>
<td></td>
<td>19</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Welding</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>27</td>
<td>1</td>
<td>19</td>
<td>7</td>
<td>unk</td>
<td></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>2002-2003</td>
<td>30</td>
<td>1</td>
<td>3</td>
<td>13</td>
<td>13</td>
<td></td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2003-2004</td>
<td>38</td>
<td>21</td>
<td>17</td>
<td>2</td>
<td>6</td>
<td></td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2004-2005</td>
<td>45</td>
<td>21</td>
<td>24</td>
<td>6</td>
<td>11</td>
<td></td>
<td>17</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Ivy Tech Community College data

<table>
<thead>
<tr>
<th>Ivy Tech Community College data</th>
<th>South Bend, Elkhart and Warsaw campuses</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAS in Welding</td>
<td>last 3 years avg. 75</td>
</tr>
<tr>
<td>(6% of students do not complete course of studies, 5.2% because they have found a job.)</td>
<td></td>
</tr>
<tr>
<td>AAS in CNC Op.</td>
<td>last 3 years 45</td>
</tr>
</tbody>
</table>
* both programs have converted from certification to AAS degree, and current enrollments, of about 15 per program, represent start-up figures.

Ivy Tech Community College also conducts courses in the field, at the request of manufacturers, but program data are not known.
### EGR2 Nursing Program Data

<table>
<thead>
<tr>
<th>Institution</th>
<th>County</th>
<th>Contact</th>
<th>Phone #</th>
<th>Current Enrollment</th>
<th>Avg. Incoming Class</th>
<th>Graduates prev. 5-yr avg</th>
<th>Percent Completing</th>
<th>Percent work in EGR2</th>
<th>Reasons</th>
<th>Retention</th>
<th>Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ancilla College</td>
<td>Marshall</td>
<td>Ann Fitzgerald</td>
<td>574-936-8898 x379</td>
<td>75</td>
<td>40</td>
<td>1st yr… 30</td>
<td>unknown</td>
<td>prob. 95%办理</td>
<td>Lack of home support</td>
<td>High remediation</td>
<td>Advice about need for home support</td>
</tr>
<tr>
<td>Bethel College</td>
<td>St. Joseph</td>
<td>Dr. Ruth Davidhizar</td>
<td>574-257-2594</td>
<td>300</td>
<td>135</td>
<td>55</td>
<td>80%</td>
<td>BSN 50%Assoc 80%</td>
<td>Too much outside work</td>
<td></td>
<td>Aggressive remediation</td>
</tr>
<tr>
<td>Goshen College</td>
<td>Elkhart</td>
<td>Vicky Kirkton</td>
<td>574-535-7376</td>
<td>75</td>
<td>20</td>
<td>19</td>
<td>?</td>
<td>?</td>
<td>Some financial constraints</td>
<td></td>
<td>Scholarships</td>
</tr>
<tr>
<td>Indiana University S.B.</td>
<td>St. Joseph</td>
<td>Dr. Mary Jo Regan-Kubinski,</td>
<td>574-520-457152</td>
<td>60</td>
<td>50</td>
<td>90%</td>
<td>&gt;90%</td>
<td>Weak in math and science</td>
<td>Need income, so work too much</td>
<td></td>
<td>Extensive advising</td>
</tr>
<tr>
<td>Ivy Tech Comm College</td>
<td>St. Joseph</td>
<td>Carol Kirkner</td>
<td>574-289-7001 x5354</td>
<td>110</td>
<td>70</td>
<td>45</td>
<td>99%</td>
<td>90%+</td>
<td>Financial constraints</td>
<td>Some courses too hard</td>
<td>Counseling, tutoring</td>
</tr>
<tr>
<td>St. Mary's College</td>
<td>St. Joseph</td>
<td>Dr. Linda Zoeller</td>
<td>574-284-4680</td>
<td>161</td>
<td>45</td>
<td>17</td>
<td>93%</td>
<td>50%</td>
<td>Medical Problems</td>
<td>1:1 faculty-student ratio, college support</td>
<td></td>
</tr>
</tbody>
</table>

### Tuition and Room/Board Costs

<table>
<thead>
<tr>
<th>Institution</th>
<th>County</th>
<th>Fees</th>
<th>Room/Board</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ancilla College</td>
<td>Marshall</td>
<td>fees - $215非学区</td>
<td>N/A – commuter</td>
</tr>
<tr>
<td>Bethel College</td>
<td>St. Joe</td>
<td>$21,190非学区</td>
<td>$6,800非学区</td>
</tr>
<tr>
<td>Goshen College</td>
<td>Elkhart</td>
<td>N/A - commuter</td>
<td>N/A – commuter</td>
</tr>
<tr>
<td>Indiana University S.B.</td>
<td>St. Joe</td>
<td>ungrd res, non-resid</td>
<td>152.75非学区</td>
</tr>
<tr>
<td></td>
<td></td>
<td>nursing non-resid</td>
<td>400.05非学区</td>
</tr>
<tr>
<td></td>
<td></td>
<td>resident</td>
<td>210.05非学区</td>
</tr>
<tr>
<td></td>
<td></td>
<td>non-resid, resident</td>
<td>606.00非学区</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>83.95非学区</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>170.25非学区</td>
</tr>
</tbody>
</table>

*did not respond - data is from Peterson's Guide to Nursing Programs*
Medical Assistant Institutional Data

Ivy Tech Community College
Medical Assisting AAS
Medical Assisting Tech Certificate

(ASN Info)
1. Program capacity: 110
2. Current enrollment: 107
3. Average number of applicants: 500 – 600 for Traditional; 150 – 200 for Transition
4. Average incoming class: 50/20
5. Average graduating class: 35/15
6. Proportion of students that finish on time: 95%
7. Proportion of students that don’t finish: <1%
8. Reasons given for not finishing: academic failure, insufficient funds, need to work more, family responsibilities
9. Does the program have a waiting list, and if so, how many name are currently on the list? We do not use a wait list. If students are not admitted at the appropriate time, all names go “back into the hat” and everyone is looked at again for the next admission.

Brown Mackie College
Medical Assistant Certificate
Medical Assisting AS

1) Program capacity:
   a. AS 32
   b. Certificate 32
2) Current enrollment:
   a. AS 160
   b. Certificate 11
3) Average incoming class:
   a. AS 20
   b. Certificate 4
4) Average graduation class size for the past 5 years:
   a. AS                  35
   b. Certificate       15

5) Proportion of students who finish on time:
   a. AS                        70%
   b. Certificate             77%

6) Proportion of students who do not finish:
   a. AS                      30%
   b. Certificate           23 %

7) Reasons for dropping:
   Transfer to another program, personal issues, child care, transportation, financial difficulties

8) Do incoming students need remediation?  Yes, based on initial ASSET scores

9) Do you have a waiting list, and if so, how many names are on the list?  No

Coder Institutional Data

Davenport University
Health Information Technology-AAS
Medical Coding-Diploma

Programs officially began on the South Bend Campus in Winter ‘05. Students have had access to the program on line since 2003. While this report was prepared using the primary major code, there are estimated to be 15-20 additional students in these programs as a secondary major.

1. Program capacity:
   a. AAS  Unlimited at current time
   b. Coding  Unlimited at current time

2. Current enrollment:
   a. AAS  6 students
   b. Coding  14 students

3. Percentage of incoming students who need remedial class(es)?
   a. AAS 100%  (1 of 1)
   b. Coding 100%  (2 of 2)
4. Average incoming class:
   a. AAS   Too new to establish an average
   b. Coding Too new to establish an average

5. Average graduating?
   a. AAS   Program started on campus Fall 2005
   b. Coding  1 in May 2005 – student completed through on line program

6. Proportion of students that finish on time:
   a. AAS   TBD
   b. Coding   TBD

7. Proportion of students that do not finish:
   a. AAS   TBD
   b. Coding   TBD

8. Reasons given for not finishing:

   N/A

9. Do you have a waiting list, and if so, how many names are currently on the list?
   No waiting list at present
Secondary Institutional and Secondary Student Data

In order to assess pipeline issues on the secondary level, various websites, school corporations, and individual high schools were contacted for the purpose of gathering data. In addition, a survey was administered to 130 high school students, selected at random, concerning their awareness and knowledge of manufacturing and health care occupations, especially those targeted in the Phase One report. The following material presents the results of these investigations:

<table>
<thead>
<tr>
<th>IN code</th>
<th>School Name</th>
<th>Co. code</th>
<th>enrollment</th>
<th>graduates</th>
<th>dropouts</th>
<th>expulsions</th>
<th>suspensions</th>
<th>4-yr coll</th>
<th>2-yr coll</th>
<th>voc-tech</th>
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<td>23</td>
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**H.S. Graduates’ Higher Education Intent – EGR2, 2004**

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<thead>
<tr>
<th>County</th>
<th># grad</th>
<th># 4-yr coll</th>
<th>% 4-yr coll</th>
<th># 2-yr coll</th>
<th>% 2-yr coll</th>
<th># voc-tech</th>
<th>% voc-tech</th>
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<tbody>
<tr>
<td>Fulton</td>
<td>174</td>
<td>85</td>
<td>48.85</td>
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<td>14.94</td>
<td>15</td>
<td>8.6</td>
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<tr>
<td>Marshall</td>
<td>521</td>
<td>286</td>
<td>54.89</td>
<td>57</td>
<td>10.94</td>
<td>36</td>
<td>6.91</td>
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<tr>
<td>Kosciusko</td>
<td>853</td>
<td>525</td>
<td>61.55</td>
<td>101</td>
<td>11.84</td>
<td>71</td>
<td>8.32</td>
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<tr>
<td>Elkhart</td>
<td>1663</td>
<td>971</td>
<td>58.40</td>
<td>193</td>
<td>11.61</td>
<td>79</td>
<td>4.75</td>
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<tr>
<td>St. Joseph</td>
<td>2277</td>
<td>1342</td>
<td>58.94</td>
<td>222</td>
<td>9.75</td>
<td>176</td>
<td>7.73</td>
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</tbody>
</table>

Source: [www.doe.state.in.us](http://www.doe.state.in.us)
### Percent of Education Delivered Through Vocational Education - by School Corporation

**acad. Yr. 2003-2004**

<table>
<thead>
<tr>
<th>School Corp</th>
<th>% voc ed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argos</td>
<td>4.60%</td>
</tr>
<tr>
<td>Baugo (Jimtown)</td>
<td>3.6</td>
</tr>
<tr>
<td>Bremen</td>
<td>3.8</td>
</tr>
<tr>
<td>Caston</td>
<td>6.9</td>
</tr>
<tr>
<td>Concord</td>
<td>3.2</td>
</tr>
<tr>
<td>Culver</td>
<td>2.2</td>
</tr>
<tr>
<td>Elkhart</td>
<td>3.9</td>
</tr>
<tr>
<td>Fairfield</td>
<td>3.6</td>
</tr>
<tr>
<td>Goshen</td>
<td>2.6</td>
</tr>
<tr>
<td>John Glenn</td>
<td>4.7</td>
</tr>
<tr>
<td>Middlebury (Northridge)</td>
<td>2.5</td>
</tr>
<tr>
<td>Penn</td>
<td>2.3</td>
</tr>
<tr>
<td>Plymouth</td>
<td>5.1</td>
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<tr>
<td>Rochester</td>
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<tr>
<td>Mishawaka</td>
<td>4.7</td>
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<td>South Bend</td>
<td>2.3</td>
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<tr>
<td>Tippecanoe Valley</td>
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<tr>
<td>Triton</td>
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<td>Union-North (LaVille)</td>
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<td>Wa-Nee (North Wood)</td>
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<td>Warsaw</td>
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<td>Wawasee</td>
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<tr>
<td>Whitko</td>
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</table>

### High School Dropouts, by County - EGR2

**School year 2003-04**

<table>
<thead>
<tr>
<th>County</th>
<th>Number</th>
<th>% HS students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fulton</td>
<td>21</td>
<td>1.65</td>
</tr>
<tr>
<td>Marshall</td>
<td>83</td>
<td>2.37</td>
</tr>
<tr>
<td>Kosciusko</td>
<td>162</td>
<td>2.51</td>
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<tr>
<td>Elkhart</td>
<td>389</td>
<td>2.55</td>
</tr>
<tr>
<td>St. Joseph</td>
<td>579</td>
<td>3.0</td>
</tr>
</tbody>
</table>

Source: [www.doe.state.in.us/](http://www.doe.state.in.us/)
School Corporation Responses to Inquiries about Vocational Courses Offered

Several regional school corporations were sent email surveys designed to elicit information about vocational-technical courses offered in the high schools in the region. In terms of pipeline considerations, one may suspect that the more students are exposed to skills relevant to manufacturing occupations, the more students would opt for those kinds of careers. The following are the responses we received to our inquiries:

**Rochester Community High School**: (source: Dr. Debra Howe, superintendent)

1. Vocational education classes:
   - Career Center: Building Trades, Cosmetology, Certified Nursing Assistant, Early Childhood Education (Beg and Adv), CISCO, Programming and Software Development (Beg and Adv), Digital Webpage Design (Beg and Adv), Radio Broadcasting (Beg and Adv), TV Production (Beg and Adv), Welding Technology (Beg and Adv), Machine Trades Tech (Beg and Adv), Computer Install and Repair, Auto Service Tech (Beg and Adv), Collision Repair (Beg and Adv).

2. Active listening/Other Life Skills: Adult Roles and Responsibilities, Lifeskills class (for our EH kids), Peer Helpers (not a class but an extra-curricular)

3. Career Days - last time was in February 2005 Many professionals that included both healthcare and manufacturing visited.
   - We also encourage students to take a job-shadowing day at least once per semester (this is an excused absence) during junior and senior years.

4. Co-op Programs: ICE for seniors

5. We do not have ready access to the information on drop outs and so when we get it, we will forward it to you:
   - 2004-2005 -
2003-2004
2002-2003
2001-2002

Enrollment rates as follows:

2004-2005 - 570
2003-2004 - 552
2002-2003 - 527
2001-2002 - 543

Plymouth Community School Corp.

Voc Ed Classes:
- Building Trades
- Health Careers
- Cosmetology
- Computer Repair
- Computer Networking
- Business Lab
- Family and Consumer Sciences
- Childcare
- Auto Repair
- Agriculture
- Interdisciplinary Coop Ed

Yes:
- Provides a course that covers active listening and other life skills
- Has career days that include visits from nursing/healthcare and manufacturing
- Has co-op programs with local businesses

<table>
<thead>
<tr>
<th>Year</th>
<th>Enrollment</th>
<th>Dropout rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004-2005</td>
<td>993</td>
<td>17.4%</td>
</tr>
<tr>
<td>2003-2004</td>
<td>989</td>
<td>17.4%</td>
</tr>
<tr>
<td>2002-2003</td>
<td>963</td>
<td>6.7%</td>
</tr>
<tr>
<td>2001-2002</td>
<td>1024</td>
<td>3.0%</td>
</tr>
</tbody>
</table>
Wawasee Community School Corp

Voc Ed Classes
  Auto Mech I
  Auto Mech II
  Auto Service Tech
  Building Trades I
  Building Trades II
  Cosmetology I
  Cosmetology II
  Graphic Imaging I
  Graphic Imaging II
  Health Care Systems
  EMT
  Welding I
  Welding II
  Machine Tool I
  Machine Tool II
  Intro to Design Engineering
  Ag and FACS one hour classes

Yes:

  Provides active listening and other life skills classes
  Has career days (includes nursing/health care and manufacturing) 2 per year
  Has co-op programs with local businesses

<table>
<thead>
<tr>
<th>Year</th>
<th>Enrollment</th>
<th>Dropped out from block classes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004-2005</td>
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<tr>
<td>2003-2004</td>
<td>No Data</td>
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<tr>
<td>2001-2002</td>
<td>755</td>
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</table>

As one may observe, even from this limited sample of results, the courses included in different schools’ vocational-technical curriculum are quite varied, and many are not relevant to manufacturing at all.
Secondary School Student Survey

Northern Indiana Workforce Investment Board
Strategic Skills Initiative
Secondary School Student Survey

1. What occupation do you want to go into? ________________________________

2. How did you make your career decision? Choose the most important influence.
   a. Don’t have any career goal yet.
   b. Parent or guardian
   c. Friend(s)
   d. School guidance counselor
   e. Teacher
   f. School presentation
   g. Media, like newspaper or magazine articles
   h. Television show
   j. Other (please specify) ________________________________________________

3. Do you plan to get more education or training after high school?
   a. Yes  b. No
   If yes, where? (e.g. college, technical school, vocational program) ________________________

4. Select the single statement among the following that best describes your perception of manufacturing:
   a. I intend to work at a manufacturing job.
   b. I would consider working at a manufacturing job if it paid enough.
   c. I would think about working at a manufacturing job, but only if the job was really interesting.
   d. There are some jobs in manufacturing that I would like to get more information about, and I might pursue that kind of work.
   e. I would not work in manufacturing regardless of the pay or circumstances.

5. How important is each of the following to your personal job satisfaction? Rate each of them, in order of importance to you. Use numbers 1-10, and use each number only once.
   __ a. Money
   __ b. Benefits, such as insurance
   __ c. Having good co-workers
   __ d. Having a good supervisor
   __ e. Security, having little chance of getting laid off
   __ f. Interesting and challenging work
   __ g. Having a flexible work schedule
   __ h. Having a sense of independence, able to make some decisions myself
   __ j. Knowing that what I do makes a difference
   __ k. Other ________________________________

6. Do you plan to work in this general area – Northern Indiana or Southern Michigan – after you finish your education or training?
   a. Yes  b. No
   If not, why not? ______________________________________________________
### Results of Secondary School Student Survey

<table>
<thead>
<tr>
<th>Profession</th>
<th>How Decided</th>
<th>More Education</th>
<th>Manuf. Perception</th>
<th>Job Sat.</th>
<th>Stay Local</th>
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<tbody>
<tr>
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<td>Yes-College</td>
<td>B - if enough $</td>
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<td>F-school present</td>
<td>Yes-College</td>
<td>E - never!</td>
<td>c,d,b,a,f,h,g,j</td>
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<td>B-parent</td>
<td>Yes-College</td>
<td>E</td>
<td>d,g,h,a,f,b,e,j,c</td>
<td>No</td>
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<td>A - don't know</td>
<td>Yes-College</td>
<td>B</td>
<td>b,e,a,h,c,g,d,f</td>
<td>Yes</td>
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<td>B</td>
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<td>D - Maybe..</td>
<td>f,e,b,c,a,g,j,h,k</td>
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<td>E</td>
<td>j,f,h,c,g,d,b,a,e</td>
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<tr>
<td>Nursing</td>
<td>H-TV show</td>
<td>Yes-College</td>
<td>B</td>
<td>a,d,c,h,g,b,e,f</td>
<td>Yes</td>
</tr>
<tr>
<td>Nursing</td>
<td>B</td>
<td>Yes-Ball St</td>
<td>E</td>
<td>j,a,f,c,e,d,g,b</td>
<td>No</td>
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<tr>
<td>Nursing</td>
<td>J-family needs</td>
<td>Yes-College</td>
<td>C-if interesting work</td>
<td>j,e,f,b,l,c,g,h,d</td>
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<tr>
<td>Physical Therapist</td>
<td>J-family needs</td>
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<td></td>
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<tr>
<td>Radiologist</td>
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<td>j,e,b,d,g,a,f,c,h,</td>
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</tr>
<tr>
<td>Therapist</td>
<td>C-friends</td>
<td>Yes-College</td>
<td>d,f,e,g,h,c,b,a</td>
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<tr>
<td>Mech. Engineer</td>
<td>B</td>
<td>Yes-College</td>
<td>B</td>
<td>e,b,a,f,g,c,d,j,h</td>
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<tr>
<td>Mech. Engineer</td>
<td>J-like electronics</td>
<td>Yes-Tech School</td>
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<tr>
<td>Engineer</td>
<td>J-like electronics</td>
<td>Yes-Purdue or N.D.</td>
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<td>CAD Operator</td>
<td>D-guidance coun,</td>
<td>Yes-Vocational</td>
<td>C</td>
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<td>Aero Engineering</td>
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<td>B</td>
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<td>Maybe</td>
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<td>Manufacturing</td>
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<td>Yes-Trade School</td>
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<td>a,g,e,b,c,f,d,j</td>
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<tr>
<td>Tool and Dye</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Injector</td>
<td>C</td>
<td>Yes-College</td>
<td>A - I intend to</td>
<td>e,a,b,d,c,g,h,j,f</td>
<td>Yes</td>
</tr>
</tbody>
</table>

1st place - 3 way tie: money benefits security
2nd place - tie: interesting make a difference
3rd place - tie: good super independenc
Miscellaneous Tables and Charts

Northern Indiana Workforce Investment Board
Strategic Skills Initiative
Mean Annual Wage, by SOC

<table>
<thead>
<tr>
<th>SOC</th>
<th>Title</th>
<th>EGR2 mean</th>
<th>Ind. Mean</th>
<th>U.S. mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>51-4121</td>
<td>Welders</td>
<td>$29,624</td>
<td>$32,020</td>
<td>$32,220</td>
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<tr>
<td>51-1011</td>
<td>Supervisors, First Line</td>
<td>45,981</td>
<td>47,210</td>
<td>48,290</td>
</tr>
<tr>
<td>51-9122</td>
<td>Painters, Trans. Equip.</td>
<td>28,555</td>
<td>31,680</td>
<td>37,590</td>
</tr>
<tr>
<td>51-4011</td>
<td>CNC Machine Ops*</td>
<td>34,364</td>
<td>32,090</td>
<td>31,830</td>
</tr>
<tr>
<td>31-9092</td>
<td>Medical Assistants</td>
<td>23,383</td>
<td>25,550</td>
<td>25,860</td>
</tr>
<tr>
<td>29-1111</td>
<td>Registered Nurses</td>
<td>47,883</td>
<td>49,100</td>
<td>55,680</td>
</tr>
<tr>
<td>29-1126</td>
<td>Respiratory Therapist</td>
<td>41,330</td>
<td>42,600</td>
<td>45,310</td>
</tr>
<tr>
<td>29-2071</td>
<td>Health Records Tech</td>
<td>23,533</td>
<td>26,120</td>
<td>28,160</td>
</tr>
</tbody>
</table>

*CNC Operator is the only wage in EGR2 greater than the Indiana and National averages, and this is because of the competition for workers in Kosciusko County, where there are only minimal, in-house training programs.

Source: www.bls.gov

Charts Comparing EGR2 MSAs (South Bend/Mishawaka, Elkhart/Goshen) With Selected Communities:

The following charts have been generated from data gathered during this Root Cause project. Our intent was to select a number of communities similar to those of EGR2 in terms of population and demographics, and then compare those communities on a number of variables. Altogether, a series of more than 40 variables have been researched; only a few are presented here. This material is intended to demonstrate graphically the contention of the Executive Summary of the Phase Two Report, namely that EGR2 is in a somewhat precarious position relative to other communities throughout the nation. Our economy continues to thrive, but in sectors that are declining elsewhere. These data suggest the dimensions in which EGR2 is beginning to lag, and as an aggregate they present a warning sign that regional changes are needed to prevent EGR2 from dropping to the levels of national trends in those sectors upon which the regional economy depends. The solution to these trends seems to be to enhance the traditional skills of the incumbent workforce, while at the same time preparing elements of that workforce to participate in emergent industries.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Reno, NV *</td>
<td>$38,155</td>
<td>121.20%</td>
<td>$62,100</td>
</tr>
<tr>
<td>Madison, WI</td>
<td>$35,471</td>
<td>112.70%</td>
<td>$71,100</td>
</tr>
<tr>
<td>Des Moines, Iowa</td>
<td>$33,639</td>
<td>106.80%</td>
<td>$63,900</td>
</tr>
<tr>
<td>Sioux Falls, SD</td>
<td>$33,217</td>
<td>105.50%</td>
<td>$59,100</td>
</tr>
<tr>
<td>Lexington, KY *</td>
<td>$32,118</td>
<td>102%</td>
<td>$56,200</td>
</tr>
<tr>
<td>Fargo, ND</td>
<td>$30,804</td>
<td>97.80%</td>
<td>$60,100</td>
</tr>
<tr>
<td>Green Bay, WI</td>
<td>$30,697</td>
<td>97.50%</td>
<td>$61,500</td>
</tr>
<tr>
<td>Huntsville, AL</td>
<td>$30,591</td>
<td>97.20%</td>
<td>$59,700</td>
</tr>
<tr>
<td>Boise, ID</td>
<td>$29,562</td>
<td>93.90%</td>
<td>$53,600</td>
</tr>
<tr>
<td>**South Bend, IN ***</td>
<td>$29,360</td>
<td>93.20%</td>
<td>$56,300</td>
</tr>
<tr>
<td>**Elkhart, IN *  **</td>
<td>$29,315</td>
<td>93.10%</td>
<td>$56,600 *</td>
</tr>
<tr>
<td>Grand Rapids, MI *</td>
<td>$29,188</td>
<td>92.70%</td>
<td>$60,900 *</td>
</tr>
<tr>
<td>Knoxville, TN</td>
<td>$29,124</td>
<td>92.50%</td>
<td>$49,300</td>
</tr>
<tr>
<td>Charleston, SC *</td>
<td>$27,797</td>
<td>88.30%</td>
<td>$55,900 *</td>
</tr>
<tr>
<td>Greenville, SC</td>
<td>$27,743</td>
<td>88.10%</td>
<td>$54,900 *</td>
</tr>
<tr>
<td>Benton Harbor, MI *</td>
<td>$27,572</td>
<td>87.60%</td>
<td>$52,100</td>
</tr>
<tr>
<td>Spokane, WA</td>
<td>$27,218</td>
<td>86.40%</td>
<td>$54,600</td>
</tr>
<tr>
<td>Springfield, MO</td>
<td>$26,209</td>
<td>83.20%</td>
<td>$49,400</td>
</tr>
</tbody>
</table>

* designates MSA

www.ffiec.gov/hmda/pdf/msa03inc.pdf
www.bea.doc.gov/bea/newsrel/MPINewsRelease.htm
### Wealth Creation

<table>
<thead>
<tr>
<th>City</th>
<th>Wealth Creation (GMP in U.S., Billions 2002)</th>
<th>Per Capita investment Income</th>
<th>Home Appreciation</th>
<th>2003</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td>2001</td>
<td>2002</td>
<td>2003</td>
</tr>
<tr>
<td>Grand Rapids, MI *</td>
<td>45</td>
<td>3,276,477</td>
<td>2,880,735</td>
<td>2,803,075</td>
</tr>
<tr>
<td>Knoxville, TN</td>
<td>23.5</td>
<td>2,836,290</td>
<td>2,836,492</td>
<td>2,772,020</td>
</tr>
<tr>
<td>Des Moines, Iowa</td>
<td>20</td>
<td>2,582,128</td>
<td>2,424,776</td>
<td>2,376,949</td>
</tr>
<tr>
<td>Madison, WI</td>
<td>19.8</td>
<td>3,368,282</td>
<td>3,224,681</td>
<td>3,163,325</td>
</tr>
<tr>
<td>Lexington, KY *</td>
<td>17.4</td>
<td>2,257,081</td>
<td>2,303,403</td>
<td>2,275,224</td>
</tr>
<tr>
<td>Spokane, WA</td>
<td>17</td>
<td>2,047,880</td>
<td>2,080,588</td>
<td>2,034,669</td>
</tr>
<tr>
<td>Charleston, SC *</td>
<td>16.3</td>
<td>2,539,878</td>
<td>2,495,612</td>
<td>2,439,862</td>
</tr>
<tr>
<td>Reno, NV *</td>
<td>15.8</td>
<td>3,558,495</td>
<td>3,653,783</td>
<td>3,782,062</td>
</tr>
<tr>
<td>Boise, ID</td>
<td>15.4</td>
<td>2,494,679</td>
<td>2,796,440</td>
<td>2,770,314</td>
</tr>
<tr>
<td>Huntsville, AL</td>
<td>11.8</td>
<td>1,735,728</td>
<td>1,796,976</td>
<td>1,775,856</td>
</tr>
<tr>
<td>Springfield, MO</td>
<td>11.4</td>
<td>1,704,504</td>
<td>1,773,911</td>
<td>1,744,442</td>
</tr>
<tr>
<td>Green Bay, WI</td>
<td>10.7</td>
<td>1,583,333</td>
<td>1,549,986</td>
<td>1,517,218</td>
</tr>
<tr>
<td>Elkhart, IN *</td>
<td>9.1</td>
<td>831,348</td>
<td>813,613</td>
<td>795,518</td>
</tr>
<tr>
<td>South Bend, IN *</td>
<td>8.6</td>
<td>1,552,311</td>
<td>1,599,557</td>
<td>1,569,008</td>
</tr>
<tr>
<td>Sioux Falls, SD</td>
<td>8</td>
<td>1,114,778</td>
<td>1,159,631</td>
<td>1,143,999</td>
</tr>
<tr>
<td>Fargo, ND</td>
<td>6.3</td>
<td>905,251</td>
<td>980,791</td>
<td>979,464</td>
</tr>
<tr>
<td>Benton Harbor, MI *</td>
<td>5.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Greenville, SC</td>
<td>4.6</td>
<td>2,550,908</td>
<td>2,567,770</td>
<td>2,521,315</td>
</tr>
</tbody>
</table>

* designates MSA


[www.bea.doc.gov/bea/regional/reis/default.cfm#a](http://www.bea.doc.gov/bea/regional/reis/default.cfm#a)

[www.mortgagebankers.com/industry/reports/03/ofheo_0902.pdf](http://www.mortgagebankers.com/industry/reports/03/ofheo_0902.pdf)
Educated Labor

<table>
<thead>
<tr>
<th>City</th>
<th>Labor Force Education 2000</th>
<th>B.A. degree granted per population age 18 – 24 (State)</th>
<th>Educated labor income bonus (State)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Madison, WI</td>
<td>48.2%</td>
<td>50.5% 55.5% 52.8%</td>
<td>7% 7%</td>
</tr>
<tr>
<td>Charleston, SC</td>
<td>37.5%</td>
<td>32.5% 38.7% 40.5%</td>
<td>9% 7%</td>
</tr>
<tr>
<td>Huntsville, AL</td>
<td>36.1%</td>
<td>38.5% 44.8% 48.2%</td>
<td>6% 9%</td>
</tr>
<tr>
<td>Lexington, KY</td>
<td>35.6%</td>
<td>30.6% 36.3% 38.9%</td>
<td>7% 10%</td>
</tr>
<tr>
<td>Fargo, ND</td>
<td>34.4%</td>
<td>61.9% 67.1% 66.7%</td>
<td>6% 5%</td>
</tr>
<tr>
<td>Greenville, SC</td>
<td>34.2%</td>
<td>32.5% 38.7% 40.5%</td>
<td>9% 7%</td>
</tr>
<tr>
<td>Boise, ID</td>
<td>33.6%</td>
<td>32.3% 33.5% 33.9%</td>
<td>6% 7%</td>
</tr>
<tr>
<td>Sioux Falls, SD</td>
<td>27.8%</td>
<td>55.2% 60.8% 61.3%</td>
<td>5% 6%</td>
</tr>
<tr>
<td>Spokane, WA</td>
<td>25.4%</td>
<td>37.5% 43.5% 42.8%</td>
<td>7% 6%</td>
</tr>
<tr>
<td>Reno, NV</td>
<td>25.0%</td>
<td>18.8% 26.2% 22.6%</td>
<td>6% 7%</td>
</tr>
<tr>
<td>Knoxville, TN</td>
<td>24.6%</td>
<td>33.3% 39.7% 41.6%</td>
<td>6% 8%</td>
</tr>
<tr>
<td>Grand Rapids, MI</td>
<td>23.8%</td>
<td>42.2% 47.4% 48.7%</td>
<td>9% 11%</td>
</tr>
<tr>
<td>Springfield, MO</td>
<td>23.0%</td>
<td>47.6% 55.9% 55.9%</td>
<td>8% 7%</td>
</tr>
<tr>
<td>Des Moines, Iowa</td>
<td>21.8%</td>
<td>56.8% 63.8% 62.7%</td>
<td>7% 6%</td>
</tr>
<tr>
<td>South Bend, IN</td>
<td><strong>20.3%</strong></td>
<td>45.7% 51.9% 52.0%</td>
<td>5% 9%</td>
</tr>
<tr>
<td>Green Bay, WI</td>
<td>19.3%</td>
<td>50.5% 55.5% 52.8%</td>
<td>7% 7%</td>
</tr>
<tr>
<td>Elkhart, IN</td>
<td><strong>13.4%</strong></td>
<td>45.7% 51.9% 52.0%</td>
<td>5% 9%</td>
</tr>
<tr>
<td>Benton Harbor, MI</td>
<td><strong>4.3%</strong></td>
<td>42.2% 47.4% 48.7%</td>
<td>9% 11%</td>
</tr>
</tbody>
</table>

*Share of the labor force aged 25 years and over with a bachelor’s degree

http://www.census.gov/

bachelor’s degree per 1000 18-24 year olds by state


http://measuringup.highereducation.org/stateprofiinet.cfm?myYear=2004&stateName=Indiana
Public School Performance

<table>
<thead>
<tr>
<th>City</th>
<th>Reading proficiency (%)</th>
<th>Math proficiency (%)</th>
<th>Students per teacher</th>
<th>Enrollment</th>
<th>Economically disadvantaged enrollment %</th>
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<tbody>
<tr>
<td>Fargo, ND</td>
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<td>na</td>
<td>16.2</td>
<td>8319</td>
<td>18.2</td>
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<td>na</td>
<td>Na</td>
<td>17.9</td>
<td>26211</td>
<td>31.5</td>
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<tr>
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<td>na</td>
<td>15.9</td>
<td>62103</td>
<td>31.7</td>
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<tr>
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<td>na</td>
<td>14</td>
<td>13740</td>
<td>32.5</td>
</tr>
<tr>
<td>Knoxville, TN</td>
<td>81.2</td>
<td>81.7</td>
<td>14.9</td>
<td>52659</td>
<td>na</td>
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<tr>
<td>Green Bay, WI</td>
<td>84</td>
<td>79</td>
<td>15</td>
<td>9399</td>
<td>21.1</td>
</tr>
<tr>
<td>Huntsville, AL</td>
<td>81</td>
<td>76</td>
<td>15.4</td>
<td>19807</td>
<td>32.9</td>
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<tr>
<td>Madison, WI</td>
<td>79.3</td>
<td>72.5</td>
<td>14.9</td>
<td>24913</td>
<td>35.6</td>
</tr>
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<td>27.7</td>
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<td>17.6</td>
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<td>36</td>
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<td>73.6</td>
<td>65.8</td>
<td>17.3</td>
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<td>35.5</td>
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<td>53</td>
<td>16.3</td>
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<td>61.7</td>
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<tr>
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<td>50.7</td>
<td>17.8</td>
<td>7833</td>
<td>30.2</td>
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<tr>
<td>Lexington, KY</td>
<td>58.3</td>
<td>48.1</td>
<td>12.8</td>
<td>32480</td>
<td>35.2</td>
</tr>
<tr>
<td>Benton Harbor, MI</td>
<td>56</td>
<td>38.1</td>
<td>17.5</td>
<td>4899</td>
<td>86.8</td>
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<td>Charleston, SC</td>
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<td>14.3</td>
<td>44109</td>
<td>52.3</td>
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<td>33.5</td>
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<td>64245</td>
<td>37</td>
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<td>16.7</td>
<td>24285</td>
<td>38.5</td>
</tr>
</tbody>
</table>

Public school performance
http://www.schoolmatters.com/
<table>
<thead>
<tr>
<th>City</th>
<th>Overall</th>
<th>Money</th>
<th>People</th>
<th>Infrastructure</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charleston, SC</td>
<td>B</td>
<td>B+</td>
<td>A-</td>
<td>C+</td>
<td>B</td>
</tr>
<tr>
<td>Des Moines, Iowa</td>
<td>B</td>
<td>B+</td>
<td>B</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>Greenville, SC</td>
<td>B</td>
<td>B+</td>
<td>A-</td>
<td>C+</td>
<td>B</td>
</tr>
<tr>
<td>Springfield, MO</td>
<td>B</td>
<td>B</td>
<td>B-</td>
<td>B-</td>
<td>A-</td>
</tr>
<tr>
<td>Boise, ID</td>
<td>B-</td>
<td>B+</td>
<td>B</td>
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http://results.gpponline.org/Documents/DOCTYPE_STATESUMSIDEBAR_127_1_0_2.pdf
Economic Growth

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Real Output Growth Rate

per capita income growth
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http://www.usmayors.org/metroeconomies/1004/metroeconomiestables_1004.xls

Labor force

Elkhart’s labor force productivity is much greater than the per worker productivity because the county has an in-migration of >14,100 workers daily. Hence the number of people employed is that much greater than the incumbent workforce.
## Entrepreneurial Attractiveness

**City**  | **Overall rank**  | **Young company rank**  | **Rapid growth rank**
--- | --- | --- | ---
Charleston, SC | 4 (mid-size city) | 2 | 6
Green Bay, WI | 5 (small city) | 4 | 10
Huntsville, AL | 7 (small city) | 7 | 15
Grand Rapids, MI | 9 (big city) | 8 | 9
Greenville, SC | 9 (mid-size city) | 8 | 9
Madison, WI | 6 (mid-size city) | 11 | 2
Knoxville, TN | 13 (mid-size city) | 12 | 14
Springfield, MO | 10 (small city) | 23 | 8
Sioux Falls, SD | 13 (small city) | 27 | 7
Lexington, KY | 30 (mid-size city) | 27 | 30
Spokane, WA | 16 (mid-size city) | 31 | 5
Boise, ID | 31 (mid-size city) | 33 | 24
**Elkhart-Goshen, IN** | 20 (small city) | 34 | 16
Reno, NV | 33 (mid-size city) | 34 | 34
Des Moines, Iowa | 36 (mid-size city) | 35 | 35
Fargo, ND | 46 (small city) | 74 | 25
**South Bend, IN** | 93 (small city) | 86 | 104
**Benton Harbor, MI** | 141 (small city) | 151 | 122

[http://www.entrepreneur.com/bestcities/region/0,5276,498-Small,00.html](http://www.entrepreneur.com/bestcities/region/0,5276,498-Small,00.html)
Literature Review

In addition to the articles, websites, and other publications cited in the main report, a number of sources were consulted for information and data during the preparation of the report. They include newspaper archives, both online and on microfiche, online magazines, newsletters and periodic economic reports, and other library resources. The following listing of material is not inclusive, but does indicate the extent of the research conducted:

http://www.mmsonline.com Modern Machine Shop online, an excellent source of articles about not only the present state of the industry, but also future and global trends.

http://www.cadcamforum.net A good source of news and articles about technological software, especially in terms of future developments.

http://www.aws.org The American Welding Society is working hard to improve the social image of the industry, as well as to predict trends into the future. Especially helpful is www.aws.org/research/future.html

http://www.advancedmanufacturing.com This site is a treasure trove of information about the state of American manufacturing, especially as compared with global developments - i.e. India and China. In addition, there are articles about productivity and technology.

The Robert Wood Johnson Foundation, http://www.rwjf.org has published a fairly good summary of the national nursing shortage, in which significant criticism is leveled at local government failures to manage workforce development.

www.salary.com has published some interesting articles about workforce shortages and strategies, such as tuition reimbursement, to deal with the problem.

http://www.incontext.indiana.edu produces frequent analyses of workforce issues, including regional material.

http://www.doleta.gov presents a summary of the administration’s “High Growth Job Training Initiative,” the parent of our efforts in the Strategic Skills program.

The Indiana Department of Workforce Development publishes periodic “Labor Market Review,” which was consulted for data concerning unemployment and labor force population in 2005.
http://www.business2.com was a source of summary articles about emerging industries and workforce skill sets to meet those trends.


http://www.doe.state.in.us/core40 provided a listing of current and near-term Indiana high school course requirements. Core 40 came under strong criticism during many of our focus group sessions.

Five regional newspapers were mined for data, although the most success was found at the South Bend Tribune website: http://www.southbendtribune.com  This site includes archives of articles dating from 1994; NIWIB researchers searched issues from 2000-2005 for articles relevant to the Root Causes report.
Excerpts from:
“What We Know About Employer-Provided Training: A Review of Literature”
John H. Bishop, New York State School of Industrial and Labor Relations,
Cornell University, Working Paper #96-09; July, 1996

The impact of school-based training on wages appears to depend on who pays for it. Lowenstein and Spletzer found that such training did not raise wage rates when financed by the worker, but did raise wage rates when the employer financed it. Lengermann's analysis found that school-based training financed by one's employer raised wage rates by 8.4 percent and government financed training raised wage rates by a non-significant 12 percent. When, however, the individual paid all of its costs, it had no impact on wage rates. It would appear that, at least in the short run, School-based training pays off in higher wages only when employers or government sponsors it, not when the worker pays for it. This suggests that employers are more effective trainers than schools and better able to pick effective school based training programs than individual workers. Apparently the productivity benefits of the general training selected by the employer are so large that employers can afford to both pay much of its costs and to offer wage increases as well.

School based vocational training is well signaled to the labor market by diplomas and school reputations, so one would expect productivity benefits of training to accrue to the trainee in the form of less unemployment, better jobs and higher earnings. One would not expect employers to be able to recruit significantly more productive workers from such sources and not pay them for their greater productivity. This appears to be the case for the training provided by public institutions (see column 5 of Table 4). Such training helps the student get a better job, but given the job obtained it does not appear to be associated with workers being more productive than others hired for that job.

Marcie Tyre's (1990) examination of several plants in a single multi-national corporation found that the American plants took longer to start up and had flatter learning curves than plants in Italy and Germany. She attributed this in part to less development and cross-training of workers. A study of hot-roll steel facilities by Ichniowski, Shaw and Prennushi found that plants using high performance work systems had less down time and produced higher quality output. Higher levels of training were one of the components of the high performance work systems that generated these positive outcomes.

Summary: The studies reviewed above have established that traditional employer provided training raises individual productivity and wage rates. Most of the training incidents in these studies were not occasioned by modernization or a TQM reorganization. Taken altogether the economic literature on training suggests that, as
long as the company is initiating and paying for training, one can be pretty confident that most of these investments are profitable both for the worker and the firm.

American employers appear to devote less time and resources to the training of entry level blue collar, clerical and service employees than employers in Germany and Japan. In the automobile industry, for example, newly hired assembly workers receive 310 hours of training in Japan and 280 hours of training in Japanese managed plants located in the US, but only 48 hours of training at US owned plants in the US. Averaged over all auto assembly workers, annual training time is nearly three times greater in plants located in Japan and about 80 percent greater at Japanese plants located in the US. These differentials in training are one of the reasons why Japanese plants are more productive than American plants and Japanese built cars have such a reputation for quality.

Second, turnover has a powerful effect on employer decisions to provide training to employees. Employers, not workers, finance most of the training that is undertaken in U.S. firms. Employers will not invest in training unless they believe it will generate a monthly return that exceeds the sum of the monthly turnover rate (generally above 2% per month in the US and sometimes greater than 8%/mo.) and the cost of capital (which is about 1.5 percent per month or 18% per year). Monthly turnover rates are typically much larger than the cost of capital and are also more variable. If turnover is 5% per month and the cost of capital is 1.5% per month, the cash flow yield of the training investment rate of return must exceed 78 percent per year if the investment is to make economic sense. Even when turnover is a very low 2 percent per month, the required cash flow yield is still quite high: 42 percent per year.

Training thus becomes a sensible investment for an American employer only when it yields very rapid and very large returns. The amount of training employers are willing to finance is negatively related to the projected turnover rate of the trainees.

High wage American employers have historically found it easy to recruit workers who have already been trained elsewhere. They have not been forced to train their own skilled workers as employers in Germany and Japan have. The greater availability of skilled and semi-skilled workers on the outside labor market has five causes:

- Higher average unemployment rates during the postwar period than in Germany and Japan.
- Higher turnover rates and the short term character of unemployment in the U.S. means that at any given unemployment rate an American firm will receive more applications from trained and qualified workers during a month than a comparable German or Japanese firm. These applicants are not lemons as they tend to be in Japan and Germany. Since layoffs are common and are generally based on seniority in the U.S., there is less stigma to being laid off or being unemployed than there is in Japan and Germany.
• Large wage differentials between firms in the same or closely related industries allow high wage firms to raid the work force of their lower wage competitors. This strategy is available because most industrial unions have not organized their entire industry and because contract provisions are not extended to non-union firms by government edict as occurs in Germany. Wage differentials between different industries and between employers of different size are, consequently, larger in the U.S. than in Germany or Japan.

• American secondary schools, community colleges and universities began providing occupation specific training to youth and adults many decades before German and Japanese schools and colleges entered this market. The early availability of school based occupational training in the U.S. helped cause the decline of apprenticeship training.

• Licensing restrictions on who can do particular jobs are less prevalent in the U.S., so there are fewer artificial restrictions on who can be hired for a particular job. If already trained workers are not available, American employers can engage in just-in-time training. The result is a bias toward an undertrained workforce rather than an overtrained one. German and Japanese training practices evolved in an era of tight labor markets. Older workers who had been laid off by other employers were too few and were viewed as lemons, so firms sought talented trainees in graduating classes of local schools. American training institutions developed in a very different environment—relatively high unemployment, high turnover, large immigration flows, large numbers of graduates from school based occupational training programs and a free and highly flexible labor market.

Studies by Mincer and Higuchi (1988), Bartel and Sicherman (1993) and Tan et al (1991) have found that workers in industries experiencing high rates of technological progress receive more training than workers in industries with low rates of technological progress. This finding is consistent with a view that heavy investments in training cause increases in productivity, but it is also consistent with a view that causation also runs in the opposite direction—high rates of investment and technological progress increase the demand for and the profitability of training. Because the U.S. had such a large productivity lead at the end of the Second World War, American productivity growth in the postwar period has necessarily been below that of Germany and Japan. This has no doubt contributed to the lower level of training investment in the US.

In the U.S. labor market, hiring decision makers have a very difficult time assessing the quality of the general human capital obtained from on-the-job training at previous jobs. This fact increases turnover, lowers wages, and lowers productivity. Since part of the reason for getting general training is to improve the worker's marketability with other employers, not recognizing the benefits of this training reduces the incentive to invest in general on-the-job training.

The poor quality of the information about a job candidate's general skills and the resulting underinvestment in general training (both on the job and in schools) is a major institutional flaw of U.S. labor markets. Some formal systems for certifying the
competencies gained through on-the-job training exist in the United States, but they have not achieved widespread usage (Wills 1993). The apprenticeship systems of Switzerland, Austria, and Germany are probably the best examples in the world of widespread and effective systems of on-the-job training and competency certification.

Governmental institutions and regulations are an important reason why American employers do a poor job of selecting entry-level workers and experience very high rates of turnover. American employers are not able to obtain good information on the skills and competencies of young job applicants largely because of barriers to the free flow of information about job applicants—such as EEO testing guidelines, the failure of some high schools to send out transcripts, large variations in grading standards across schools and across courses within a school, and the threat of law suits if bad recommendations are given. The worker trait that best predicts turnover is dependability and work habits (Bishop 1993). Reference checks (at both schools and former employers) are one way to assess this trait. However, the threat of lawsuits by former employees who have had difficulty finding a new job because of unfavorable references has made many employers reluctant to give honest references. Personnel offices are particularly sensitive to the legal dangers of giving references, so the information content of their references has deteriorated the most. Bishop (1993) found that most of the references given by personnel offices were misleading.

Employers believe that school performance is a good predictor of job performance and turnover, but they have great difficulty getting such information.

An easier way to empirically examine the issue of the under provision of training is to study whether the training market indeed behaves in the way predicted by standard OJT theory. The theory of on-the-job training says that the worker pays the full costs of general training by accepting a lower wage rate while training is underway and then reaps the full benefits in the form of a higher wage rate regardless of whether there is subsequent turnover. Is this correct: Do workers pay all the costs of and receive all the benefits of training in skills that are useful at other firms? Do workers and employers share the costs and benefits of specific training? If employers are paying some of the costs of general training, they are not doing it for altruistic reasons. They are comparing the training costs incurred to the expected productivity benefits the firm will receive from the workers who stay at the firm. Benefits received by other employers and by the trainee will have zero weight in their calculation. Turnover, thus, causes the firm to take only a portion of the true social benefits of general training into account and under provision results.

Studies of who pays the costs of apprenticeship training have been conducted in Germany, Great Britain, and the United States (Noll et al. 1984; Ryan 1980; Jones 1985; Weiderhold-Fritz 1985). Despite the transferable character of the training and significant turnover, these studies concluded that employers made large investments in general training that were not recovered during the apprenticeship. A welding apprenticeship program at a major U.S. shipyard was the subject of the first of these studies (Ryan 1980). The wage profile was quite flat—starting at $3.99 and topping out at $5.26 after
about two years on the job—even though the investments in general training were very considerable. Inexperienced new hires spent 36 days in vestibule training before beginning work. During the first week following vestibule training, the trainee's output net of repair requirements was less than 10 percent of an experienced worker's output. Thirty-seven weeks after being hired it reached a level of 55 percent and at 60 weeks a level of 80 percent of an experienced worker's output. Despite the fact that the local economy was in deep recession, separation rates were extremely high: 10.8 percent per month for beginners and 6.3 percent per month for those with 12 to 24 months of tenure. The shipyard accounted for about one-fifth of the welding jobs in the area. When trained welders left the shipyard, they typically found better paying welding jobs at other local employers.
I. CALL TO ORDER

Juan Manigault called the meeting to order at 8:45 a.m.

Juan shared that the purpose of today’s meeting was to present the Root Cause Analysis for Critical Occupational Shortages. During the meeting, staff will present the results from focus groups, employee surveys, student interviews and our analysis of the literature relevant to these worker and skills shortages.
II. POWER POINT PRESENTATION – DAN HENDRICKS AND CHUCK PRESSLER

Several attendees questioned the data slides on pages 6 & 7. Juan Manigault provided an explanation.

III. QUESTIONS/COMMENTS

Kathy Sokolowski questioned where the data came from regarding the Business Churn slide. Chuck explained that it covers both advanced and traditional manufacturing and the data was received from the National Conference of Mayors.

Jean Perrin voiced her concern with not including information in the report on how employers feel that the demand to get the product off the floor does not allow workers to take time off for training during regular business hours. Jean also said soft skills are barriers for employees, e.g., getting to work on time, attendance, etc.

Chuck responded that SSI has provided fairly direct indications as to how the funds are to be spent. The state will be reluctant to address soft skills and language barriers because they are not immediately affected by SSI-types of programs.

Fred Thon offered a motion to approve SSI Phase 2 – Root Causes Report; motion was seconded by Bob Abene. Motion carried.

IV. BRAINSTORM SESSION – SOLUTIONS

The group brainstormed on solutions to skill shortages in the following categories: Welders, CNC Operator, Supervisor, Painter, Registered Nurse, Medical Assistant, Respiratory Therapist and Coders. (Summary attached)

Meeting adjourned at approximately 10:30 A.M.
Strategic Skills Initiative
Phase 2 – Root Causes Report

Deliverables:
1. Identify skill shortages in strategic occupations.
2. Determine root causes behind occupational skill shortages.
3. Create solutions to alleviate critical skill shortages.

Root Causes...
- Seeking causes of the constraints (bottlenecks) to economic growth and wealth creation.

Deliverables continued...
4. Implement solutions with our partners to alleviate critical skill shortages.
5. Verify the solutions are being implemented successfully.

How did we get here?
Purpose of SSI:
Identify and alleviate critical skill shortages in strategic occupations that are essential to the economic growth and prosperity of our Region

1st Tier Occupations Identified:
Health Care:
- Medical Assistants
- Registered Nurses
- Coders
- Respiratory Therapists
1st Tier Occupations Identified:

Advanced Manufacturing:
- First-Line Supervisors
- CNC Machinists/Operators
- Welders/Solderers
- Painters (Transportation Equipment)

Plymouth Foundry
- Ferco Coatings Corp.
- Dexter Axle
- Indalex inc.
- Bicomet
- Dalton Corp.
- AM General
- Syscon Int'l
- AE Techron
- Amerimax Laminated Products
- Zimmer

Thank you to key industries:

Health Care:
- Memorial Hospital
- Kosciusko Community Hospital
- Wood Lawn Hospital
- Bremen Community Hospital
- Goshen Health System
- St. Joseph Regional Medical Center
- Elkhart General Hospital
- Long Term Care Organizations

Methodology

- Mining the Literature
- Root Cause Focus Groups
- Interviews
- Surveys:
  - Employee Feedback
  - Human Resources
  - Post Secondary Students
  - Secondary Students
  - Schools – H. S., technical, college

Manufacturing:
- Polygons
- Plastics Solutions
- NIBCO
- Nyomicraft
- Heslier Tank & Mfg.
- Lock Joint Tube
- Bell Morse Tube
- Delta Tools Mfg.
- Daiman Products Co.
- Allied Specialty Precision
- Curtis Products
- General Sheet Metal Works
- Dutchmen Mfg.
- Phillips Products
- Ventline
- Textron Fastening Systems
- Ultimaster
- Paragon Medical
- Master Metal Engineering

How many causes do you think we found in our research?
Mining The Literature:
- Internet web sites.
- Manufacturing groups.
- Corporations.
- News services.
- Economic Forecasters.
- Occupational Associations.
- Newspapers.
- Periodicals.
- Government documents.
- Industry publications.

Our Findings
How many causes?

Surveys:
- Employee Feedback Survey.
- Secondary Schools Data Survey.
- Secondary Schools Student Survey.
- Post-Secondary School Data Survey.
- Post-Secondary School Student Survey.
- Human Resource Director Survey.

Findings - General
- Erosion of cultural values.
- Educational system issues.
- Industry failures.
- Economic barriers.
- Family pressures.

Focus Group Processes:
- Brainstorm for causes.
- Affinity Diagram for grouping like causes.
- Relational Diagram for finding root cause(s) and root effect(s).

Drilling Down…Regional Causes
- Traditional students are not prepared for real world work experiences that require valued basic life skills, both technical skills and soft skills.
- Math skills are inadequate for today’s technical manufacturing jobs.
- The cost of time, discipline, dollars and effort are not viewed as worth it to obtain technical skills needed for higher wages. Entitlement has become today’s value.
- Lack of awareness by students of high wages in skilled health care and manufacturing technical occupations.
Regional Causes Continued

- Guidance counselors, teachers and administrators guide students toward four-year degrees even though only 25% will need or use their degree.
- Non-four-year destined students are viewed as second-class to college-bound students.
- Teachers are mandated to teach to ISTEP+ negating an emphasis on life and work ethic skills.

Root Causes By Occupation

Manufacturing

- Specific root cause: Lack of supervisory relational skills.
- Other specific causes:
  - No training, coaching or mentoring of recently promoted or hired supervisors
  - Promoting good technical workers with no relational or communication skills
  - Inadequate pool of qualified workers to promote that have both technical and relational/communication skills

Front Line Supervisors

- Specific root cause: Lack of training capacity.
- Other specific causes:
  - Lack of training with measuring devices (at secondary level)
  - Inadequate math and computer skills (at secondary level)
  - Training opportunities in the field are not utilized by companies concerned with profit

EGR2 Manufacturing Summary

- 1. Inadequate on-the-job training.
- 2. Companies must make an immediate profit today.
- 3. Secondary schools limit exposing students to technician, apprenticeships, manufacturing opportunities and Junior Achievement programs.
- 4. There is a decline of voc-tech education.
- 6. Gender bias toward manufacturing being a male-dominated culture.

EGR2 Health Care Summary

- Not seen as a good profession to go into due to hours, being underappreciated and overworked with excessive stress.
- Educational opportunities not available for all those desiring to enter the health care field.
- Supply is inadequate to meet the demand due to educational issues (see specific occupation).
- Secondary schools limit exposing students to technical health care opportunities.
- Gender bias toward health care being a female-dominated culture.
- Personal economic issues hinder education.

CNC Machinist/Operators

- Specific root cause: Lack of training capacity.
- Other specific causes:
  - Lack of training with measuring devices (at secondary level)
  - Inadequate math and computer skills (at secondary level)
  - Training opportunities in the field are not utilized by companies concerned with profit
Welders

- Specific root cause: Lack of high school awareness of manufacturing realities.
- Other specific causes:
  - Learned about welding only because worked in factory with welders
  - Turnover – leave quickly for more money.

Registered Nurses

- Specific root cause: Inadequate funding of Nursing School faculty lines by General Assembly
- Other specific causes:
  - Lack of qualified MSN-level instructors
  - Lack of financial support for MSN-level programs
  - Faculty salaries are not competitive with hospital wages

Painters (Transportation Equipment)

- Specific root cause: Lack of skilled training program.
- Other specific cause:
  - Turnover.
  - Lack of experienced new hires.

Medical Assistants

- Specific root cause: Uncompetitive wages and quality of life in hospitals
- Other specific causes:
  - Faculty salaries not competitive with other establishments
  - Social devaluation of lower-level health care occupations

Respiratory Therapists

- Specific root cause: Lack of funded regional educational program
- Other specific causes:
  - Poor social image of work done by respiratory therapists
  - Lack of regional attractiveness to in-migrating graduates
Coders – Information Technicians
- Specific root cause: Low wages for high skill expectations
- Other specific causes:
  - Inadequate training capacity at local institutions
  - Changes in certification requirements now including 95% accuracy requirement
- Internet: Coders can be hired by internet companies, do work online, for higher pay than can be earned locally.

What are employees saying?
- Manufacturing:
  - Got more career information from peers & parents than from teachers/counselors/administrators. (1)
  - Education did not prepare them for their occupation. (3)
  - Most workers would like to be better trained and expect employer assistance. (6)
- Health Care
  - Went into health care because of personal interest. (1)
  - Most thought they were trained adequately. (2)
  - Most want more training with employer assistance. (6)
- More health care employees than manufacturing employees are satisfied with their jobs, except for Medical Assistants.

Regional Outlook

What are employees saying?
- Manufacturing:
  - Got more career information from peers & parents than from teachers/counselors/administrators. (1)
  - Education did not prepare them for their occupation. (3)
  - Most workers would like to be better trained and expect employer assistance. (6)
- Health Care
  - Went into health care because of personal interest. (1)
  - Most thought they were trained adequately. (2)
  - Most want more training with employer assistance. (6)
- More health care employees than manufacturing employees are satisfied with their jobs, except for Medical Assistants.
Real Output Growth Rate (projected for 2000-2006)


Causes...

- Lack of investment in cutting edge technology
- Insufficient basic, technical, relational and future flexible skills training
- Inadequate lean organizational practices
- Lack of regional leadership vision

Business Churn, 2001-2002

5 minutes

Wages

<table>
<thead>
<tr>
<th>SOC</th>
<th>Title</th>
<th>EGRD</th>
<th>U.S. Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>31-431</td>
<td>Welders</td>
<td>$29,624</td>
<td>$30,130</td>
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<tr>
<td>31-611</td>
<td>Supervisors, First Line</td>
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<td>31-802</td>
<td>Painters, Trans. Equip.</td>
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<td>31-603</td>
<td>CNC Machinists</td>
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<td>31-902</td>
<td>Medical Assistants</td>
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<td>20-1101</td>
<td>Respiratory Therapists</td>
<td>40,805</td>
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<td>20-263</td>
<td>Health Records Tech</td>
<td>22,603</td>
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Average Annual Wage

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<th>Position</th>
<th>Avg. Hourly Rate</th>
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<tbody>
<tr>
<td>Medical Assistant</td>
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<td>Respiratory Therapist</td>
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<tr>
<td>Health Records Tech</td>
<td>$17.80</td>
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</table>

U.S. mean

Ind. Mean

EGRD mean

Title: SOC (Nov. 2004)