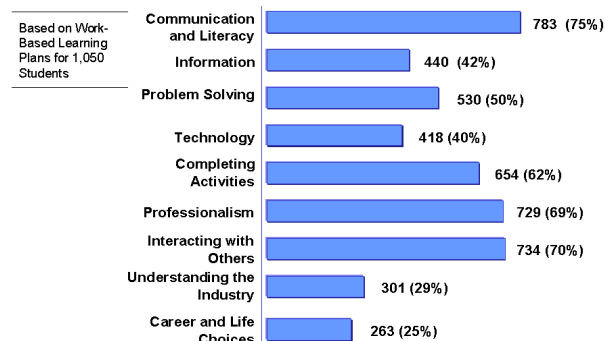


# Massachusetts Work-Based Learning Plan Skill Gain Study

## Executive Summary

During the 2000-2001 program year, Massachusetts School to Career/Connecting Activities providers collaborated on a statewide study of the student experiences and skill gains reflected in the Massachusetts Work-Based Learning Plan. Each region contributed a sample of Work-Based Learning Plans, creating a statewide sample of over one thousand students. This study looks at what competencies are used by students in their work-based learning experiences, what skill gains are documented, and factors that contribute to that skill gain.

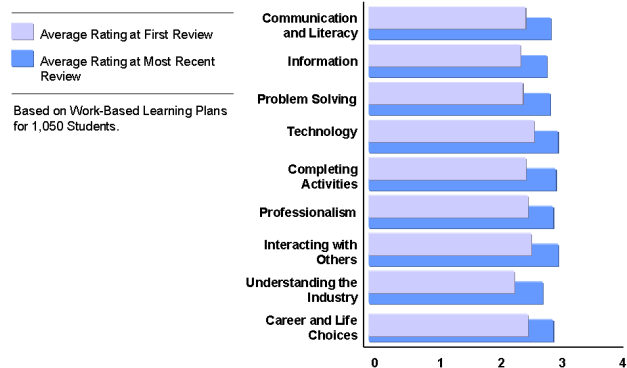
### Which Competencies Were Used?



**The Work-Based Learning Plan.** The Work-Based Learning Plan includes a job description, a list of tasks to be performed by the student, a checklist showing what competencies are relevant to each task, and an evaluation form that asks the supervisor to evaluate the student's work in each of the applicable competencies, set goals and make comments.

**Competencies Used.** Students and supervisors may focus on just a few of the nine competencies, generally focusing on 4-5 competencies, as shown in the graph. Most common choices include Communication and Literacy, Interacting with Others, Professionalism, Completing Entire Activities, and Problem Solving.

### Did Students Gain Skills?



**Skill Gains.** Evaluations are generally conducted once at the beginning of a job or internship and again near the conclusion of the placement. For longer term placements, evaluations may occur at several different intervals. Students showed clear skill gain during their work-based learning experiences. The graph contrasts the competency ratings for the first review and the most recent review for the 1,050 students in the sample. For each of the nine competencies, students showed statistically significant levels of skill gain. A variety of factors affect skill gain. For example, the thoroughness of the job description (as measured roughly by its length) and the use of explicit goal statements positively affect skill gain.

**About the Study.** This study looks at job descriptions, competencies used and student skill gain in a variety of job titles and industries and in different types of placements, ranging from formal, highly structured internship programs sponsored by major businesses and non-profit agencies to individual placements in small businesses where students may even write their own job description. The study is useful both for evaluating the effectiveness of work-based learning placements and for identifying strategies for enhancing student success. For more information about the study or about Work-Based Learning in Massachusetts, please contact: Keith Westrich, Massachusetts Department of Education, 350 Main Street, Malden, MA 02148. Phone: 781-338-3902. Email: kwestrich@doe.mass.edu.

# Massachusetts Work-Based Learning Plan Skill Gain Study

## Introduction

During the 2000-2001 program year, Massachusetts School to Career/Connecting Activities providers collaborated on a statewide study of the student experiences and skill gains reflected in the Massachusetts Work-Based Learning Plan. Each region contributed a sample of Work-Based Learning Plans, creating a statewide sample of over one thousand students. This study looks at what competencies are used by students in their work-based learning experiences, what skill gains are documented, and factors that contribute to that skill gain.

## Competencies Used

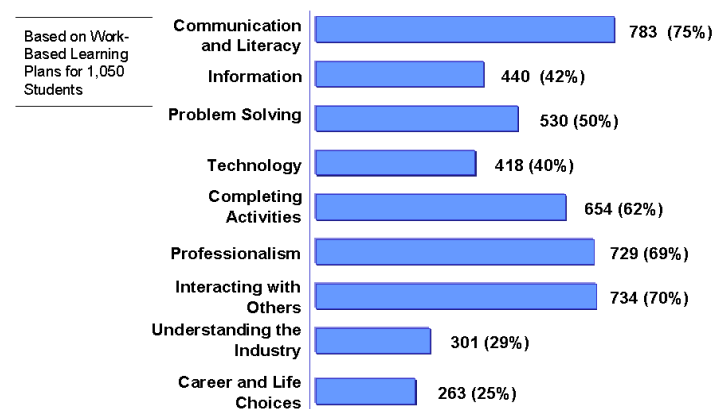
**The Work-Based Learning Plan.** The Work-Based Learning Plan includes a job description, a list of tasks to be performed by the student, a checklist showing what competencies are relevant to each task, and an evaluation form that asks the supervisor to evaluate the student's work in each of the applicable competencies, set goals and make comments.

The Work-Based Learning Plan is based on nine competencies. These nine competencies, which were identified through statewide task force meetings, focus groups and other conversations with business and educators, are competencies widely used in school, college and careers:

- 01: Communication and Literacy
- 02: Organizing and Analyzing Information
- 03: Problem Solving
- 04: Using Technology
- 05: Completing Entire Activities
- 06: Professionalism
- 07: Interacting with Others
- 08: Understanding All Aspects of an Industry
- 09: Career and Life Choices

**Competencies Used.** Students and supervisors may focus on just a few of the nine competencies, generally focusing on 4-5 competencies. Most common choices include *Communication and Literacy*, *Interacting with Others*, *Professionalism*, *Completing Entire Activities* and *Problem Solving*.

### Which Competencies Were Used?



## Competencies Used: By Industry Cluster

The choice of competencies varies slightly by industry cluster. For example, work-based learning plans for students working in the *Technical and Engineering* industry cluster were especially likely to focus on Problem Solving, Technology, Understanding All Aspects of the Industry, and Career and Life Choices.

The study uses seven industry clusters for analysis. These seven clusters are the seven used by the Massachusetts Department of Education for the Certificate of Occupational Proficiency and for many other projects. The second half of this report provides definitions of each cluster, statistics, and sample job descriptions. The clusters are:

- \* Arts, Media, Communications and Technology
- \* Business, Finance and Marketing
- \* Construction and Design
- \* Environmental, Natural Resources and Agricultural Sciences
- \* Health, Human Services and Education
- \* Hospitality, Tourism and Recreation
- \* Technical and Engineering

<b>Competencies Used: By Industry Cluster</b>								
<i>Percent of Students in Each Industry Cluster Who Had this Competency in Their Work-Based Learning Plan</i>								
	<i>ALL</i>	<i>Arts, Media, Comm. and Tech.</i>	<i>Business, Finance and Marketing</i>	<i>Construction and Design</i>	<i>Environmental, Natural Resources and Agricultural Sciences</i>	<i>Health, Human Services and Education</i>	<i>Hospitality Tourism and Recreation</i>	<i>Technical and Engineering</i>
<i>Communication and Literacy</i>	75%	71%	73%	73%	<b>84%</b>	<b>77%</b>	73%	48%
<i>Information</i>	43%	43%	<b>50%</b>	<b>53%</b>	27%	37%	38%	30%
<i>Problem Solving</i>	50%	<b>57%</b>	45%	47%	31%	<b>58%</b>	45%	<b>52%</b>
<i>Technology</i>	40%	<b>62%</b>	<b>52%</b>	31%	31%	25%	28%	<b>52%</b>
<i>Completing Activities</i>	62%	<b>63%</b>	56%	<b>64%</b>	<b>74%</b>	<b>70%</b>	53%	39%
<i>Professionalism</i>	69%	58%	66%	<b>78%</b>	48%	<b>80%</b>	59%	43%
<i>Interacting with Others</i>	70%	58%	61%	<b>76%</b>	<b>90%</b>	<b>77%</b>	<b>72%</b>	38%
<i>Understanding the Industry</i>	29%	25%	21%	<b>36%</b>	29%	<b>34%</b>	27%	<b>39%</b>
<i>Career and Life Choices</i>	25%	21%	20%	<b>33%</b>	21%	<b>29%</b>	23%	<b>30%</b>

Figures are shown in **bold** if the percent of the Work-Based Learning Plans in this industry cluster using this competency was above the overall average for the sample.

These figures show that the nine competencies are fairly universal across all industry clusters. Communication and Literacy, Interacting with Others, Professionalism, Completing Activities, and Problem Solving are among the most frequently-chosen competencies in most of the industries.

The figures also show some interesting patterns. For example, in the *Construction and Design* cluster, Work-Based Learning Plans focused on a broad range of competencies that reflect the goals of many apprenticeship programs - developing a broad understanding of the industry, developing a professional work ethic, building problem solving skills, and developing skills for interacting with other members of a team. In the *Business, Finance and Marketing* industry cluster, Work-Based Learning Plans emphasized working with information and with technology. In the *Environmental* sector, where many of the students worked in nature centers and other educational programs, many Work-Based Learning Plans focused on communication, completing activities/projects and interacting with others.

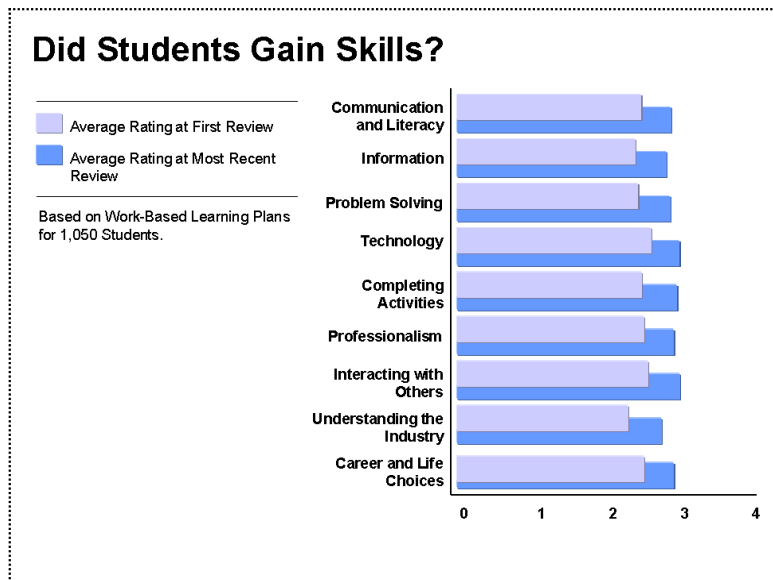
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## Skill Gain

Evaluations are generally conducted once at the beginning of a job or internship and again near the conclusion of the placement. For longer term placements, evaluations may occur at several different intervals. Evaluations are based on a four-point scale, ranging from Needs Development to Competent to Proficient to Advanced. In this study, the numeric equivalent of this scale was used (Needs Development equals 1 through Advanced equals 4) to calculate:

- \* Average rating at the first review
- \* Average ratings at the most recent review
- \* Change between the first and most recent review.

Students showed clear skill gain during their work-based learning experiences. The graph contrasts the competency ratings for the first review and the most recent review for the 1,050 students in the sample. For each of the nine competencies, students showed significant levels of skill gain.




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## Factors That Influence Skill Gain

A variety of factors affect skill gain. For example, the thoroughness of the job description (as measured roughly by its length), and the use of explicit goal statements positively affect skill gain.

In order to compare skill gain among groups for this study, an average level of skill gain was calculated based on the average change in each applicable competency. Overall, students gained an average of .41 points on the competencies between the first and most recent review. (See the technical notes in the end of this report to see how this figure was calculated.) This average skill gain figure was calculated for the group overall and for a wide variety of subgroups of students. Groups that showed above average levels of skill gain include students with longer (more detailed) job descriptions, students whose plan focused on 3-6 competencies, students in companies that hosted 5 or more student interns, students whose plans included explicit written goals, and students in three industry clusters: Health, Human Services and Education, Hospitality, Tourism and Recreation, and Construction and Design.

<b>Groups with Above-Average Skill Gain</b>	
	<b><i>Average Level of Skill Gain (for all applicable competencies)</i></b>
Overall Average	.41
Students with <b>longer job descriptions and task lists</b>	.51
Students whose WBL Plans focus on <b>3-6 competencies</b>	.52
Students in companies with <b>5 or more student interns</b>	.47
Students whose WBL Plans have explicit <b>written goals</b>	.44
Students in the <b>Health, Human Services and Education</b> Cluster	.50
Students in the <b>Hospitality, Tourism and Recreation</b> Cluster (excluding fast food/national chain stores)	.47
Students in the <b>Construction and Design</b> Cluster	.44

These findings should not be used to create rigid formulas for success, such as everyone must focus on 3-6 competencies or students should be placed in groups of five or more or Health, Human Services and Education is the best cluster.

But these findings clearly suggest that student who are working in settings where the supervisors and companies display a strong commitment to the program show the most skill gain.

1. A **longer-than-average job description and task list** suggests that the supervisor is dedicating time and energy to working with the student. There were 376 students whose job description plus list of tasks had 52 words or more ... generally two long sentences for the job description and about five one-sentence descriptions of the students tasks.
2. Work-Based Learning Plans that focus on **3-6 competencies** often reflect a high level of attention to listing the student's tasks and identifying competencies that the student will use. There were 582 students whose Work-Based Learning Plans focused on 3-6 competencies.
3. Similarly, the use of explicit **written goals** in the Work-Based Learning Plan shows commitment to helping the student gain skills. (About one-third of the students in the sample had explicit written goals in the Work-Based Learning Plans in the sample database, but there may have actually been additional students who had hand-written goals that did not get included in the typed copy of the plan.)
4. Companies with **five or more student interns** have clearly made a company-wide commitment to the program, and supervisors at these companies often receive training and/or encouragement in their role as supervisors and mentors. There were 469 students in the sample who were at companies with five or more student interns. (Because this study looks at only a sample of students, the actual number and percentage would be higher in a full count of placements.)

5. In the **industry clusters** with the highest skill gains, students tended to have longer (more detailed) job descriptions and, in many cases, were part of a formal summer jobs program, after-school internship program, or an internship related to student's career and technical program. These industry clusters included Health, Human Services and Education; Hospitality, Tourism and Recreation (but excluding fast food chains); and Construction and Design.

High skill gain was not limited to students and jobs in these clusters. Outstanding work-based learning experiences were found in ***all of the industry clusters as seen in the second part of this report.***

The initial rating is also important in some cases, since students who receive the highest rating (Advanced) at the first review cannot get a higher rating at subsequent reviews. Students who had above-average initial reviews (but less change between the first and most recent review) include students who wrote their own job descriptions, students working in small businesses, and students in the Arts, Media, Communications, and Technology industry cluster.

1. There were at least 34 students (about 3% of the sample) who **wrote their own job descriptions** (as indicated by first person voice in the job description). These students had high initial ratings but relatively less change in skill between the first and most recent review. (However, a small subgroup of these students who wrote their own job descriptions and whose supervisors provided goal statements during the first evaluation had above-average levels of skill gain.)
2. There were at least 101 students who worked in **small, private business** (with fewer than 50 employees). Work-Based Learning Plans for these students frequently focused on competencies like *Career and Life Choices* and *Understanding the Industry*, and had high initial ratings but relatively less change in rating between the first and most recent review.
3. The 84 students in the **Arts, Media, Communications and Technology** industry cluster generally had jobs that require relatively advanced writing and technology skills, and tended to have high initial ratings.

### ***The Work-Based Learning Plan As An Evaluation Tool***

This report shows how data from Work-Based Learning Plans can be used to analyze and evaluate student experiences and skill gain. This report also illustrates that the Work-Based Learning Plan is useful as a tool for program evaluation as well as for evaluation of individual student performance.

***The Work-Based Learning Plan is a valuable evaluation tool because it provides a non-obtrusive method of gathering data.*** A current emphasis in program evaluation is to seek evaluation methods that are unobtrusive & methods that utilize actual program data rather than creating extra surveys or data collection requirements. The Work-Based Learning Plan is an excellent vehicle for program evaluation, because its primary purpose is to provide feedback from supervisors to students, but it also provides feedback to career specialists and program staff and management.

### **The Massachusetts Work-Based Learning Plan provides feedback to ...**



**Students**

about job expectations, skills needed, skills gained

**Career specialists and teachers**

about job expectations and about each student's individual performance and skill needs

**Program managers and staff**

about the range and quality of job and internship placements and the skills students gain through these placements

**Individuals at the state and local level**

about the impact of work-based learning initiatives

***The Work-Based Learning Plan produces meaningful data about student skill gains.*** While the Work-Based Learning Plan has not been systematically validated the way large standardized tests have been, this study (and the earlier pilot study) suggests that the Work-Based Learning Plan provides meaningful data. The findings from this study make sense intuitively ... which is a basic requirement for any evaluation method. For example, it makes sense that students with thoughtfully-written job descriptions and with explicit written goals will make more skill gain than other students.

***Work-Based Learning Plans, when collected in a database, provide an interesting snapshot of student experiences.*** The second part of this report provides an analysis by industry cluster, including a snapshot of job titles, job descriptions, and competencies used in each industry cluster. These lists are useful for evaluation because they can help to show whether the Connecting Activities / School to Career programs are offering a wide variety of jobs and internships, whether jobs and internships have challenging and interesting job descriptions, and whether students and supervisors are effectively making the connection between job tasks and competencies. These lists are also useful for those who are planning internship programs or developing job placement opportunities because they provide an interesting snapshot of the wide range of student experiences that are possible in work-based learning.

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## **Summary: Strengthening Work-Based Learning**

This study suggests that the quality of student jobs and internships can be strengthened whenever supervisors, students and career specialists focus on developing thoughtful job descriptions, lists of tasks and competencies, and goals for the student. The way the work-based learning plan is developed will vary with the size and type of business. Many students work in formal internship programs where a company or nonprofit agency hosts a large group of students and makes a strong commitment to developing a variety of work assignments that expose students to different aspects of the organization. Other students work in individually-developed placements where they can explore very specific interests in careers such as veterinary care, photography, engineering or technology. Other students work in regular paid jobs in settings where there is less time to focus on developing student skills and career interests. In some of these businesses, the student was encouraged to write their own work-based learning plan, which is an interesting approach to enriching these jobs. Whether students are placed in formal internship programs in large businesses or whether they use the Work-Based Learning Plan to transform an ordinary after-school job into an internship, students are most likely to gain skills if they and their supervisors focus on specific skills, set goals, and seek out opportunities to develop those skills.

***Work-Based Learning Plan Study  
Analysis by Industry Cluster  
With  
Sample Job Descriptions and Competencies***

***Key to Competencies:***

- 01 COMM: Communication and Literacy
- 02 INFO: Organizing and Analyzing Information
- 03 PROB: Problem Solving
- 04 TECH: Using Technology
- 05 COMP: Completing Entire Activities
- 06 PROF: Professionalism
- 07 INT: Interacting with Others
- 08 IND: Understanding All Aspects of an Industry
- 09 CAR: Career and Life Choices

# Arts, Media, Communications and Technology Industry Cluster

**Graphic Arts \* Commercial Art \* Journalism \* Web Design \* Computer Installation and Maintenance \* Computer Networking \* Broadcasting \* Printing \* Music \* Photography**

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	Arts, Media, Communications and Technology	Full Sample
Number of students in sample	84	1,050
Average length of job description	51 words	52 words
Average number of competencies chosen	4.6	4.4.6

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*Comment: Students in this cluster were often in jobs that required fairly advanced writing or technology skills, and often had higher-than-average initial ratings, but less increase in skill between the first and most recent review.*

## Competencies Used

### Most Frequently Chosen Competencies:

Communication and Literacy (71% of WBL Plans)  
Completing Activities (63% of WBL Plans)  
Technology (62% of WBL Plans)

### Competencies that are important in this industry cluster relative to other industry clusters:

Technology (62% of WBL Plans vs. 40% of WBL Plans in full sample)

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## Sample Job Descriptions and Competencies Used

<b>Arts, Media, Communications and Technology</b>	<b>Competencies (See Key)</b>								
	<b>01 COMM</b>	<b>02 INFO</b>	<b>03 PROB</b>	<b>04 TECH</b>	<b>05 COMP</b>	<b>06 PROF</b>	<b>07 INTER</b>	<b>08 IND</b>	<b>09 CAR</b>
<b>Assistant</b> Student works on design projects, delivers blueprints, and talks with vendors about software products.	*	*	*	*	*	*	*		
<b>Intern</b> This summer the interns will be producing two lunchtime concerts for and by teen-age performers entitled "Live Arts Lunchtime." In addition to all aspects of production - marketing, auditioning, setting up, and running performances, the interns will help the staff with clerical needs and facilities maintenance (painting & &cleaning).						*	*		
<b>Intern</b> Student assists in the development of health related websites for the medical center. Her responsibilities include researching and organizing various websites; making phone calls to gather information; entering data onto the website; and updating the database. She is also conducting a survey regarding adolescent Internet use.	*	*		*		*			
<b>Intern</b> To learn the process involved in audio production as it relates to marketing and sales in the media.	*	*	*	*	*	*	*	*	*
<b>Intern</b> Learn how the newspaper functions, develop reporting skills, understand differences between newspaper writing and writing for school; provide stories for daily paper if available and for Teen Pages.	*	*					*		
<b>Intern</b> Student will be given a complete, all-aspects exposure to the music recording and production business. He will learn how to use the equipment and about how to interact with clients and the public.				*	*	*	*	*	
<b>Intern in Human Resources</b> Student will work with the Human Resources Department to update a web site for the company and assist with other on-line site development.	*			*		*			
<b>Intern - Newsroom</b> Newsroom & Art Dept. Write news stories. Compile "calendar section" and interviews. Use Adobe Illustrator, Photoshop, Quark Express and other software in the art department.				*				*	
<b>Intern - Smart Start</b> Updating regular and online database. Developing customer service and interpersonal communication skills. Writing a business proposal. Updating a website and installing DSL line and web camera.	*	*	*	*	*	*	*	*	*

**Arts, Media, Communications and Technology**

**Competencies (See Key)**

	01 COMM	02 INFO	03 PROB	04 TECH	05 COMP	06 PROF	07 INTER	08 IND	09 CAR
<b>Library Aide</b> Putting magazines and newspapers away, alphabetizing books and creating new labels for books.	*					*			*
<b>Music Intern</b> Student will explore music teaching as a profession. She will assist the music director in group lessons, tutoring, and in major productions. Student will also be challenged to deepen her understanding of music theory and will be evaluated on this by her mentor.	*		*	*					
<b>Office Intern</b> Student is an intern at the arts alliance. Her primary responsibility is developing and creating newsletters and fliers for the organization. She also helps out with answering the phones and other general office work.	*			*		*			
<b>On Air Disc Jockey</b> Student employees are responsible for on-air coverage including music selection, news, community information and public service announcements. Students learn all electronics involved in on-air production, as well as troubleshooting.	*				*	*			
<b>Photo Lab Technician</b> Photo Technician	*	*	*	*		*	*		
<b>Photography Assistant and Retail Associate</b> Responsible for the development of customer's photographs using instant development machine. Also responsible for customer service and sales in the retail section of the store.	*			*	*	*	*		
<b>Student Intern</b> The student intern is responsible for typesetting, answering the telephone, going out with reporters, written and photographic assignments, taking photos, gathering quotes for Voices in the Valley, and other duties as needed.	*	*	*	*	*	*	*	*	
<b>Subscriber Relations Intern</b> Student is responsible for the aggregation of subscribers data and order fulfillment for weekly contest winners. Local data base management.	*		*	*	*	*	*	*	*
<b>Technology</b> Working with computers and installing software. Take apart computers and fix problems dealing with computers, printers, scanners, etc. Using Internet and other software.						*	*		

# ***Business, Finance and Marketing Industry Cluster***

***Business \* Office Management \* Retail \* Sales \* Marketing \* Office Support \* Banking \* Finance \* Entrepreneurship***

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	Business, Finance and Marketing	Full Sample
Number of students in sample	363	1,050
Average length of job description	38 words	52 words
Average number of competencies chosen	4.4	4.6

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## **Competencies Used**

### Most Frequently Chosen Competencies:

Communication and Literacy (73% of WBL Plans)

Professionalism (66% of WBL Plans)

Interacting with Others (61% of WBL Plans)

### Competencies that are important in this industry cluster relative to other industry clusters:

Technology (52% of WBL Plans vs. 40% of WBL Plans in full sample)

Information (50% of WBL Plans vs. 43% of WBL Plans in full sample)

## Sample Job Descriptions and Competencies

### *Business, Finance and Marketing*

### Competencies (See Key)

	01 COMM	02 INFO	03 PROB	04 TECH	05 COMP	06 PROF	07 INTER	08 IND	09 CAR
<b>Buying Department</b> Work with organic foods and products. Put together certain items for vendors. Clean and organize the office.	*	*		*	*	*	*		
<b>Job Costing Analyst</b> Retrieve material and labor costs using order paperwork and computer system. Calculate information on a per order basis and enter information into computer system to complete an order.		*		*	*			*	
<b>Assistant</b> Student will be responsible for assisting the Special Education Department by answering the phones, typing and filing and assisting students on the bus.	*			*	*	*	*		
<b>Intern Manager</b> Student is learning and participating, hands on, in as many facets of the business as we can include her in. Her responsibilities and learning so far have been in: food prep. and presentation, cash register and lottery, waiting on and communicating with customers and salesmen, rotating and stocking shelves, pricing, taxes and payroll, bank deposits, and cleaning. She has also delivered food to the elderly and shut ins.	*	*	*		*	*	*	*	
<b>Customer Service</b> Ticket Computer System. Customer Service. Phone Sales. Walk up Sales. Dealing with money.		*		*				*	
<b>Office Assistant</b> As an office assistant, my job is to take care of everyday tasks, while learning how a small company is run. By observing and doing hands-on work, I will better be able to understand the dynamics of a small company.					*			*	*
<b>Sales Assistant</b> Customer Service, register, stocking shelves, cleaning, etc.	*		*	*			*		
<b>Store Clerk</b> A store clerk works at the cash register, stocks shelves, and works the sales. A clerk also organizes the back room, takes out the trash, works in the trailer. At the end of the night, the clerk needs to vacuum, put back merchandise, make sure the merchandise is facing forward. A clerk must work well with the rest of the staff and stay cooperative with all customers.	*						*		
<b>Counter Clerk</b> Front counter, grill, drive thru	*				*				

**Business, Finance and Marketing**

**Competencies (See Key)**

	01 COMM	02 INFO	03 PROB	04 TECH	05 COMP	06 PROF	07 INTER	08 IND	09 CAR
<p><b>Shipping Assistant</b> A shipping assistant counts parts, packages parts, makes boxes, moves boxes between buildings, cleans restrooms, takes out trash.</p>	*					*			
<p><b>Receptionist</b> Answer phones and direct calls to appropriate personnel. Transcribe messages and file paperwork. Greet and direct visitors to the nursing home.</p>	*					*	*		
<p><b>Computer Assistant</b> Answer phones. Writing memos and maintaining client files. Assisting with Depositions.</p>		*	*						
<p><b>Marketing Assistant</b> Student is responsible for assisting the Marketing department. In particular, he has been very involved in supporting events and conferences through management and shipping of collateral, editing and maintaining contact databases, and general administrative support.</p>		*		*		*	*		
<p><b>Email Marketing Coordinator</b> To manage and complete a direct e-mail campaign. Use the internet to find and license a utility to scrub a raw email list; use the internet to find and license an email list management and bulk mail program; learn to use the products; use the products to send a direct bulk email to clean list.</p>		*		*					*
<p><b>Associate</b> Utilize computer-generated database to place follow-up service calls. Coordinate promotions with management, and draft presentation format. Schedule follow-up appointments for past customers.</p>	*			*			*		
<p><b>Cashier</b> Cashier</p>	*	*	*	*		*	*		
<p><b>Stock Person</b> Student will bag customer orders, and ensure no breakage or damage of groceries.</p>						*	*		
<p><b>Work-Study</b> Answering the telephone, scheduling student's appointments, using student database, picking up and delivering mail to staff, running assigned errands, and general clerical work in the office.</p>	*			*	*		*		
<p><b>Beauty Salon Clerk</b> Book appointments in person and on phone. Handles money. Customer Service. Retail: sell lines available.</p>	*	*	*	*	*	*	*	*	*
<p><b>Sales/Delivery Person</b> Student answers the phone, responsible for customer relations, register new customers, delivers and picks up the products.</p>	*				*	*			

**Business, Finance and Marketing**

**Competencies (See Key)**

	01 COMM	02 INFO	03 PROB	04 TECH	05 COMP	06 PROF	07 INTER	08 IND	09 CAR
<b>Office Assistant</b> My job includes filing, answering the phone lines, putting in information on client into database. Helping out with the food pantry.	*	*				*			
<b>Office Assistant</b> Work on projects with internet database, help troubleshoot computer problems in a large computer lab.		*	*	*					
<b>General Office Assistant</b> Projects: (1) ER library - putting files in a database - reorganizing information in files; (2) New employee orientation survey - inputting info into a database.	*	*		*		*			
<b>Office Assistant</b> Assist in Benefits department in general office work	*	*	*	*	*	*	*	*	*
<b>Intern for Academic Advising</b> Greet and assist potential students and guests. Arrange English and Math Assessment Tests. Answer telephones. Filing and general clerical work.			*				*		
<b>Student Center Operations Assistant</b> Student measures areas in student center and sets-up software programs to facilitate reservations for functions held in the center.		*		*			*		
<b>Clerk-Book Store</b> The clerk does some data entry of inventory, organizes books, stocks shelves, general cleaning and operates the sales register.		*		*			*		
<b>Office Support</b> Student is responsible for filing, answering phones and data entry.	*			*	*	*	*		
<b>Storeroom Receiver</b> Orders, receives and stores food and non-food items. Ensures products are received and properly stored in a sanitary manner. Rotates supplies according to standard procedure. Recommends action for backorders, substitutes defective product. Documents appropriate record keeping and reports.	*	*	*	*	*				
<b>Administrative Assistant</b> Perform and coordinate office activities. Act as liaison between career facilitator, students, faculty, parents, and business. Assist students, and staff in disseminating career information and using career software.	*	*	*	*	*	*	*	*	*
<b>Business Management Trainee</b> Assist in general office management duties of a comprehensive photography business.	*			*	*	*	*	*	

# Construction and Design Industry Cluster

**Building Trades \* Woodworking \* Drafting \* Architecture \* Building Maintenance**

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	Construction and Design	Full Sample
Number of students in sample	45	1,050
Average length of job description	45 words	52 words
Average number of competencies chosen	4.9	4.6

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*Comment: Students in this cluster had above-average levels of skill gain.*

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## Competencies Used

### Most Frequently Chosen Competencies:

Professionalism (78% of WBL Plans)  
Interacting with Others (76% of WBL Plans)  
Communication and Literacy (73% of WBL Plans)

### Competencies that are important in this industry cluster relative to other industry clusters:

Information (53% of WBL Plans vs. 43% of WBL Plans in full sample)  
Professionalism (78% of WBL Plans vs. 69% of WBL Plans in full sample)  
Interacting with Others (76% of WBL Plans vs. 70% of WBL Plans in full sample)  
Understanding the Industry (36% of WBL Plans vs. 29% of WBL Plans in full sample)  
Career and Life Choices (33% of WBL Plans vs. 25% of WBL Plans in full sample)

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## Sample Job Descriptions and Competencies Used

<i>Construction and Design</i>	<i>Competencies (See Key)</i>								
	<i>01 COMM</i>	<i>02 INFO</i>	<i>03 PROB</i>	<i>04 TECH</i>	<i>05 COMP</i>	<i>06 PROF</i>	<i>07 INTER</i>	<i>08 IND</i>	<i>09 CAR</i>
<b>Intern</b> Student will become familiar with the training procedures and the administrative work involved in running the department. He will help out with computer work, and he will spend half of his time with the building inspector getting to know more about health and safety issues.				*	*	*			
<b>Intern</b> The intern position is a high school student who is considering a career in architecture or a related field. The position is a flexible one in which the intern is responsible for a wide range of administrative tasks, including filing, printing, copying, running errands, and doing odd jobs around the office. If the student has computer or CAD drafting skills, they may be called upon to do certain drafting or computer related tasks. The purpose of the position is to expose the student to the atmosphere of an architectural office. The hours are flexible to adapt to the student's schedule.		*		*	*	*	*		
<b>Apprentice Plumber</b> Student's job is as an apprentice plumber. He is required to do and/or assist in the installation of rough-in and finish plumbing. He also has been working on both radiant and hydronic heating systems.	*	*	*			*	*	*	
<b>Intern</b> Assist maintenance staff with upkeep of a public school.						*			
<b>Construction Intern</b> Run machinery, site prep. transit work	*	*		*	*	*			
<b>Intern</b> Establish reports on building's floor plan usage and storage space available by using software, telephone calls and other means to determine vacant space. Will be asked to support other projects as well, using Lotus Notes, 1-2-3 and Approach.	*	*	*	*	*	*	*	*	*
<b>Woodworking Assistant</b> To review plans and figure the number of pieces, size, and amount of material needed for various jobs. Other duties include clearing the shop, sorting lumber and returning tools to their proper places. Often student will be given a sketch of a project and be asked to draw and dimension it on the computer with an auto-cad program.	*	*	*	*	*	*	*	*	*

# ***Environmental, Natural Resources, and Agricultural Science Industry Cluster***

***Environmental Sciences \* Conservation \* Wildlife \* Horticulture \* Landscaping \* Farming  
\* Animal Care \* Environmental Education \* Nature Centers, Zoos and Aquariums***

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	Environmental, Natural Resources, and Agricultural Science	Full Sample
Number of students in sample	62	1,050
Average length of job description	68 words	52 words
Average number of competencies chosen	4.4	4.6

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## **Competencies Used**

### Most Frequently Chosen Competencies:

Interacting with Others (90% of WBL Plans)  
Communication and Literacy (84% of WBL Plans)  
Completing Activities (74% of WBL Plans)

### Competencies that are important in this industry cluster relative to other industry clusters:

Interacting with Others (90% of WBL Plans vs. 70% of WBL Plans in full sample)  
Communication and Literacy (84% of WBL Plans vs. 75% of WBL Plans in full sample)  
Completing Activities (74% of WBL Plans vs. 62% of WBL Plans in full sample)

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## Sample Job Descriptions and Competencies Used

<i>Environmental, Natural Resources and Agricultural Sciences</i>	<i>Competencies (See Key)</i>								
	<i>01 COMM</i>	<i>02 INFO</i>	<i>03 PROB</i>	<i>04 TECH</i>	<i>05 COMP</i>	<i>06 PROF</i>	<i>07 INTER</i>	<i>08 IND</i>	<i>09 CAR</i>
<b>Veterinary Assistant</b> First month - Works with Kennel Staff - Feeding, walking, caring for pets. Second month - Works with room advisor - Showing clients to exam rooms, getting supplies needed by doctor. Getting rooms ready for next client. Third month - Works with technicians - In lab and treatment areas. Fourth month - Works with reception staff at front desk.	*			*		*	*	*	
<b>Landscaper</b> Students will receive instruction in activities to prepare them in the use of tools and equipment related to landscaping. Students will be involved in work experiences that provide vocational skills through the completion of tasks and skill development activities in actual landscaping work assignments and real world atmosphere				*	*	*			
<b>Intern</b> Student will be a part of both the horse training team and the breeding team. She will also be exposed to the administrative and management teams to get a fuller understanding of the rigor involved in managing a 100+ horse business.						*	*	*	
<b>Laborer</b> Student develops a working knowledge of the District Office to distribute fish into their stocking sites. Develops a knowledge of Fish and Wildlife laws and through hands-on experience acquires knowledge of the many techniques of Fish & Wildlife Management.	*				*	*	*	*	*
<b>Lab Research Asst</b> To grow medicinal and aromatic plants from seed and cuttings. To maintain plants in greenhouse. Review literature on medicinal and aromatic plants.	*	*	*	*	*	*	*	*	*
<b>Intern--Dept of Vet and Animal Sciences</b> Lab work using sterile techniques, equipment, etc.	*	*	*	*	*				

**Environmental, Natural Resources and  
Agricultural Sciences**

**Competencies (See Key)**

	01 COMM	02 INFO	03 PROB	04 TECH	05 COMP	06 PROF	07 INTER	08 IND	09 CAR
<p><b>Intern</b> Student will assist staff in all aspects of Atlantic Salmon work. She will assist in spawning of adult salmon, rinse eggs, sort fish, disinfect eggs and pack eggs for transfer. She will also feed different year classes a varied diet and conduct water samples for non-lethal detection of certain bacteria strains. She will be doing hands-on management and research work which will expose her to the real work and doings at a Federal salmon hatchery.</p>	*	*	*	*	*	*	*	*	*
<p><b>Lab Assistant</b> Assists Lab Director with retrieving and testing water and soil samples from the Charles River.</p>		*		*					
<p><b>Therapeutic Riding Assistant</b> Assist therapeutic riding staff with handicapped clients, horses and barn activities. Assists in classes as needed by staff.</p>				*	*	*	*	*	*
<p><b>Ecoteen (NOTE: A large group of students worked in this position)</b> The teens work with visitors on hands-on activities. The teens are responsible for educating the visitors about what is involved in the activities. They are also responsible for informing the visitors about different programs going on throughout the day.</p>	*				*		*		
<p><b>Ecoteen (NOTE: A large group of students worked in this position)</b> The job requires helping young children and guests with educational arts and crafts projects and games in the world of science.</p>	*	*				*	*		

# Health, Human Services and Education Industry Cluster

*Health Care \* Human Services \* Childcare \* Teaching \* Public Service*

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	Health, Human Services and Education	Full Sample
Number of students in sample	378	1,050
Average length of job description	68 words	52 words
Average number of competencies chosen	4.4	4.6

*Comment: Students in this cluster had above average levels of skill gain.*

---

## Competencies Used

### Most Frequently Chosen Competencies:

Professionalism (80% of WBL Plans)  
Communication and Literacy (77% of WBL Plans)  
Interacting with Others (77% of WBL Plans)

### Competencies that are important in this industry cluster relative to other industry clusters:

Professionalism (80% of WBL Plans vs. 69% of WBL Plans in full sample)  
Interacting with Others (77% of WBL Plans vs. 70% of WBL Plans in full sample)  
Completing Activities (70% of WBL Plans vs. 62% of WBL Plans in full sample)  
Problem Solving (58% of WBL Plans vs. 50% of WBL Plans in full sample)  
Understanding the Industry (34% of WBL Plans vs. 29% of WBL Plans in full sample)  
Career and Life Choices (29% of WBL Plans vs. 25% of WBL Plans in full sample)

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## Sample Job Descriptions and Competencies Used

Health, Human Services and Education

Competencies (See Key)

	01 COMM	02 INFO	03 PROB	04 TECH	05 COMP	06 PROF	07 INTER	08 IND	09 CAR
<b>Teacher Assistant</b> Making game board for students. Creating a lesson plan revolving around Egyptian numerals. Working with teachers and students in a mature and professional manner.	*	*	*	*	*	*	*		
<b>Teacher Assistant</b> Develop and teach a lesson and help students who need assistance.	*	*	*	*	*	*	*	*	*
<b>Teacher Aide</b> Classroom Aide; Working individually with students, run-offs, design/change bulletin boards, chart making, etc.	*	*	*	*	*	*			
<b>RNA Restorative Nurse Assistant</b> The student will be exposed to, and work with all the therapies (speech, physical, occupational and diversional activities) They will perform specific restorative procedures under the exclusive direction of the therapist.	*				*	*	*		
<b>Junior Counselor</b> Jr. Camp Counselors are responsible for assisting Sr. Counselors in developing activities for, and supervising children who attend the Camp. Duties include: Monitoring attendance, encouraging participation, mediating disputes, preparing and serving breakfast, lunch and snacks, organizing activities, and maintaining general cleanliness of facilities. Jr. Counselors receive training during pre-camp workshops, as well as on-the-job. They are supervised by Senior Counselors.	*		*		*	*	*		
<b>Playgroup Assistant</b> Intern will assist and interact with the clients, act professionally, and respect diversity. Assisting with the playgroup.						*	*		
<b>Dental Office Assistant</b> Receptionist and dental assistant for busy dental practice.	*			*	*		*	*	*
<b>Intern</b> The student will actively participate in the day to day workings in the High School Nursery School. They will also participate in on-site training at a special needs program, a day care center, and at local elementary schools. These sites are used to expose the students to various teaching styles, learning styles and abilities of children and to help them make future career choices.	*		*			*	*	*	*

**Health, Human Services and Education**

**Competencies (See Key)**

	<b>01</b> <i>COMM</i>	<b>02</b> <i>INFO</i>	<b>03</b> <i>PROB</i>	<b>04</b> <i>TECH</i>	<b>05</b> <i>COMP</i>	<b>06</b> <i>PROF</i>	<b>07</b> <i>INTER</i>	<b>08</b> <i>IND</i>	<b>09</b> <i>CAR</i>
<b>Aide</b> Assist in the activity room. Invite residents to activities and assist with their transportation. Visit with residents.	*					*			*
<b>Fire Dept. Intern</b> Participate in emergency and non-emergency calls as appropriate. Participate in propane, smoke detector and fire inspections. Participate in ambulance calls as appropriate. Observe general working of fire department.	*					*	*		
<b>Assistant</b> Assisting the site supervisor in interacting with the younger children in the program. Assisting in the general office work affiliated with related organizations.	*				*	*			
<b>Intern</b> Student is doing her internship at two elementary schools, she is working with early childhood special needs students at both sites. Responsibilities include supervising group activities, assisting the teachers instruction, reading to the students, and assisting the teachers with classroom materials and activities.	*				*	*			
<b>Junior Camp Counselor</b> Summer Camp Counselor: Plan activities for school age children (6-12), interact with teacher (supervisor) and other counselors in maintaining full supervision for camp participants.	*		*		*	*	*		
<b>Teaching Assistant</b> Student is to provide expressive play. She is to work with children in developing short skits and performance pieces.	*				*	*	*		
<b>Camp Counselor</b> Work with kids ranging from 8-12. Organizing activities and schedules. Also am responsible for the well-being of the kids.	*		*		*	*	*		
<b>Diet Technician</b> Picks up daily menu from patients and provides assistance as needed.	*				*	*	*		
<b>Student Aide</b> Interact with the special education children. This requires the student to be attentive to the children's needs at all time. Helping the children to and from the bus. Associate with the children by reading, drawing, playing games and other activities. Assist all teachers and the teacher aide.	*				*		*	*	
<b>Kitchen Aide</b> To assist in food production area. To maintain sanitation of kitchen. To serve meals.	*	*	*		*	*		*	

**Health, Human Services and Education**

**Competencies (See Key)**

	<b>01</b> <i>COMM</i>	<b>02</b> <i>INFO</i>	<b>03</b> <i>PROB</i>	<b>04</b> <i>TECH</i>	<b>05</b> <i>COMP</i>	<b>06</b> <i>PROF</i>	<b>07</b> <i>INTER</i>	<b>08</b> <i>IND</i>	<b>09</b> <i>CAR</i>
<p><b>Emergency Rescue</b> Student will work under supervision of UMass Memorial EMJ Supervisor in processing daily run reports and billing sheet as well as other tasks that may arise throughout the day.</p>	*	*		*					
<p><b>Clerical Aide - Medical Records</b> Students will sort and file patients medical records in physician folder. Students will learn basic terminal digit order. Students will assist in preparation of mailing - addressing and stuffing envelopes. Students will prepare reports for mailing.</p>	*	*			*	*	*		
<p><b>Dispatch</b> Taking patients to and from destinations like X-ray, heart station, CVS. Bring spec. to the labs.</p>	*					*	*		
<p><b>Teaching Assistant</b> Completes duties and interactions with students such as would be performed by the teaching assistants within the pre-school setting. Stimulates oral communication with students and social interactions between peers.</p>	*	*	*		*	*	*	*	

# Hospitality, Tourism and Recreation

*Hospitality \* Restaurant \* Hotel and Lodging \* Tourism \* Recreation*

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	Hospitality, Tourism and Recreation	Full Sample
Number of students in sample	74	1,050
Average length of job description	35 words (excluding fast food placements: 54 words)	52 words
Average number of competencies chosen	4.2 (excluding fast food placements: 3.7)	4.6

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*Comment: Because there was a noticeable difference between the Work-Based Learning Plan content and skill gain in the fast food industry and other parts of this industry cluster, skill gain was analyzed separately for these two types of placements. Students in non-fast-food settings in this industry cluster had above-average levels of skill gain.*

## Competencies Used

### Most Frequently Chosen Competencies:

Communication and Literacy (77% of WBL Plans)  
Interacting with Others (77% of WBL Plans)

### Competencies that are important in this industry cluster relative to other industry clusters:

Interacting with Others (77% of WBL Plans vs. 70% of WBL Plans in full sample)

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## Sample Job Descriptions and Competencies Used

### Hospitality, Tourism and Recreation

### Competencies (See Key)

	01 COMM	02 INFO	03 PROB	04 TECH	05 COMP	06 PROF	07 INTER	08 IND	09 CAR
<b>Special Events Coordinator</b> To assist with organization and planning of all aspects of the 4th of July fireworks celebration. Various tasks/duties to make vendor contact, sponsor contact, program planning, volunteer recruitment etc..etc...	*	*	*	*			*		
<b>Snowboard Instructor</b> Student will instruct people in snowboarding.	*					*	*	*	*
<b>Serving Food</b> Serving Food	*	*	*			*	*	*	
<b>Student Dancer</b> Responsible for helping out younger and more inexperienced dancers in various classes.	*				*	*			
<b>Outside Staff</b> Student parks golf carts and cleans the club house. Also directs and helps customers and takes part in tournament operation.	*				*	*			
<b>Intern Student Activities</b> Greeting Visitors Selling tickets to group events Help organize activities on campus						*	*		
<b>Food Nutrition</b> In the course of a day, I slice tomatoes and wrap them. I also do something called garnishes and wrap and date them.					*				
<b>Fitness Consultant Assistant</b> Shadow and assist Fitness Consultants in providing personalized attention, fitness instruction, and specialty programing that contributes to each member's health and fitness goals. Includes floor time supervision, promoting fitness program and customer service.	*	*	*		*	*	*	*	

# Technical and Engineering Industry Cluster

**Engineering \* Manufacturing Technology \* Industrial \* Automotive Technology**

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	Technical and Engineering	Full Sample
Number of students in sample	23	1,050
Average length of job description	52 words	52 words
Average number of competencies chosen	3.8	4.6

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## Competencies Used

### Most frequently chosen competencies:

Problem Solving (52% of WBL Plans)  
Technology (52% of WBL Plans)  
Communication and Literacy (48% of WBL Plans)

### Competencies that are important in this industry cluster relative to other industry clusters:

Problem Solving (52% of WBL Plans in this cluster vs. 50% of full sample)  
Technology (52% of WBL Plans in this cluster vs. 40% of full sample)  
Understanding the Industry (39% of WBL Plans in this cluster vs. 29% of full sample)  
Career and Life Choices (30% of WBL Plans in this cluster vs. 25% of full sample)

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## Sample Job Descriptions and Competencies Used

Technical and Engineering	Competencies (See Key)								
	01 COMM	02 INFO	03 PROB	04 TECH	05 COMP	06 PROF	07 INTER	08 IND	09 CAR
<b>Application Engineer</b> Perform computer generated lighting calculations, photometric tests, create engineering documentation including but not limited to: layouts, submittals, fabrication drawings, bill of materials and installation instructions.	*	*	*	*	*	*	*		
<b>Computer Assistant</b> The student works with a number of salespeople who make calls to determine customer needs and specifications on projects involving duct system design. Using a variety of math software determines load calculations. Algebra, geometry, trigonometry, and physics are all utilized by the student. In addition, the student must research and learn building code as it applies to the drawings on the project. Auto Cad-14 is the software employed in the project drawings.		*	*	*	*	*	*	*	*
<b>Intern</b> Student will learn the art and business of metal working for decorative purposes.		*		*	*				
<b>Lab Assistant</b> The student is a lab assistant in a testing lab that does tests and consulting on lightning protection for aircraft and communications equipment. He will be involved with the set up of various tests, responsible for maintaining and calibrating equipment and completing the required paperwork which is sent to calibration labs. Winding resistors and soldering are also performed. Safety is constantly stressed.	*	*	*	*	*	*	*	*	
<b>Assembler</b> In the light assembly packing job I expect to learn basic work skills in managing my time between work, school, and partying. I expect to earn very needed income to support my family. I expect to gain an outstanding evaluation to help with my future.	*		*	*			*		
<b>Student Machinist</b> Learn to follow instructions, work with others and learn from them, complete work accurately and in good time, adhere to all safety rules, gain confidence in abilities.									
<b>Intern</b> Student will work on a project to fabricate nano scale AL03 array templates using a computer controlled anodization system.	*	*	*	*	*	*	*	*	*

**Technical and Engineering**

**Competencies (See Key)**

	01 COMM	02 INFO	03 PROB	04 TECH	05 COMP	06 PROF	07 INTER	08 IND	09 CAR
<p><b>Mechanical Engineering Apprentice</b> Input drawings of valve cylinder utilizing CAD/CAM system. Construct drawings and NC code in the development of a valve cylinder to be manufactured.</p>			*	*					
<p><b>Intern</b> Observe various areas of service (including suppression division, signal room, fire prevention) within a fire department that services a small city.</p>	*	*						*	
<p><b>Mechanic Intern</b> General shop upkeep. Maintaining repair shop in an acceptable condition. Will be exposed to the process of service as it relates to other departments. Will be involved in new vehicle assembly. Will observe general repairs in the service center.</p>				*		*		*	
<p><b>Engineering Intern</b> Worked with engineers - do on-line tutorial Work on "Twisted Pair " electronics program Input data and manipulate it.</p>	*	*	*	*	*	*	*	*	*

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## Technical Notes

The analysis for this report was done using a file called SkillGainReports.skl which is part of the Massachusetts School to Career Database. To do this report, the work-based learning plans that were contributed by each region were imported into this file to create a statewide sample. The plans were coded by industry cluster and by various categories, including number of competencies used, small business, length of job description, etc. The data was reviewed to make sure all records had Student ID numbers and that these IDs were consistent and that there were no duplicates. Records were also edited to remove student and company names from the job descriptions.

Next, a screen was created in the Skill Gain Reports file which calculates the average rating at first review and most recent review for each of the nine competencies (if applicable), the average change for each competency, and an overall average. This report can be produced for the sample overall and for subsamples.

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	(A) Average at First Review	(B) Average at Most Recent Review	(C) Average Change	(D) Number of Students
Communication and Literacy	2.41	2.80	.39	783
Information	2.33	2.74	.41	440
Problem Solving	2.37	2.79	.42	530
Technology	2.54	2.91	.37	418
Completing Activities	2.42	2.88	.46	654
Professionalism	2.45	2.84	.39	729
Interacting with Others	2.50	2.92	.42	734
Understanding the Industry	2.24	2.68	.45	301
Career and Life Choices	2.45	2.84	.39	263
Overall Average	2.42	2.83	.41	1,050

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Since different students are evaluated on a different set of competencies, the OVERALL AVERAGE figures use a weighted average, based on Column D (number of students evaluated for each competency). The "Overall Average Change" figures makes it easy to compare skill gain among the various sub-groups in the sample.

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If you are interested in producing the same report for your school, partnership or region, you can use the Skill Gain Report file that came with the Massachusetts School to Career Database 2002 or you can download the latest version of the file from <http://www.skillslibrary.com>. The file contains on-screen instructions that tell you how to import your work-based learning plans and how to generate the reports.

Regions are invited to share information about how they have used Work-Based Learning Plan data for planning, evaluating, and strengthening work-based learning experiences. For information about the files and/or data analysis methods, contact Jennifer Leonard, The Skills Library, 781-321-7894. Email: SkillsLibr@aol.com. Web: <http://www.skillslibrary.com>.