



# Connecting Higher Education and the Region's Growing Industries

An Assessment  
and Next Step  
Recommendations

July 2011

A Report Prepared for the  
Western New York  
College Connection



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## **Connecting Higher Education and the Region's Growing Industries:**

### **An Assessment and Recommendations**

#### **Executive Summary**

In partnership with the Western New York Consortium of Higher Education and with support from the John R. Oishei Foundation, in 2008 the University at Buffalo Regional Institute (institute) examined the scope, product and impact of the Western New York higher education industry. This initiative, *Better by Degrees: Securing a Higher Role for Higher Education in Western New York*, revealed that collectively the region's 22 colleges and universities represent a significant force in creating jobs in the regional economy. Moving forward under the brand *WNY College Connection*, the Consortium has committed to finding ways to better connect higher education and industry by attracting, engaging and retaining students.

Notwithstanding these findings and efforts, there remain weak links between the supply of and demand for newly- minted graduates with the requisite skill set for emerging regional economic sectors. Conventional wisdom suggests that jobs are not plentiful in the region, yet business executives lament the fact that current entry-level openings remain unfilled. Local higher education leaders, too, discuss what they can do to spur economic vitality, putting a point on the need for better understanding the linkages between higher education and the business community. Obtaining this understanding requires actionable information and analysis, as well as engagement of industry heads, government officials, university presidents and other leaders in conversation about how to best prepare the region for future workforce trends. Nothing less than the vitality of higher education and the regional economy is at stake.

The following report by the institute, prepared for WNY College Connection leadership, informs this process by identifying key skills required of newly-minted graduates. Focusing on seven industries in the region – health care, education, professional and business services, life sciences, finance, leisure and hospitality and public safety – and using both quantitative and qualitative methods, this report provides insight into the skills that are most in demand from an employer's perspective, as well as what skill sets are missing from recent college graduates. This report also offers recommendations to the WNY College Connection on ways to move forward in strengthening the education pipeline, enhancing linkages between higher education and regional businesses and preparing students for the 21<sup>st</sup> century workforce.

## Research Findings

### *Specific Industries*

- **Health Care:** Employment in the health care industry requires seven skills performed at a mid- to high level: active learning, reading comprehension, critical thinking, monitoring, speaking, social perceptiveness and service orientation.
- **Education:** Employment in the field of education requires skills performed at a mid- to high level, such as learning strategies, reading comprehension and active listening. Additionally, monitoring, speaking, writing, instructing, critical thinking, active learning and judgment and decision making are considered critical skills.
- **Professional and Business Services:** Jobs in these broad fields require reading comprehension, critical thinking, active listening, speaking and writing at a mid- to high level.
- **Life Sciences:** The majority of life sciences jobs require reading comprehension, critical thinking, active listening, writing and monitoring at a mid-to high level.
- **Finance:** Finance-related jobs require the following skills performed at mid- to high level: reading comprehension, critical thinking, active listening, writing, speaking and judgment and decision making.
- **Leisure and Hospitality:** Jobs in this industry require reading comprehension and critical thinking skills at a mid- to higher level of performance.
- **Public Safety:** Employment in this field requires reading comprehension, critical thinking, active listening and speaking at a mid- to high level.

### *Across Industries*

- The majority of entry-level jobs in the region's growing industries require mid- to advanced levels of basic skills – reading comprehension, active listening, critical thinking and speaking. In industries ranging from health care to education to business and professional services, employers generally look to fill degree-requiring jobs with candidates that have, at the very least, the capacity to perform tasks like read and react to memos, answer telephone inquiries, evaluate and appropriately respond to customer complaints, and seek out appropriate information when talking with someone.

- Additional skills that many employers look for at mid- to advanced levels are writing, monitoring, judgment and decision making. These applied skills are particularly important to jobs in education and financial activities. These employers seek candidates that can communicate well with others in writing, who can monitor the progress of meetings and projects to keep them on track and who can strategize, evaluating the benefits against the costs and other tradeoffs in making decisions.
- Many degree-requiring jobs health and education, two of the region's largest industries, require a broader set of skills that go beyond the basics to include social and systems skills that are critical to working with others and/or within system constraints to achieve goals.

### ***Insights from the Field***

The Regional Institute asked a set of questions to gain insights into congruity and disconnects between regional employer perspectives and national data. Hearing directly from human resource executives in the trenches provides unique, informed and insightful perspectives on regional employment skill needs and gaps in Western New York's growing industries. The findings offer a snapshot of regional employer attitudes regarding newly-minted college graduate skills and thoughts on what works, what doesn't and what to do about it.

- Regional experience mirrors national experience when it comes to skills of newly-minted college graduates. All interviewees noted that research findings using national data are similar to regional experience. Interviewees used expressions such as "spot on" and "directly correlate" in discussing their reaction to the national data findings. That is, regional experience reinforces national findings with regard to skills required.
- Generally speaking, college graduates possess substantive skills necessary to get their foot in the door. All interviewees noted that college graduates have the "basic substantive" skills necessary for employment, whether they are analytic skills in the finance industry, legal skills in law, communication skills in education or food service in the hospitality industry. Interviewees noted, though, that specific "life" skills are missing from newly-minted graduates. Time management, follow-up, leadership skills, prior work experience, ability to write and social perceptiveness were cited as life skills that new graduates lack.

- According to interviewees, college and universities are not solely responsible for the skills gap. These skills are not being developed for a number of reasons. Lack of exposure to “real world” problems was cited, as was the role of technology as a contributing factor to skill development.
- Several suggestions were offered in the interviews. First, across the board, interviewees suggested internships, externships and a better network between higher education and industry as a way to address the skills gap. Second, instructors should maintain a current understanding of what is going on in the field. According to one interviewee, “the best students we get seem to come from schools whose professors are still actively involved in the field.” Third, bringing human resources representatives to campus more frequently to talk to students about what is required in the professional workplace and offer suggestions as to how to get a foot in door would help. In sum, good relationships and open communication between higher education and industry could help alleviate the skills gap.

### **Insights and Recommendations**

This report suggests that regional conversations regarding the skills of newly-minted graduates mirror national debate. However, it also suggests that the conversation is nuanced. Generally graduates possess substantive skills to break into the marketplace, suggesting that higher education is doing its job in educating students in the particulars of their disciplines and/or fields. Blame or fault for skills cited as lacking – time management, leadership, communication (especially written) and social contextualization – does not solely fall at the feet of higher education institutions. Nonetheless, the WNY College Connection can proactively engage stakeholders and garner additional resources to address skills needs in a way that benefits students and regional employers. Connection leadership can take a series of steps to strengthen relations between higher education and industry in the Western New York region:

1. **Promote and strengthen interaction among higher education career services offices, local employers, students and faculty.** The WNY College Connection already has taken steps to create a centralized, regional internship pipeline to feed local industries through its work with the Western New York Association of College Career Centers (WNYACCC). The Connection can enhance relationships among key stakeholders by aggressively marketing the WNYACCC pipeline and generate interest on the part of regional higher education institutions and the

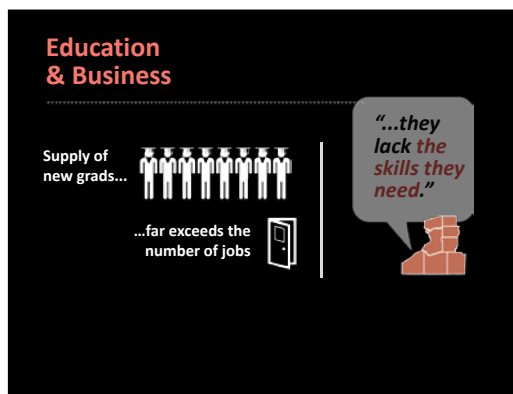
business community.

2. **Establish education initiatives that facilitate the creation of internship programs across the region.** Whether holding a series of seminars that involve higher education career service directors and industry representatives on the nuts and bolts of creating internship programs or hosting networking events, the WNY College Connection can take a leadership role in fostering the creation of more region-wide internship programs.
3. **Provide opportunities for professors, researchers and scholars to become or remain actively involved in their respective fields.** Engaged scholars can serve as important links in student networks, facilitating information from and access to industry partners.
4. **Host a Connection-sponsored career fair or “HR Speakers Series” and invite industry human resource representatives to campuses on a consistent, regular basis to provide exposure and opportunities for students.** This event can be marketed internally at university and college campuses across the region. The Connection, too, can assist disciplines, like the humanities, that are currently under fire for allegedly not better preparing graduates for the workplace.
5. **Establish relationships and work with region-wide stakeholders to strengthen the P-16 education pipeline.** As noted in this report, higher education institutes are not solely responsible for creating an educated workforce for the 21<sup>st</sup> century. Working with education stakeholders across the pipeline, the WNY College Connection can take the lead in examining the regional P-16 education pipeline, assessing gaps and developing system-wide policies and programs to ensure that college graduates are ready for the challenges of the 21<sup>st</sup> century workforce.

## Introduction

With the signing of the American Competitiveness in the Twenty-First Century Act into law in 2000, President William J. Clinton noted that “many companies are reporting that their number one constraint is the inability to hire workers with the necessary skills.” A little more than a decade later, this perspective continues to ring true. Shared by employers both nationally and regionally, new graduates do not seem to be equipped with the requisite skills to fill entry-level jobs and ultimately succeed in the workplace.

Regionally, this sentiment might not be so shocking in demand-laden fields like computer science and mathematics, which have identified graduate shortages for projected job openings. However, it is quite surprising to hear employers talk about skill shortages in fields such as education and business, where data illustrate the supply of new graduates

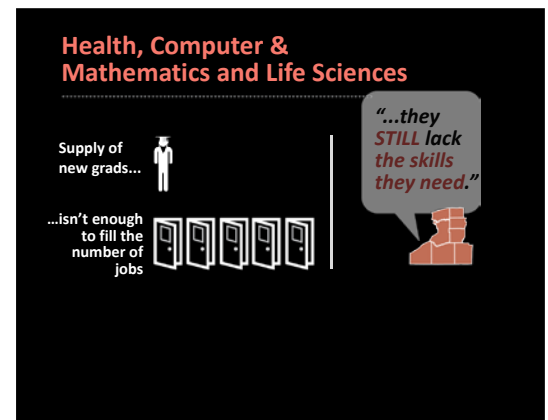


far exceeding the number of job openings in Western

New York. As a result of these weak linkages, new graduates leave the region in search of jobs they can't find or attain here in Western New York, while regional job openings go unfilled, with employers saying that they cannot find qualified candidates. This is a

significant cost to regional employers – one that they rather would avoid with successful regional recruitment.

In an effort to be responsive to local employers' needs and play a stronger role in the economic vitality of the region, the WNY College Connection commissioned the Regional Institute to conduct a study of skills lacking in the roughly 26,000 annual graduates in the region, 16,000 of who directly enter the workforce upon graduation. What are the skills most in demand? Are these graduates able to read and write at an appropriate level? Do they have adequate problem-solving skills? Have interpersonal skills diminished as face-to-face interaction in classrooms is slowly being replaced by online classes and other forms of remote learning? Does the skills gap cut across all industries or is it particular to one or two? Do graduates who held internships or

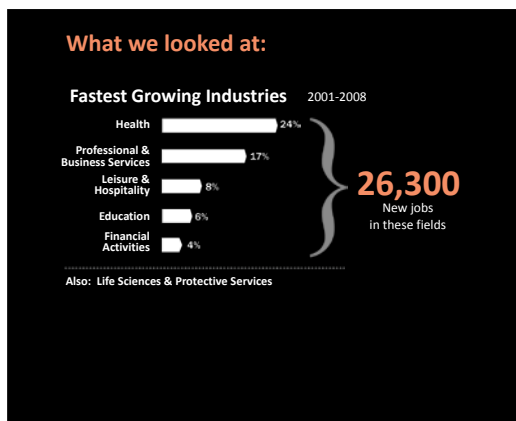




other work experiences have the qualifications and skills required by employers? In addition to identifying skills in demand and shortages, the institute assessed what levels of these skills employers need and the particular fields these skill shortages are affecting the most.

## Research Methodology

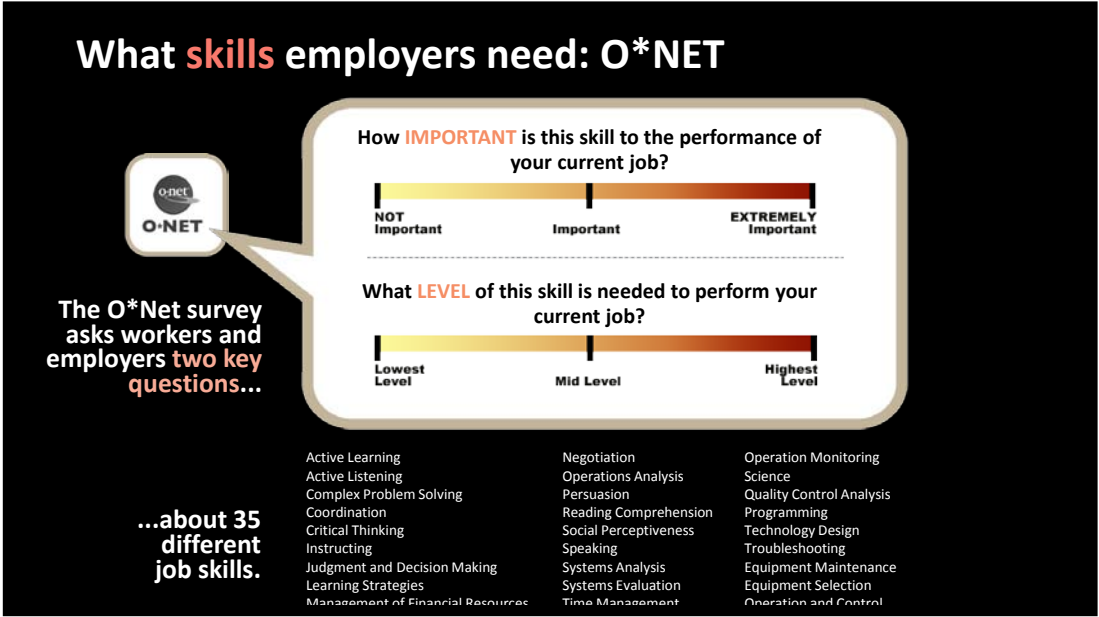
In tackling these questions, the institute engaged in a two-phase approach. The first phase examined the skills most employers look for in filling entry-level, degree-requiring positions in fields that have been identified as growing in Western New York. The second phase assessed what skills employers perceive local college graduates as lacking in hiring for degree-requiring, entry-level jobs.



More specifically, the scope of this study was limited to jobs in the region's fastest growing industries: health; professional & business services; leisure & hospitality; education; and financial activities. Together, over 26,000 new jobs were created in these primarily knowledge-based industries in Western New York between 2001 and 2008, offsetting a loss of over 32,000 jobs in manufacturing, trade, transportation & utilities and communication. Life sciences also was

examined as a growing niche area of the region where a talented and capable labor pool will serve as a foundation for additional growth and advances for the critical mass already developed. Protective services was added because it is a field that requires a rather constant supply of qualified graduates and because candidate shortages have been noted regionally.

For each of these seven industries, data on related jobs, employment, annual openings and educational and experience requirements were gathered from the New York State Department of Labor. Job skills were assessed using data from the national O\*NET survey, which compiles a wealth of information and data from a survey of employers and workers for roughly 1,000 occupations existing in the nation's economy. O\*NET skills data were matched to occupational data from the New York State Department of Labor by standard occupational codes. This survey assesses 35 different skills by asking respondents two key questions: (i) How important is this skill to the performance of your current job? (ii) What level of this skill is needed to perform your current job?



In compiling and analyzing these skills data, analysis was limited to jobs that require a college degree or some postsecondary education and do not require on-the-job experience. In other words, research focused on entry-level jobs appropriate for new college graduates. Also examined were job skills that were reported to be at least somewhat important to the performance of the job (with a rating of more than 2.5 on a scale of 1 to 5) and where the level of the skill needed for the job was mid-level or higher (with a rating of more than 3.5 on scale of 1 to 7). This approach to the research assumes that relatively higher levels of skills are important to a job that employers struggle to find in college graduates and that the outcry about the skills shortage is not about skills that are secondary to a job and/or skills needed at the lowest functional levels. The job skills analyzed are found in the chart on the following page.

## Skill-Level Anchors for Skills Important to Entry-Level, Degree-Requiring Positions in Western New York

	Skill	Skill Level	Description of Skill Level
<i>Basic skills required by almost all entry-level degree-requiring jobs</i>	Reading Comprehension	2	Read step-by-step instructions for completing a form
	Reading Comprehension	4	Read a memo from management describing new personnel policies
	Reading Comprehension	6	Read a scientific journal article describing surgical procedures
	Active Listening	2	Take a customer's order
	Active Listening	4	Answer inquiries regarding credit references
	Active Listening	6	Preside as judge in a complex legal disagreement
	Critical Thinking	2	Determine whether a subordinate has a good excuse for being late
	Critical Thinking	4	Evaluate customer complaints and determine appropriate responses
	Critical Thinking	6	Write legal brief challenging a federal law
<i>Additional Skills many employers look for</i>	Speaking	2	Greet tourists and explain tourist attractions
	Speaking	4	Interview applicants to obtain personal and work history
	Speaking	6	Argue a legal case before the Supreme Court
<i>Advanced skills that tend to be required by employers especially in the Education and Health fields</i>	Writing	2	Take a telephone message
	Writing	4	Write a memo to staff outlining new directives
	Writing	6	Write a novel for publication
	Monitoring	2	Proofread and correct a letter
	Monitoring	4	Monitor a meeting's progress and revise the agenda to ensure that important topics are discussed
	Monitoring	6	Review corporate productivity and develop a plan to increase productivity
	Judgment and Decision Making	2	Decide how scheduling a break will affect work flow
	Judgment and Decision Making	4	Evaluate a loan application for degree of risk
	Judgment and Decision Making	6	Decide whether a manufacturing company should invest in new robotics technology
<i>Advanced skills that tend to be required by employers especially in the Education and Health fields</i>	Active Learning	2	Think about the implications of a newspaper article for job opportunities
	Active Learning	4	Determine the impact of new menu changes on a restaurant's purchasing requirements
	Active Learning	6	Identify the implications of a new scientific theory for product design
	Instructing	2	Instruct a new employee in the use of a time clock
	Instructing	4	Instruct a coworker in how to operate a software program
	Instructing	6	Demonstrate surgical procedure to interns in a teaching hospital
	Learning Strategies	2	Learn a different method of completing a task from a coworker
	Learning Strategies	4	Identify an alternative approach that might help trainees who are having difficulties
	Learning Strategies	6	Apply principles of educational psychology to develop new teaching methods
	Service Orientation	2	Ask customers if they would like cups of coffee
	Service Orientation	4	Make flight reservations for customers, using airline reservation system
	Service Orientation	6	Direct relief agency operations in a disaster area
	Social Perceptiveness	2	Notice that customers are angry because they have been waiting too long
	Social Perceptiveness	4	Be aware of how a coworker's promotion will affect a work group
	Social Perceptiveness	6	Counsel depressive patients during a crisis period

Source: Skill level anchors are from O\*NET.

Note: Skills are ranked according to a scale of 1-7, with 1 representing the lowest skill level and 7 representing the highest skill levels. Anchors representing skill levels 2, 4 and 6 are described on this chart.

This analysis suggests that for every degree-requiring, entry-level job, a set of mid- to advanced-level skills is necessary that the average employer across the nation looks for in a candidate filling that job. Sorting out these jobs and their required skills by industry, the institute then analyzed the mid- to advanced level skills that were important to the large majority (two-thirds or more) of the entry-level, degree-requiring jobs for the seven selected industries. Although based on a national data, the findings shed light on the skills regional employers seek, as well as those college graduates might be lacking.

This first phase of the analysis did not reveal what skills are required regionally and where weak linkages exist between the skills employers want and what new graduates have to offer. To fill in this regional piece of this puzzle and determine where the skills gaps and shortages are regionally, a confidential survey of local human resource professionals, representing six of the seven selected industries, was conducted (See Appendix A). We asked whether the national findings reflect regional reality, as well as what skills, of the 35 reported by O\*NET, are missing in new college graduates. Each of the interviewees was provided background information on this project as well as the findings from the results of the skills analysis prior to administering the survey. The survey was distributed via email, with responses collected either via email and/or telephone conversations.

## Research Findings: Specific Industries

The following chart summarizes research findings as related to the seven specific industries analyzed for the WNY College Connection.

	Education	Financial Activities	Health	Leisure & Hospitality	Life Sciences	Professional & Business Services	Public Safety/Protective Services
Common job titles in this industry	Preschool Teachers, Kindergarten Teachers, Middle School Teachers, High School Teachers, College Professors, Adult Literacy Instructors, Instructional Coordinators	Accountants, Financial Analysts, Loan Officers, Tax Examiners, Credit Analysts, Personal Financial Advisors	Doctors, Nurses, Pharmacists, Physical Therapists, Speech Pathologists	Set & Exhibit Designers, Travel Agents, Fitness Trainers, Multi Media Artists	Biochemists, Biophysicists, Chemical Technicians, Medical Scientists, Medical Appliance Technicians, Agricultural & Food Technicians	Engineers, Lawyers, Paralegals, Computer Programmers, Computer Support Specialists, Database Administrators, Business Operation Specialists	Police, Detectives, Correctional Officers, Detectives, Fire Inspectors
Jobs in WNY, 2009 (entry level, degree-requiring)*	29,330	11,480	33,584	3,970	2,800	32,750	8,150
Annual job openings through 2016	825	260	997	140	50	931	212
Reading Comprehension	X	X	X	X	X	X	X
Active Listening	X	X	X		X	X	X
Critical Thinking	X	X	X	X	X	X	X
Speaking	X	X	X			X	X
Writing	X	X			X	X	
Monitoring	X		X		X		
Judgment & Decision Making	X	X					
Social Perceptiveness			X				
Service Orientation			X				
Learning Strategies	X						
Instructing	X						
Active Learning	X						

\* Degree-requiring jobs include those requiring a post-secondary vocational award as well as a college degree. Public safety/protective service jobs are an exception where we included jobs that haven't typically required a college degree or other formal training but where such training is increasingly being required of new hires to secure employment in the profession.

**Health Care:** Employment in the health care industry, including jobs such as doctors, nurses, pharmacists, physical therapists, speech pathologies, EMTs, veterinarians and doctors, requires seven skills performed at a mid- to high level: active learning, reading comprehension, critical thinking, monitoring, speaking, social perceptiveness and service orientation.





**Education:** Employment in the field of education – whether as a teacher at the preschool, elementary, middle- school or high school level, college professor, adult education or as an instructional coordinator – requires skills performed at a mid- to high level, such as learning strategies, reading comprehension and active listening. Additionally, monitoring, speaking, writing, instructing, critical thinking, active learning and judgment

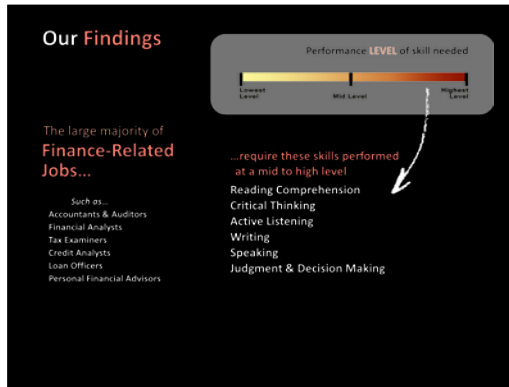
and decision making are considered critical skills.

**Professional and Business Services:** Broad in scope in terms of possible jobs in these fields, professional and business services encompass everything from engineers, computer support specialists and scientists to lawyers, planners, database administrators and business operation specialists. These kinds of jobs require reading comprehension, critical thinking, active listening, speaking and writing at a mid- to high level.



**Life Sciences:** The majority of life sciences jobs, such as biochemists, biophysicists, chemical technicians, medical scientists, medical appliance technicians and agriculture and food technicians, require reading comprehension, critical thinking, active listening, writing and monitoring at a mid-to high level.





**Finance:** Finance-related jobs, including accountants, financial analysts, tax examiners, credit analysts, loan officers and personal financial advisors, require the following skills performed at mid- to high level: reading comprehension, critical thinking, active listening, writing, speaking and judgment and decision making.

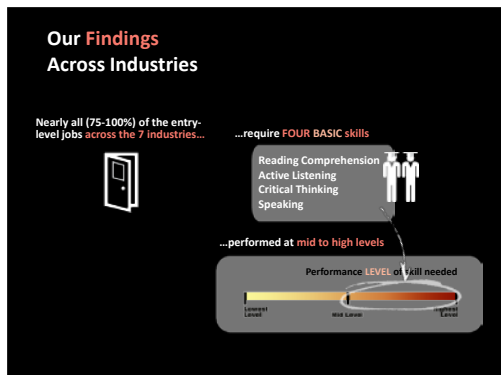
**Leisure and Hospitality:** Jobs in this industry, such as set and exhibit designers, travel agents, fitness trainers, and multi-media artists require reading comprehension and critical thinking skills at a mid- to higher level of performance.



**Public Safety:** Employment in this field, including as a surveillance officer, fire inspector, correctional officer or detective, requires reading comprehension, critical thinking, active listening and speaking at a mid- to high level.

## Research Findings: Across Industries

***In filling entry-level, degree-requiring positions, most employers look for, at a minimum, mid- to advanced levels of basic skills.***







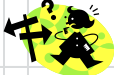


The majority of entry-level jobs in the region's growing industries require mid- to advanced levels of basic skills – **reading comprehension, active listening, critical thinking and speaking**. Industries ranging from health care to education to business and professional services, employers generally look to fill degree-requiring jobs with candidates that have, at the very least, the capacity to do such things like read and react to memos, answer

telephone inquiries, evaluate and appropriately respond to customer complaints, and seek out appropriate information when talking with someone. These skills are foundational in that they allow workers to acquire knowledge, convey information and develop new skills across a variety of domains. These skills allow college graduates to be adaptable and work in and/or across almost any industry. Moreover, most of these skills are so foundational that they can be readily evaluated by employers during the job application process by how well an applicant's resume and cover letter respond to and are tailored to what employers say they are looking for; how a candidate answers questions during the interview; the questions they ask about the job and work environment; and how well present themselves during the interview.

Additional skills that many employers look for at mid- to advanced levels are **writing, monitoring and judgment and decision making**. These applied skills are particularly important to jobs in education and financial activities. These employers seek candidates that can communicate well with others in writing, who can monitor the progress of meetings and projects to keep them on track and who can strategize, evaluating the benefits against the costs and other tradeoffs in making decisions. The level of proficiency employers are looking when it comes to these skills can be described as mid to high, with a rating of 3.5 or higher on a scale of 1 to 7, as shown in the table below.



Advanced Skills Commonly Required by Jobs Across <b>Almost All</b> Growing Industries		
Skill	This skills involves....	Example of Skill Level the Average Entry-Level, Degree-Requiring Job Requires
<b>Reading Comprehension</b>	Understanding written sentences and paragraphs in work related documents.	 Read a memo from management describing new personnel policies
<b>Active Listening</b>	Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.	 Answer inquiries regarding credit references
<b>Critical Thinking</b>	Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.	 Evaluate customer complaints and determine appropriate responses
<b>Speaking</b>	Talking to others to convey information effectively.	 Interview applicants to obtain personal and work history
Advanced Skills Commonly Required by Jobs Across <b>Some</b> Growing Industry		
Skill	This skills involves....	Example of Skill Level the Average Entry-Level, Degree-Requiring Job Requires
<b>Writing</b>	Communicating effectively in writing as appropriate for the needs of the audience.	 Write a memo to staff outlining new directives
<b>Monitoring</b>	Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.	 Monitor a meeting's progress and revise the agenda to ensure that important topics are discussed
<b>Judgment and Decision Making</b>	Considering the relative costs and benefits of potential actions to choose the most appropriate one.	 Evaluate a loan application for degree of risk

**Many degree-requiring jobs health and education, two of the region’s largest industries, require a broader set of skills that go beyond the basics to include social and systems skills that are critical to working with others and/or within system constraints to achieve goals.** The broad responsibilities of jobs in the health and education industries may perhaps explain why employers are struggling to find qualified graduated to fill jobs. For instance, in the education industry, there are 10 difference skills that the majority of jobs require at mid- to advanced levels, compared to less than five different skills that are similarly required in industries such as protective services and leisure and hospitality. Skills for these many of these positions that go beyond the basics already presented include **active learning, instructing, learning strategies, service orientation and social perceptiveness.**

### ***Research Findings: Insights from the Field***

In consultation with the WNY College Connection and career services directors at the University at Buffalo, Canisius College, Daemen College, Buffalo State College, Niagara University and SUC Fredonia, the Regional Institute conducted a confidential survey and follow-up interviews with human resources professionals in the industries under analysis.

The Regional Institute asked a set of questions to gain insights into congruity and disconnects between regional employer perspectives and national data, as reported by O\*NET. Interviewees provided basic information on the company and industry, as well as their role in the hiring process. Specific questions included the following:

- What are your reactions to the findings presented?
- What specific skills are missing?
- Why are necessary skills not being developed?
- What can higher education do to help college students?

Hearing directly from human resource executives in the trenches provides unique, informed and insightful perspectives on regional employment skill needs and gaps in Western New York's growing industries. The findings that follow offer a snapshot of regional employer attitudes regarding newly-minted college graduate skills and thoughts on what works, what doesn't and what to do about it.

***Regional experience mirrors national experience when it comes to skills of newly-minted college graduates.*** All interviewees noted that research findings using national data are similar to regional experience. Interviewees used expressions such as "spot on" and "directly correlate" in discussing their reaction to the national data findings. That is, regional experience reinforces national findings. All interviewees agreed with the national research findings specific to their industry with regard to the four basic skills (reading comprehension, active listening, critical thinking and speaking), four additional skills (writing, monitoring, active learning and judgment & decision-making) and four advanced skills (social perceptiveness, service orientation, learning strategies and instructing).

***Generally speaking, college graduates possess substantive skills necessary to get their foot in the door. However, life skills, such as time management, remain lacking.*** All interviewees noted that college

graduates have the “basic substantive” skills necessary for employment, whether they are analytic skills in the finance industry, legal skills in law, communication skills in education or food service in the hospitality industry. Interviewees noted, though, that specific skills are missing from newly-minted graduates. Time management was a skill missing across industries. For example, in the health care industry, due to the complexity of Medicare and Medicaid laws and “overwhelming” paperwork, time management is a critical skill that many college graduates must learn on the job. Follow-up as a skill – that is, demonstrating initiative and motivation on a project assigned – was lacking according to several interviewees. Graduates have the “book smarts” but not the “people smarts.”

In addition, a majority of employers noted leadership skills and prior work experience, which are key to hiring decisions, as skills that new graduates lack. Inability to write was cited time and time again by interviewees. Also, according to these professionals, students cannot “communicate face-to-face” very well. Social perceptiveness was cited by several interviewees, i.e., employees do not have an understanding of business culture and have difficulty adapting to this setting. For example, one interviewee noted that this generation of students do not “get” hierarchy, work ethic and the need to conform to culture, as opposed to stand apart from it “with multiple tattoos and piercings.” Also, interviewees noted that people just entering the workforce want the same lifestyle as their parents, but don’t want to work more than a 40 hour week to obtain it. In sum, a concentrated focus on curricula at colleges and universities provides students with substance, but students still lack life skills.

**Why are these skills not being developed?** According to interviewees, college and universities are not solely responsible for the skills gap. These skills are not being developed for a number of reasons. Lack of exposure to “real world” problems was cited, as was the role of technology as a contributing factor to skill development. For example, interviewees cited texting as a primary reason behind weak writing skills of candidates. Also, “old school” professionals value human interaction and in person visits, as opposed to email. According to an interviewee in the hospitality industry, students are not given the flexibility in scheduling that allows them to work and gain valuable experience in their area of study.

One interviewee noted that two-year college graduates are challenged for working in the 21<sup>st</sup> century marketplace. According to this interviewee, “we need people who know how to work in

teams and solve problems collectively.” A policy decision made years ago to emphasize 4-year college education at the expense of 2-year education is coming back to haunt us.

**What can we do about it?** Several suggestions were offered in the interviews. First, across the board, interviewees suggested internships, externships and a better network between higher education and industry as a way to address the skills gap. Formalized partnerships with schools create a solid pipeline for industry. In fact, creating a region-wide, formalized system where students will get credit for working in their field was suggested. Second, instructors should maintain a current understanding of what is going on in the field. According to one interviewee, “the best students we get seem to come from schools whose professors are still actively involved in the field.” Third, bringing human resources representatives to campus more frequently to talk to students about what is required in the professional workplace and offer suggestions as to how to get foot in door would help. In sum, good relationships and open communication between higher education and industry could help alleviate the skills gap.

### **Insights and Recommendations**

This report suggests that regional conversations regarding the skills of newly-minted graduates mirror national debate. However, it also indicates that the conversation is more nuanced than conventional wisdom suggests. Generally graduates possess substantive skills to break into the marketplace, suggesting that higher education is doing its job in educating students in the particulars of their disciplines and/or fields. Blame or fault for skills cited as lacking – time management, leadership, communication (especially written) and social contextualization – does not solely fall at the feet of higher education institutions. Nonetheless, the WNY College Connection can proactively engage stakeholders and garner additional resources to address skills needs in a way that benefits students and regional employers. WNY College Connection leadership can take a series of steps to strengthen relations between higher education and industry in the Western New York region:

1. **Promote and strengthen interaction among higher education career services offices, local employers, students and faculty.** The WNY College Connection already has taken steps to create a centralized, regional internship pipeline to feed local industries through its work with the Western New York Association of College Career Centers (WNYACCC). The WNY College Connection can enhance relationships among key stakeholders by aggressively marketing the WNYACCC pipeline and generate interest on the part of regional higher

education institutions and the business community.

2. **Establish education initiatives that facilitate the creation of internship programs across the region.** Whether holding a series of seminars that involve higher education career service directors and industry representatives on the nuts and bolts of creating internship programs or hosting networking events, the WNY College Connection can take a leadership role in fostering the creation of more region-wide internship programs.
3. **Provide opportunities for professors, researchers and scholars to become or remain actively involved in their respective fields.** Engaged scholars can serve as important links in student networks, facilitating information from and access to industry partners.
4. **Host a Connection-sponsored career fair or “HR Speakers Series” and invite industry human resource representatives to campuses on a consistent, regular basis to provide exposure and opportunities for students.** This event can be marketed internally at university and college campuses across the region. The Connection, too, can assist disciplines, like the humanities, that are currently under fire for allegedly not better preparing graduates for the workplace.
5. **Establish relationships and work with region-wide stakeholders to strengthen the P-16 education pipeline and create a ready workforce for the 21<sup>st</sup> century economy.** As noted in this report, higher education institutes are not solely responsible for creating an educated workforce for the 21<sup>st</sup> century. Working with education stakeholders across the pipeline, the WNY College Connection can take the lead in examining the regional P-16 education pipeline, assessing gaps and developing system-wide policies and programs to ensure that college graduates are ready for the challenges of the 21<sup>st</sup> century workforce.

# Skills & New College Graduates

Your Name \_\_\_\_\_

Company/School \_\_\_\_\_



## 35 Skills New College Grads May Need

*Skill missing?*

*Occupation(s) for which this missing skill is needed  
(by your company or the companies you work with)*

### 4 BASIC SKILLS

Nearly all of the entry-level jobs across industries require...



Reading Comprehension

Active Listening

Critical Thinking

Speaking

Writing

Monitoring

Active Learning

Judgment and Decision Making

### 4 ADDITIONAL SKILLS

Many but not all entry-level jobs across particular growing industries require...



### 4 ADVANCED SKILLS

Many entry-level jobs across selected growing industries require...



Social Perceptiveness

Service Orientation

Learning Strategies

Instructing

Complex Problem Solving

Coordination

Management of Financial Resources

Management of Material Resources

Management of Personnel Resources

Negotiation

Operations Analysis

Persuasion

Systems Analysis

Systems Evaluation

Time Management

Mathematics

Operation Monitoring

Science

Quality Control Analysis

Programming

Technology Design

Troubleshooting

Equipment Maintenance

Equipment Selection

Operation and Control

Repairing

Installation

### OTHER SKILLS...

...that may be important for jobs at your company but hard to find in new college graduates



Other ( \_\_\_\_\_ )

Other ( \_\_\_\_\_ )

**1. WHAT ARE YOUR REACTIONS TO THE FINDINGS PRESENTED?**

*Are the skills presented here commonly the ones regional employers tend to look for in new college graduates?*

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**2. WHAT SPECIFIC SKILLS ARE MISSING?**

*From your perspective, what particular skills do new college graduates commonly not have to get jobs appropriate to their field of study and succeed on the job? Are they the ones found by our study as being most important to employers? Are there others, perhaps less commonly required but nonetheless important skills? Please describe the missing skills in detail. For instance, if it's critical thinking, what do you mean by critical thinking? What critical thinking capacities do employers expect from new graduates that are hard to find?*

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**3. WHY ARE NECESSARY SKILLS NOT BEING DEVELOPED?**

*What, in your opinion, is the reason(s) these skills are not being adequately cultivated during students' college experience? Is it lack of academic opportunities to hone these skills? Are these skills not closely enough related to the some academic programs to be readily incorporated into the curriculum? Do employer standards for particular skills exceed academic standards?*

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**4. WHAT CAN WE DO TO HELP COLLEGE STUDENTS?**

*What, in your opinion, would help improve skills development during student's college experience? Internships? Co-ops? Selected extracurricular experiences?*

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**5. ARE THERE SUCCESSFUL MODELS WE CAN LEARN FROM?**

*What best practices have you seen that could serve as models that could be built upon?*

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