LIBERALLY EDUCATED VERSUS IN-DEPTH TRAINING: EMPLOYERS PERCEPTIONS OF WHAT THEY LOOK FOR IN NEW TALENT: CERI RESEARCH BRIEF 2012.4

Periodically the Recruiting Trends survey has asked employers to indicate what type of educational background they seek for their new talent pool. Ten years ago the response tilted strongly towards graduates from pre-professional programs, in part because the employer sample was small and skewed toward the manufacturing and financial services sectors. Over the past several years, the number of employers who have contributed to the survey has grown as our coalition of colleges and universities has a much broader reach. We anticipate that this broader representation of organizations hiring college graduates may have shifted, all be it slightly, toward the middle of our scale where acquired talent has a balance between pre-professional training and liberal arts education.

The advance of the globally networked economy has drawn attention to the need for a different type of professional staff than ten years ago. IBM refers to this person as the T-shaped professional: a person who blends deep knowledge in a field with cross-disciplinary acumen, supported with strong set of people or soft skills, which facilitate the spanning of boundaries (collaboration) within and outside the organization. This type of individual supports the need for new college hires to be balanced in their educational preparation. In the 2010-2011 survey we revisited the question of balance by asking employers to indicate the type of educated individual that they seek for their talent pool.

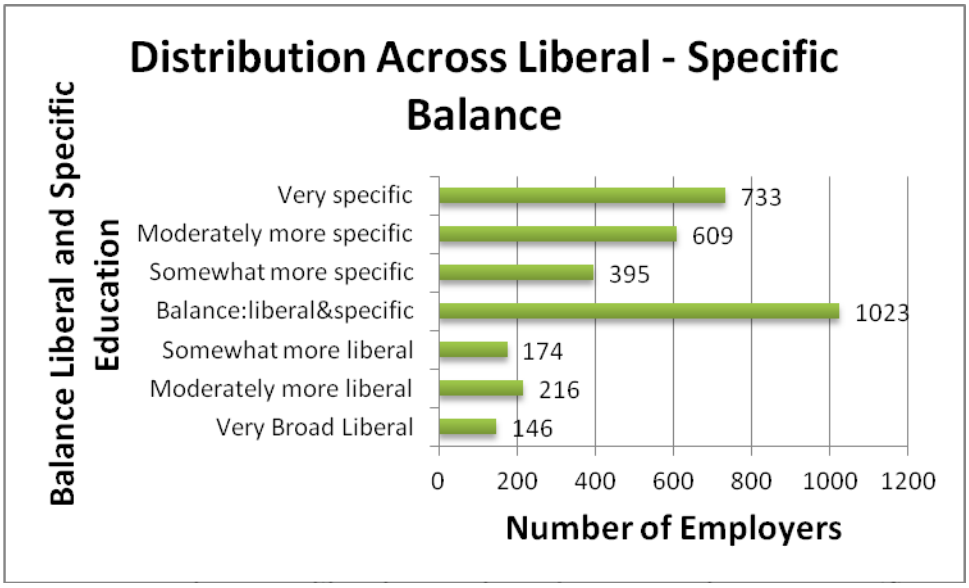
Employers were asked to consider the mix of students that they encounter while recruiting that could include:

- **students from a focused pre-professional academic program who have gained greater depth in their training**
  or
- **students from a broader focused academic program with additional emphasis on writing, mathematics, foreign language, international culture, and cross-disciplinary training**

On a seven point scale with 1 = very broad educational training and 7 = very specific educational training, employers were asked to indicate the type of student they typically selected as new hires.

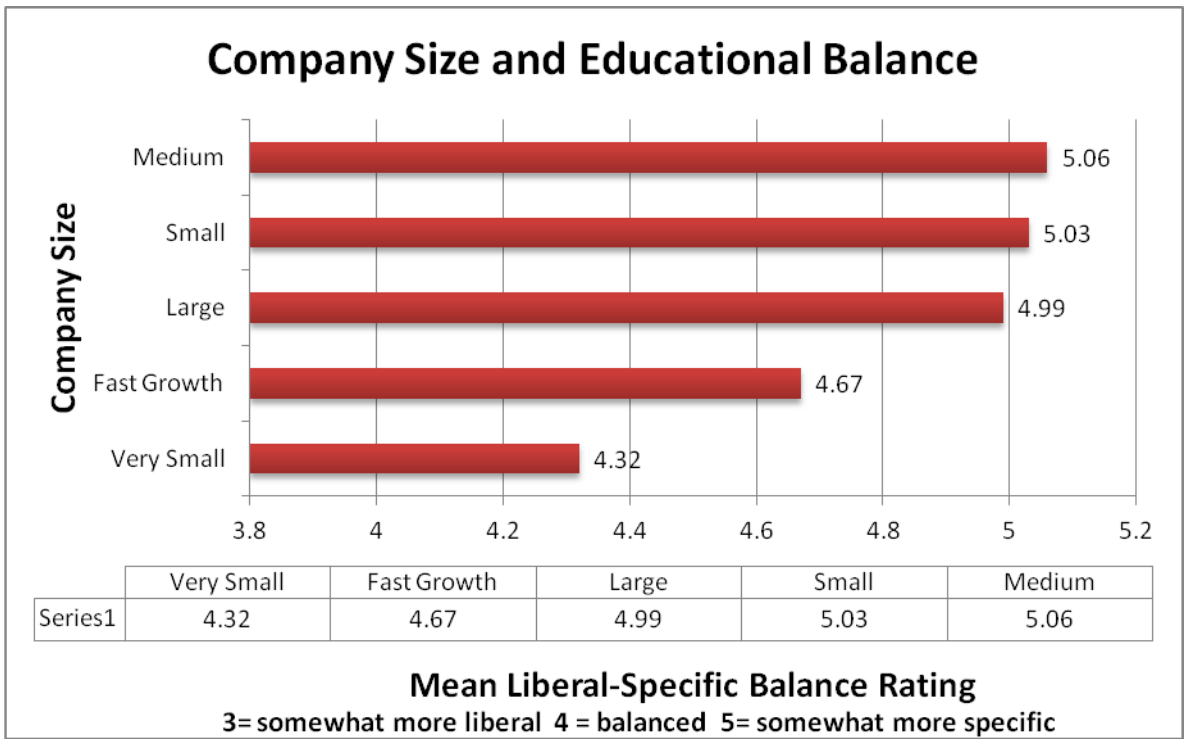
The Balanced Student

The mean of 4.84 suggests that employers lean slightly toward students with specific educational training. However, 30% indicated that they preferred a balanced student who was liberally educated and possessed specific knowledge of a discipline. Only 16% of employers focused on students with more generally based education. As the following chart illustrates employers are distributed across the scale such that: 11% seek moderately to very broad liberal education; 48% seek a somewhat liberal to a somewhat specific education; and 41% seek moderately to very specific education.



Company Size and Economic Sector

If company size is taken into consideration, small and mid-sized organizations (100 to 4000 employees) seek talent with more specific skills. These firms and establishments may be more focused on the goods or services they produce, as some may be second and third tier suppliers to larger organizations. They are possibly engaged in detailed parts development that probably requires more specifically trained talent. Large organizations may have a wider variety of positions that require training from multiple disciplines to fill talent needs; they also may want more individuals that can handle multiple job functions that require interdisciplinary training as well as abilities to cross boundaries. Very small and fast growth companies may require specifically trained talent, depending on their product/service focus, but usually they need talent that is flexible and can easily shift from function to function as the demands of the workday progress.

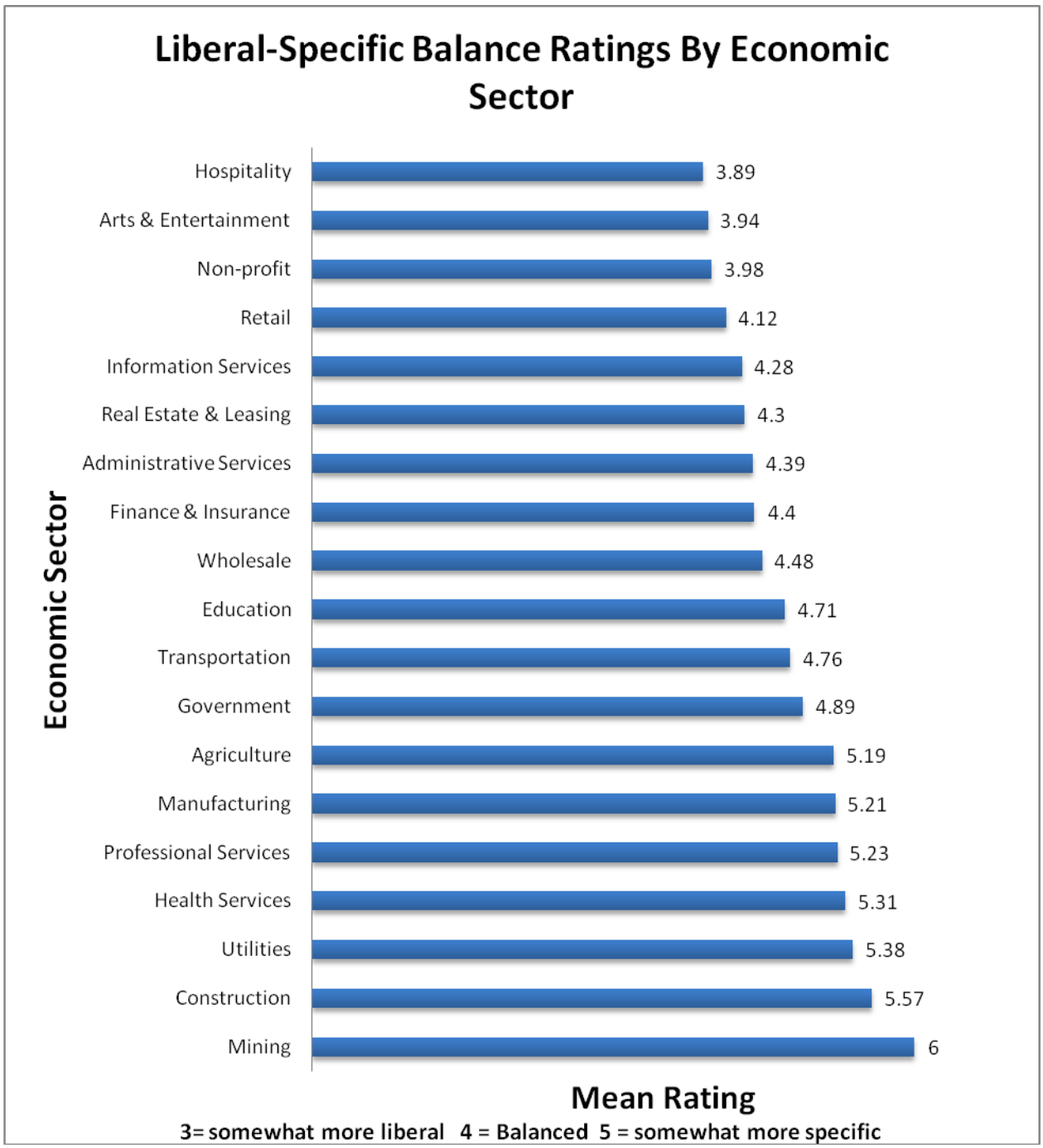


Very Small (9 or fewer employees); Fast Growth (10 to 100 employees); Small (101 to 500 employees); Mid-size (501 to 4000 employers); Large (4000 or more employees)

When we examined the mean ratings by economic sector, the range ran from somewhat more liberal to balanced education for hospitality (food and lodging), arts & entertainment, and non-profits organizations to a very specific education for construction, utilities and oil & mining organizations. The sectors at the moderately more to very specific end of the ratings were expected. Oil & mining, construction, and utilities are dependent on engineers, and technicians for their operations. Health services staffing requirements almost always requires specific training from nursing, therapists, and technicians to medical doctors. Fewer more balanced positions may be available in human resources, finance and other health service administrative functions.

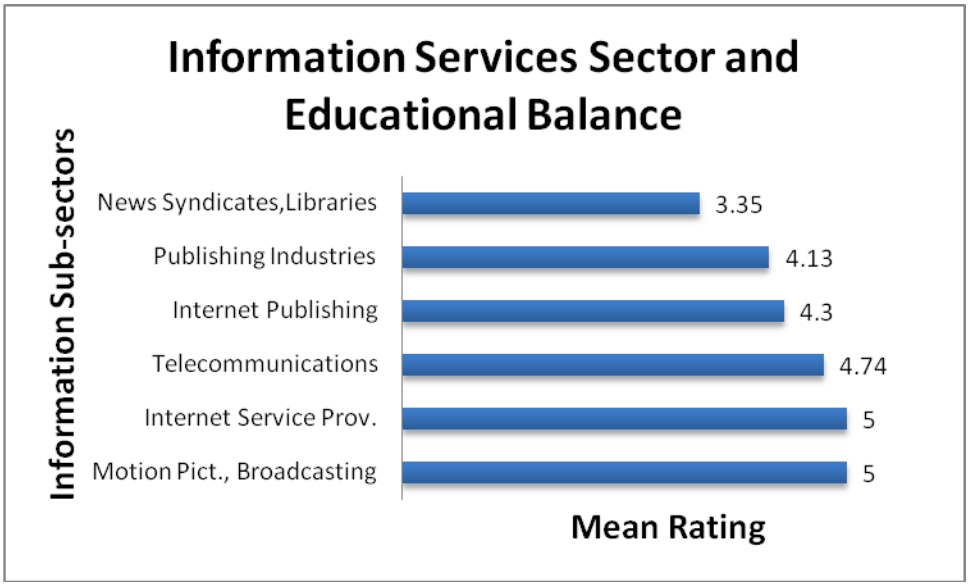
Professional services also places emphasis on somewhat to moderately specific education. This sector is important because the talent that these organizations require is spread over a number of academic disciplines. Because this sector includes law, accounting, engineering, computer science, marketing, supply chain, physical, biological and social sciences, and advertising & PR, for example, it has been presented separately below.

Sectors ranging from retail to agriculture are more likely to seek new talent which demonstrates a balance between liberal education and specific training.



When we look more closely at the Professional Service sector, we see that the sub-sectors that focus on very specifically trained talent include accounting, engineering services and scientific services (physical, biological, environmental and social sciences). Marketing research is the only sub-sector that leans toward the liberal education side. The remaining sectors are more posed toward the balanced candidate. Computer system and design services which require candidates that can demonstrate knowledge of programming, information systems, and software applications prefer candidates that have some liberal education.

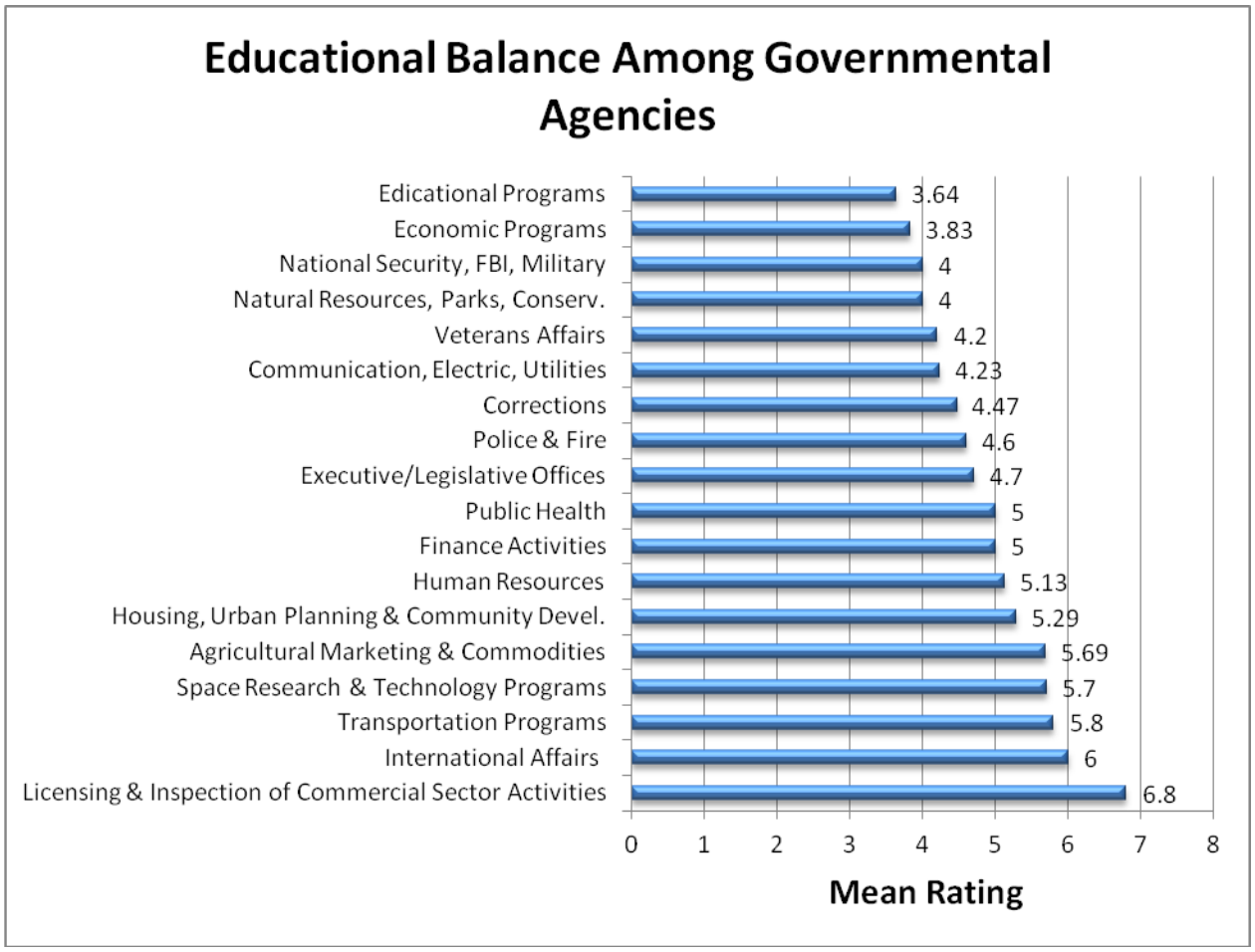
A sector where many students want to work is the information services sector where Google, FaceBook, and other web-based service providers are classified. Most of the sub-sectors seek balanced candidates. The exceptions are among motion picture/broadcasting companies and internet service providers who seek more specific skills.



Other sectors also show similar patterns among their sub-sectors in that some sub-sectors seek balanced candidates while others seek talent with more specific skills. The non-profit sector ranges from religious organizations with a

mean of 5.54 to labor organizations with a mean of 2.80. In education, for example, K-12 and college/university positions seek talent with more specific education while sports and recreation instruction, language schools (specifically ELS), and educational support services (tutoring and exam preparation) recruit from students with more liberal educations. The finance sector is unique in that every sub-sector reported a mean between 4.0 and 4.5.

The government sector because of the many different functions it serves has a wide range of educational needs ranging from balanced to very specific, as the following table illustrates.



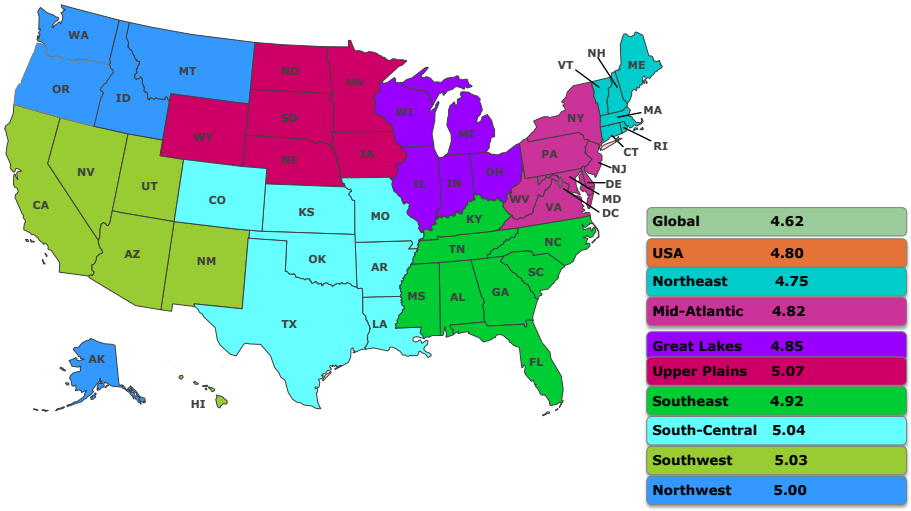
Regional Comparisons

A quick comparison between geographic regions revealed no strong differences in the ratings. Employers were assigned to geographic regions based on where they targeted their recruiting. The grouping included:

International: Recruiting is focused globally
United States: Recruiting is focused across the U.S.
Regional: Recruiting is focused to states within the region

The map below illustrates the different regions and the insert provides the mean scores for each of the recruiting regions. The tendency throughout the country is toward balanced to somewhat more specific than liberal. The areas that tend toward the balanced student include global, US, and regional hiring in the eastern half of the US. Regions toward the western half of the country tended to be slightly more specific.

Regional Ratings on Educational Balance



A Comparison of General – Balanced – Specific Educations

The organizations were grouped based on their rating score into: ***General*** with scores of 1 & 2; ***Balanced*** with scores of 3, 4, & 5; and ***Specific*** with scores of 6 & 7.

Education Group	Number	Mean Rating
General	362	1.6
Balanced	1592	4.14
Specific	1342	6.55

Note that the number of organizations recruiting students with a broad ***General*** liberal education is much smaller (about 10%) than the other two groups. The ***Balanced*** group comprises nearly half the respondents with those seeking very ***Specific*** educational trained comprise about 40% of the sample. For each group a profile was constructed based on most requested majors, key sector sectors and subsectors, job assignment, and size. The groups were further compared on employers' perceptions of student behaviors and the commitment of organizations CEO to recruit liberally educated students.

The top **academic majors** that employers, within each group, were recruiting during the academic year are listed in the table below. For example, 36% of the employers within the ***General*** group and 45% within the ***Balanced*** group were seeking "All Majors" – they were looking for the best talent available regardless of academic major. Among

the employers in the Specific group, 32% were looking for "All Technical" or students with a background in engineering, computer science or related technical programs.

Academic Majors Most Requested by General Group		Academic Majors Most Requested by Balanced Group		Academic Majors Most Requested by Specific Group	
All Majors	36%	All Majors	45%	All Technical	32%
All Liberal Arts	27%	All Business	32%	Accounting	29%
Marketing	27%	Marketing	31%	Computer Science	22%
All Business	25%	Accounting	30%	All Business	22%
Communications	24%	Finance	30%	Finance	21%
Public Relations	21%	All Technical	24%	Electrical Engineering	19%
English	19%	Communications	24%	Computer Information Sys.	19%
Psychology	19%	Computer Science	23%	Mechanical Engineering	18%
Accounting	18%	All Liberal Arts	21%	Computer Programming	18%
Advertising	18%	Management Information Systems (Business)	21%	Marketing	17%
Social Work	17%	Management Information Systems (Computer Science)	19%	Management Information Systems (Computer Science	17%
Sociology	16%	Computer Information Sys.	19%	Information Science	15%
Finance	15%	Economics	19%	Human Resources	14%
Journalism	15%	Public Relations	19%	Civil Engineering	13%
Management Information Systems (Business)	14%	Computer Programming	18%	Management Information Systems (Business)	13%
Economics, Public Administration, Family Services, All Technology	13%	Human Resources	18%	Computer Engineering	12%
MBA	21%	MBA	28%	MBA	22%

When group comparisons are made across **economic sectors,** the ***General*** group is found in more key sectors with 16% of their employers being in Professional & Scientific Services, 14% in Non-profit organizations, and 11% in Educational Services. The ***Balanced*** group is slightly more concentrated in Professional & Scientific Services

(18%), Manufacturing (12%), and Education, Finance and Insurance, and Government (11% each). The ***Specific*** group is largely composed of employers from Professional & Scientific Services and Manufacturing.

Economic Sectors	Top Sectors General Group	Top Sectors Balanced Group	Top Sectors Specific Group
Professional & Scientific Services	**16%**	**18%**	**27%**
Education	**11%**	**11%**	**9%**
Non-profit	**14%**	**8%**	
Finance & Insurance	**10%**	**11%**	
Government	**9%**	**11%**	**11%**
Manufacturing	**6%**	**12%**	**15%**
Information Services	**6%**		
Health Services			**9%**

We extracted the **key sub-sectors within each major economic sector.** The following groupings list the total number of economic sub-sectors (based on 3-digit NAIC codes) contributed to each group and the sub-sectors that were most frequently counted with each group.

- ***General*** Group: Appeared in 106 different economic sub-sectors with highest concentration in these segments – Insurance (6%), Education K-12 (5%), Legal Services, Computer Systems Design, Management Consulting, Colleges and Universities, Social Advocacy Organizations, Civic and Social Organizations (all 3%), and Publishing, Building Services, Educational Support Services, Social Assistance, Business & Professional Organizations, Non-profits (not classified) (all 2%)

- ***Balanced*** Group: Appeared in 149 different economic sub-sectors with highest concentration in these segments – Insurance (5%), Computer System Design, Management Consulting Services, Executive & Legislative Offices (all 3%), and Manufacturing (not classified), Merchant Wholesalers, Financial Services, Advertising, PR & Media Buying, Police & Fire Protection, Social Advocacy Organizations, Business & Professional Organizations (all 2%)

- ***Specific*** Group: Appeared in 142 different economic sub-sectors with the highest concentration in these segments – Education K-12 (7%), Accounting, Computer Systems Design (both 6%), Hospitals (3%), Civil Engineering Construction, Food Processing Mfg., Chemical Mfg., Insurance, Financial Services, Management Consulting services, Scientific Research Services, Ambulatory Health Care, Environmental Quality & Conservation Prgs., Military (all 2%)

Company Size comparisons found very small and fast growth companies represented 60% of the employers in the ***General*** group which less than 50% in the other two groups. Larger employers (more than 500 employees) were more likely to in the ***Balanced*** (33%) and the ***Specific*** (37%) than in the General group (24%).

Size of Company	General	Balanced	Specific
Very Small (1-9 employees)	17	10	7
Fast Growth (10-100 employees)	43	34	32
Small (101-500 employees)	16	23	24
Mid-size (501 to 4000 employees)	13	17	20
Large (> 4001 employees)	11	16	17

Job Assignments

Employers had the opportunity to indicate the job assignments that new hires typically were assigned upon entering the organization. The job assignments for the ***Specific*** group tended to be more technical, related to engineering, computer science, and accounting. In the other two groups job assignments tended to span the spectrum of technical and non-technical activities. ***General*** employers more likely to assign new hires to customer service, sales, marketing, and administrative positions. The ***Balanced*** group shows a similar pattern but accounting is also an important job function. Within the ***Specific*** group more technical and focused job assignments top the list: accounting, computer services, and project management.

General	Balanced	Specific
Customer Services 29%	**Administrative Services 29%**	**Accounting 28%**
Sales 28%	**Accounting 29%**	**Computer Services 22%**
Administrative Services 28%	**Sales 27%**	**Project Management 18%**
Marketing 25%	**Customer Services 26%**	**Administrative Services 17%**
Education 21%	**Marketing 25%**	**Design Engineering 16%**
Accounting 20%	**Business Services 22%**	**Human Resources 15%**
Management Training/Rotational Prg. 19%	**Computer Services 21%**	**Information Services 15%**
Business Services 19%	**Human Resources 21%**	**Marketing 14%**
Media Communications (PR, Adv., etc) 17%	**ManagementTraining/Rotational Prg. 19%**	**Sales 14%**

Consulting Services 14%	**Information Services 18%**	**Management Training/Rotational Prg. 12%**
Human Resources 14%	**Education 16%**	**Consulting Services 12%**
Financial Services 12%	**Financial Services 15%**	**Health Services 12%**
Media Design (graphic, web) 11%	**Media Communications (PR, Adv., etc) 15%**	**Technical Services 12%**
Volunteer Management 11%	**Project Management 13%**	**Manufacturing Engineering 11%**
Information Services 10%	**Media Design (graphic, web) 12%**	
	Consulting Services 12%	

Behaviors and Attitudes. Employers constantly express concern about students not having realistic career expectations, inappropriate professional behaviors, and inadequate preparation for the recruiting process. We asked employers to compare students who were currently graduating into a very poor labor market to those who graduated only five years earlier but into a very good labor market their preparedness to enter the workplace. Our assumption was that students who were facing a more difficult labor market would be more likely to be better prepared for the recruiting process, hold more realistic career expectations, and present a more focused career direction. The mid-point of the 5-point scale was "no difference between students today and students 5 years earlier." Scores lower than 3 signaled that today's students were not as ready for the workplace as their peers five years ago while scores above 3 indicated they were better prepared.

Only in the area of *resume presentation* did today's candidates out shine those candidates five years ago. In every other category the mean scores were below 3. Fortunately some were not significantly different from 3. This means that, in general, students' behaviors have not been altered much by the economic recession. However, the areas of professional maturity and demeanor (appearance, communication, for example) seem to have gotten significantly worse. It, also, does not appear that expectations have adjusted to the economic reality of the times.

The comparison between the three groups found little difference in employer ratings across all the dimensions. ***General*** employers did rate the career expectations higher than employers from the other two groups (only comparison that is significant); all be it, the means are well below three. ***Specific*** employers report that the students they recruit hold the most unrealistic expectations though not by much.

Attitude/Behavior	General	Balanced	Specific
Realistic career expectations	2.57	2.49	2.46
Express career interests and direction	2.80	2.82	2.88

Interact with other employees	2.86	2.96	2.97
Professional maturity	2.52	2.55	2.59
Knowledge of your company	2.91	2.86	2.89
Interviews	2.93	2.94	2.94
Professional demeanor	2.63	2.69	2.68
Articulate skills and competencies	2.85	2.87	2.88
Resume presentation	3.09	3.10	3.14

Preparedness. In a different question that was comparing different types of institutions (two year, four year publics & privates, and for-profit), we asked employers how well prepared students were with regards to the recruiting process, content knowledge, and organizational adaptability. We pulled out the responses for the bachelor degree graduates from four year public and private (non-profit) institutions to compare the results between the three groups. The five point scale ranged from 1= *not very well prepared* to 5 = *extremely well prepared* with the mid-point being *adequately prepared*.

For the most part employers viewed the students as adequately prepared in all three areas. The only troubling result was a significant difference for preparation in the content knowledge required for their work assignments. In this case ***General*** employers rated their candidates lower than the employers in the other two groups. This finding may underscore one of the problems that students with a more general education encounter in their initial jobs: they do not have a deep enough mastery of a content area to gain traction for a fast start in the workplace. They may have to spend more time learning deeper content or gain mastery over a specific set of skills before they can confidently settle into their job. Of course, this delay sets back their initial career trajectory; holding them back until they can figure out ways for them to contribute to the organization.

	General	Balanced	Specific
for interviews and other pre-hiring processes are these students	3.01	3.04	3.04
in the content knowledge area required for their work assignments	2.99	3.08	3.07
in their ability to adapt to and fit in your work environment	3.10	3.10	3.08

What CEOs think! It is a commonly held belief among some advocates for the liberal arts that CEOs publically express the value of a liberal arts education in the workplace but it is the human resources folks that fail to "walk the talk." This claim is hard to substantiate. With the majority of CEOs having engineering or a business background, their familiarity with liberal arts education may actually be more limited. Having said that we asked the employer

representatives in our survey to indicate whether their CEOs espouses support for the liberal arts and whether hiring practices were in-line with the CEOs expectation.

On these measures we do see considerable differences between our groups. The liberal arts rhetoric seldom appears in the ***Specific*** group: either the CEO does not espouse or it is a non-issue. The latter probably indicates that these organizations simply opt to ignore the liberal arts candidate. Because they are large and more likely to be visible on-campus, their message may be more pronounced which immediately puts the liberal arts on the defensive.

However, the other two groups do place a value on the liberal arts and they act upon it. For ***Balanced*** organizations, only about one-fifth of the CEOs fail to espouse the liberal arts. Nearly 50% say it is a non-issue. In this case, the rational may be that the organization is looking for the best talent available regardless of major (remember they have the highest percentage of organizations recruiting "All Majors") and in many cases the liberal arts candidate fits the requirements. Should the CEO espouse the liberal arts, the organization is very likely to "walk the talk."

CEOs from the ***General*** group are more likely to advocate for the liberal arts (54%) with their organization's hiring practices in-line with this message. Another large group reported that this was a non-issue. Again let us assume the rational among these CEOs is simply: the best talent makes us successful.

The problem for the liberal arts is that they do not have an evangelist among their CEOs who proclaim their value in a loud, confident voice. The stage is captured by CEOs from the ***Specific*** group that pound on the table for more specifically trained engineers, computer science, and business graduates; and politicians, policy gurus, university administrators (not all), and parents listen. However, the ***Balanced*** CEOS want these majors too; but they need them agile so they can adapt to the pace, complexity and ambiguity of their businesses. ***The Achilles heel for the liberal arts remains that their true advocates are small in number and lost among the clamor of those currently controlling the workforce agenda.***

	Employers in General Group	Employers in Balanced Group	Employers in Specific Group
Not something company CEO or President espouses	12	21	39
A non-issue in our company or organization	35	49	46
Leadership espouses and follow it in our hiring practices	50	21	6
Executive management espouses, but hiring targets pre-professionally focused	4	9	9

Two options, really. Some observers will not read too much into these results and we probably should not. The questions were intended to provide a quick snapshot on current employers thinking about the educational profile they tend to recruit. With any luck, others may take on more detailed studies on the issues that surfaced in these initial findings. Still, we can present students today with two options for their college education. Either you are:

A liberally educated technical (professional) graduate

or

A technically savvy liberal arts graduate

The first option means that a student enrolled in a professional program needs to have an educational experience that balances the in-depth training with academic inquiry that strengthens communication, cross-cultural, and critical thinking (beyond problem solving). The accreditation board for engineering (ABET) has been an example of the need for engineering to have this balance. Their eleven key competencies have lead to a revitalized and crammed academic program for engineers and most computer science students. Unfortunately, recent efforts seem to be trying to weaken these requirements in order to allow faculty to provide time for more engineering content.

The harder transition will be to provide the liberal arts student with enough technical expertise to be validated by employers. Technical competencies can be found in several places in addition to computer skills. In fact, most employers assume that all graduates have basic computer literacy in mastery of office suite software (text, spreadsheet, data management) and can handle basic web tasks, such as web content and basic design. Options for technical skills might include:

- Computer: programming languages, comfortable with variety of software programs, production of web podcasts, videos, and other advancements in web content and design.
- Scientific: understanding of a scientific research protocols and methods, sufficient depth in a scientific area to facilitate communication between scientists and non-scientists.
- Systems: basic understanding of engineering principles, understand the role of systems in defining solutions to problems
- Information management: advanced research methods, statistical abilities, managing data sets, and extracting information from various connected data streams
- Business: understanding basic principles of a business field (marketing and supply chain most often requested)

In each of these options, the students simply cannot take a set of courses to qualify them as "technically competent." They are going to have to engage in activities that can demonstrate that they have proficiency in their technical competency. For example, a student from history could work under the supervision of a faculty member on a problem facing an organization in the community. Starting with problem identification, the student can design a research program, collect and analyze data, and make a presentation to the organization (and if designed well, a publication in a regional scholarly journal appropriate for the topic).

Generalists – T-shaped – Specialists (The New Horizon). The results from this study --- that balance is the key – opens an opportunity to introduce an important concept that some corporations and educational institutions are having conversations that can transform higher education throughout the world. Simply it is all about the T-shaped professional. Little research has yet been done on the T-professional but from my understanding T's fit into the spectrum of the general – specific continuum right in the middle – the *Balanced* group. Their main asset is their balance!

For so long, those professionals who were not specifically (and deeply) trained found it hard to fit into many organizations and were cast off as generalists. Generalist tend to have a broad knowledge base, acquiring

knowledge in all fields that interest them, but have a hard time defining what they can do. It is not until they begin to develop a path of deeper understanding (not always by pursuing a PhD) that they gain a foothold for their career. Generalist always struggle to maintain continuity in their career unless they are fortunate to carve out a unique value proposition for their employers (if the employer is not themselves). This figure illustrates the Generalist.

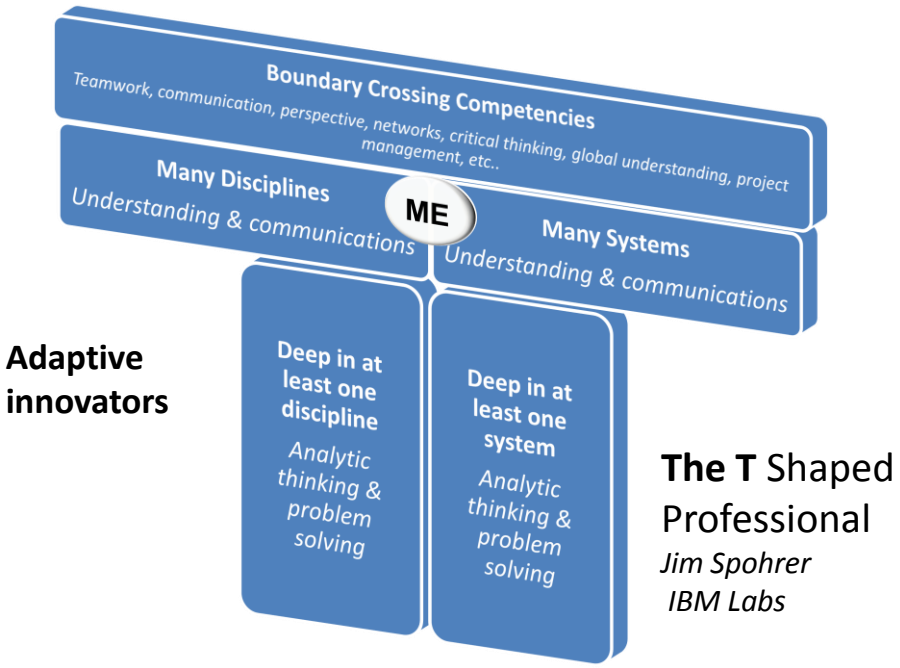
The specialist has deep understanding of a discipline. Our university education system is centered on developing disciplinary mastery. The rewards, both for those within the university and for those in most organizations outside the ivy walls, are to continue to expand the external edges of one's field. Gain further mastery; probe deeper. This approach worked well in a production based economy where specific skills had specific slots to fill. The danger to I-shaped professionals (the notation for in-depth professional) is that technology can cause obsolesces unless the person continues to gain more skills. The replacement of the production economy with a networked economy has played havoc with I-shaped professionals because the arrangement of work is no longer linear but multi-faceted, technologically enhanced systems. I-shaped professionals will still be a key member of most organizations as they do the detailed research and development. But they are being forced to transform into T's as their jobs are mushed (my favorite IBM word) with other functions.

This figure represents the typical I professional.

The T-shaped professional embodies not only the depth of knowledge found in the I-shaped professional but combines this knowledge with interdisciplinary understanding and a set of skills that facilitate the crossing of multiple boundaries (job functions, multiple internal teams, external clients and organizations). The IBM model shown below emphases T's that have gained understanding of at least one of the core systems that we depend on daily for our survival (food, water, transportation, energy, IT/cloud computing, education are examples). One of the major differences between the I-shaped professionals we are producing now and the T-shaped professionals that are needed is self-awareness (ME). In order to thrive, I-shaped professionals focus on their external edges as it is their knowledge skills that make them valuable. For the T-shaped professional, inner self-awareness is critical because it is the glue that holds the T together. A T-shaped professional has to have a strong inner sense of purpose, guided by their core values, simply because they have to rely on their own inner direction (gps) to navigate through their job assignments and manage their career.

Interest is growing as tracked by the number of hits in Google on IDEO, t-shaped people (person & professional); Stanford, t-shaped people (person & professional): and Singapore, t-shaped people (person & professional). The general Google search on IDEO search (where the T-shaped concept originated) nearly 18,000 references were identified. The Stanford search garnered 16,000, many of the overlapping the IDEO search. In Singapore where the t-shaped professional has found a beachhead, the search produced approximately 5,700 hits. Many sites linked the T-shaped concept to the human resource challenge faced by global companies. Earliest references

focused on engineering and IT professionals and curriculum. More recent articles have seen the concept move into other professional areas. When limiting the search to scholarly articles only about 60 are identified. Many are associated with the IBM research team from their Almaden Lab in California where a cadre of international scholars has begun to focus on the t-shaped person in the field of service science engineering and management. Further scholarly expertise can be drawn from the boundary spanning literature which focuses on the same type of person.



We will be going to see more on the T-shaped person as corporations take a systems approach for their businesses (IBM and GE for example have their approaches well laid out, for example). Systems require those with a technically balanced education to solve key bottlenecks, strengthen connections, and expand the health of the system. It is within this context that liberally educated students have the most to gain and the most to offer.