Strengthening Enrollment
with Market-Aligned Programs
FULL TRANSCRIPT

In-demand academic programs that align with learners' goals are the foundation of effective enrollment and retention strategies. The good news is, the same data used to develop these programs in the first place can (and should!) also be used to communicate their value to prospective students.

In this paper, you'll learn the "why" and "how" of aligning programs with labor market trends, and leveraging that alignment to market programs more effectively. Read on for an overview of recent trends, key data points to consider, and strategies for putting that data to work.

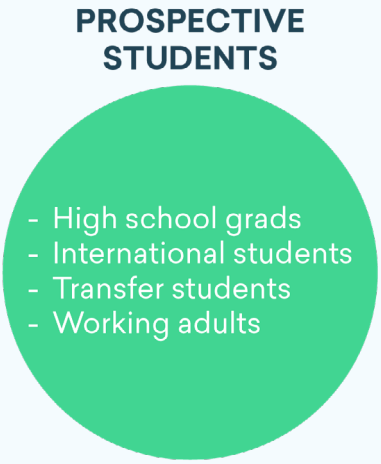
Part 1: Why Alignment Affects Enrollment

What "Market" Should We Align To?

Let's start by defining terms. What does it mean for academic programs to be "market-aligned"? After all, a market is simply a place where two or more parties come together to exchange ideas, goods, or services. And, in the context of higher education, there are at least two potential markets we could try to align with:

1) Prospective student market

First, there is the market for prospective students. These are the high school graduates, transfer students, international students, and (increasingly) working adults who are considering enrolling at your institution...or a different one. These individuals all have their own preferences and desires, goals, and priorities. So, this is one market you could align to.



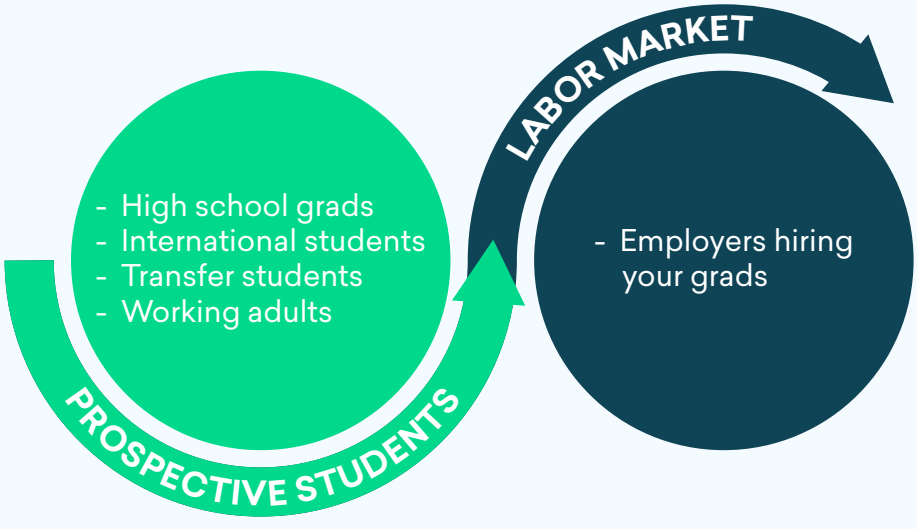
2) Labor market / job market

But there's also the labor market, or job market. This market is composed of all the employers in both the public and private sectors who might hire your students when they graduate. These employers have jobs they need to fill, work they need done, and specific skills they're looking for in potential hires.

So the question is: Which of these two markets should your programs align to? The needs and wants of prospective students? Or prospective employers?

Trick question. It's both.

Why? Well, as we'll see, these two markets tend to align with each other in the long run. In fact, the second group (the labor market) actually tends to shape and inform the desires and education preferences of the first group (prospective students). This means that the labor market acts as a sort of "early warning system" that tells institutions what kind of education and training students will be asking for in the near future. As a result, when programs align with the labor market, they are more aligned with the prospective student market. To put it another way, aligning with the labor market is the most efficient and effective way to align with the prospective student market.



But is this really true? How can we be confident that this is the case?

To answer those questions, let's ask another one:

What Motivates Learners to Seek Higher Education?

Rather than speculating, we'll jump into some survey data to see what learners themselves say:

All Respondents	All Bacc Institutions
The following reasons were "Very Important" in deciding to go to college:	
To be able to get a better job	83.5
To gain a general education and appreciation of ideas	75.4
To make me a more cultured person	50.3
To be able to make more money	73.2
To learn more about things that interest me	83.4
To get training for a specific career	78.6
To prepare myself for graduate or professional school	60.4
To please my family	37.1

First, we have the Higher Education Research Institute's CIRP **freshman survey from 2019**. When asked to rank the reasons that were "Very Important" in deciding to go to college, 83.5% of freshmen said "To be able to get a better job," (the top response):

Next up, let's look at **Strada Gallup's 2018 survey**, "Why Higher Ed?" This was a robust research project involving over 89,000 U.S. adults with experiences at over 3,000 institutions. Here are their top 3 findings.

1

Work outcomes are the main reason most people choose higher education, more than double the percentage representing the next most prevalent motivation.

Fifty-eight percent of education consumers say getting a good job is their primary motivation, compared with 23% who report a general motivation to learn more and gain knowledge without linking it to work or career aspirations.

And the next two topline findings are that this focus on work outcomes holds true across institution type and across demographic subgroups:

2

Work outcomes are the primary motivation across all higher education pathways, not just four-year colleges and universities.

Fully 72% of those with postgraduate educational experiences say getting a good job is their top motivation, as do 60% of those on a technical or vocational educational pathway. Four-year degree holders (55%), two-year degree holders (53%) and noncompleting students (50%) are also most likely to identify work and career motivations.

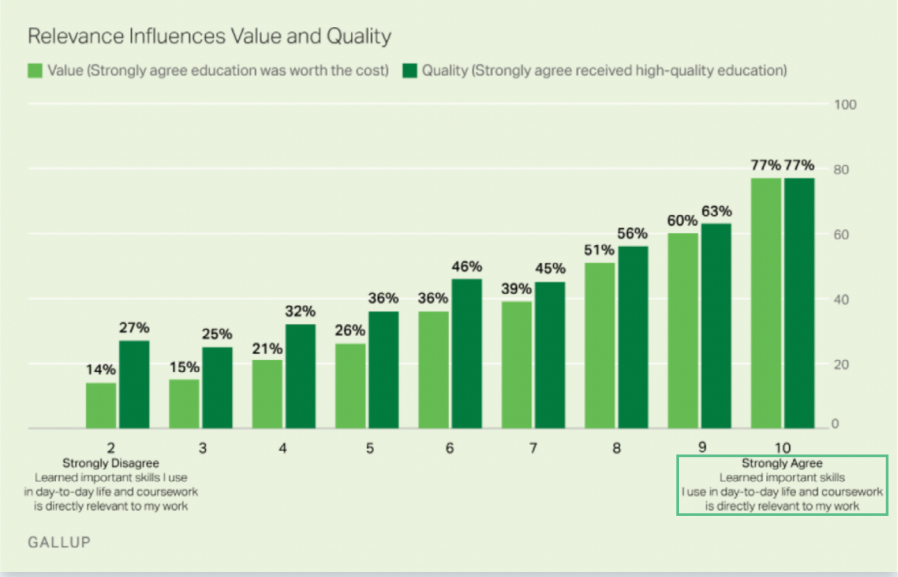
3 Work motivations are strikingly similar across demographic subgroups.

For example, women (59%) and men (56%), those whose parents have bachelor's degrees (57%) and those whose parents do not (58%), people across the spectrum of current income levels (57% to 60%), and individuals of various races and ethnicities (56% to 59%) all cite career motivations for their chosen educational pathways at similarly high rates.

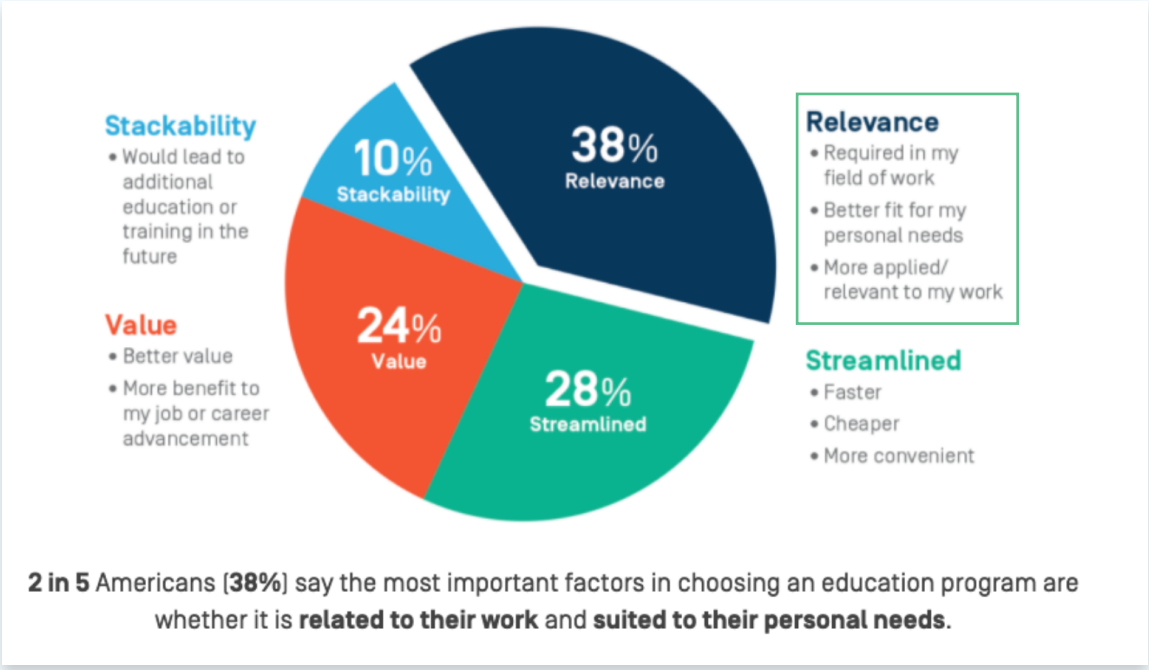
And here's a look at **research from Eduventures** that focuses on the expectations of adult learners considering going back to school:

Note that the top five answers are all job/career related. Also note that respondents *did* have the option of saying: "None of the above. My desire for continuing education is not related to my career." And that response came in second to last.

It's important to keep in mind here that we need to think about career outcomes *holistically*. Money matters, but it's not just about the money. For example, **the 2018 Strada-Gallup survey shows** that students' perception of the **value** and **quality** of their education correlates strongly with the **relevance** of their coursework to their daily life and work. Note in the chart below that it doesn't say anything about income or money. Only value, quality, and *relevance*.

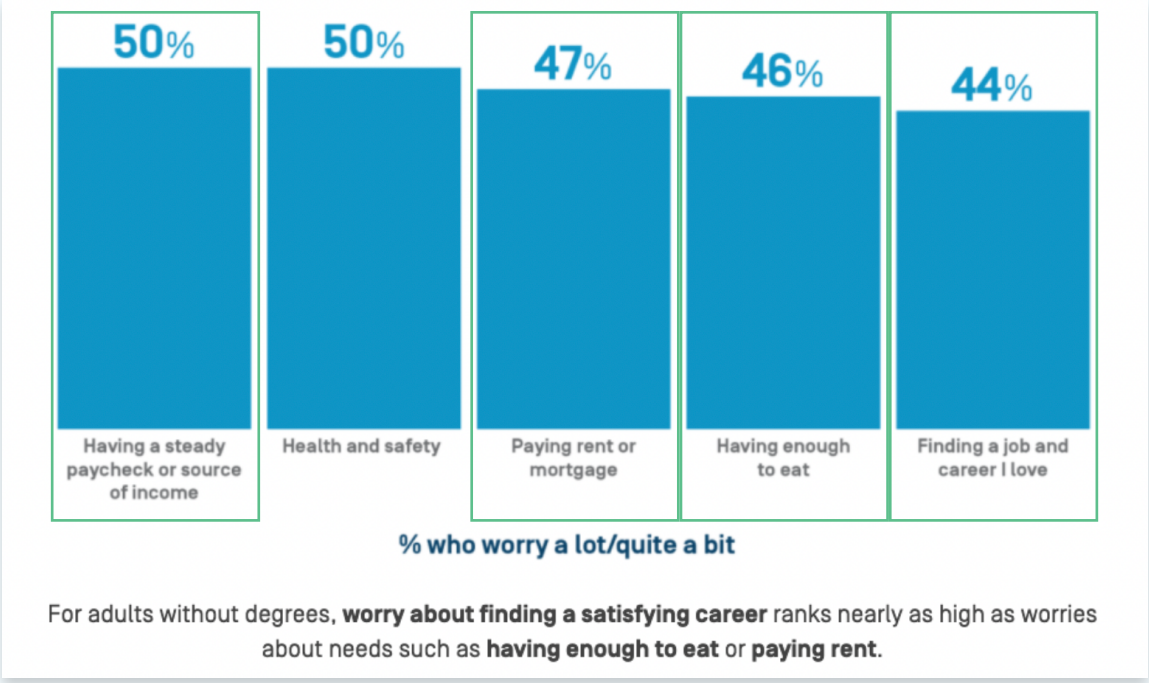


And **Strada's more recent survey**, from August 2020 (in the thick of the pandemic) shows this same emphasis on relevance holds true for learners seeking short-term and skill-based training options:



2 in 5 Americans (**38%**) say the most important factors in choosing an education program are whether it is **related to their work** and **suited to their personal needs.**

And one last example that hammers home the importance of this holistic "both/and" understanding of career outcomes. **One iteration of the Strada survey** asked adults without degrees what was on their minds during the pandemic. Here are the top results:



For adults without degrees, **worry about finding a satisfying career** ranks nearly as high as worries about needs such as **having enough to eat** or **paying rent.**

We see that three of the top four most common answers have to do with practical, economic concerns: Having steady income, paying bills, and putting food on the table. Clearly, the ability to earn enough money to satisfy basic needs is a top priority. ***But***, note that 44% of respondents are concerned with "finding a job and career I love."

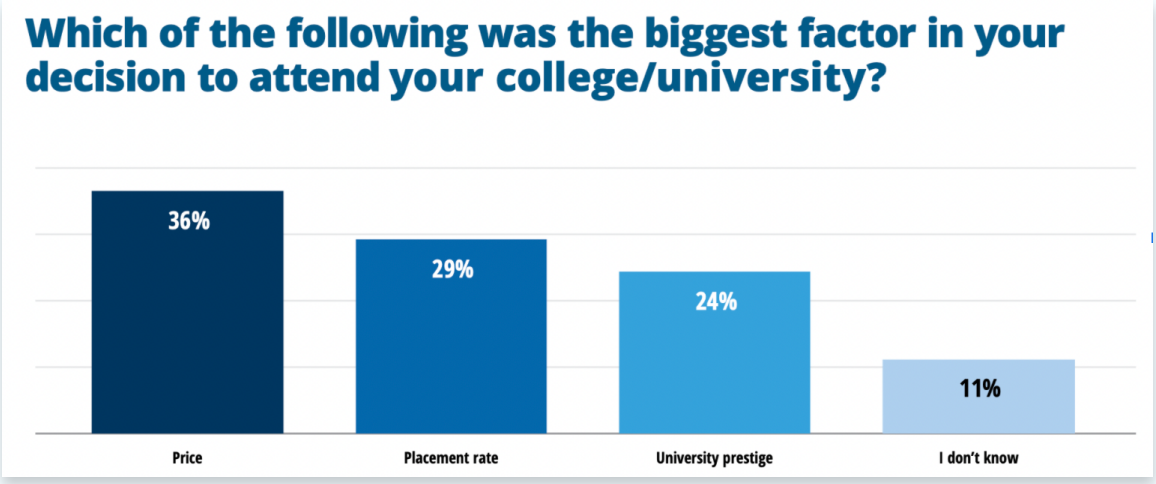
So, when prospective students tell us they care about career outcomes, they're not just saying "show me the money!". It's more than that. They're also looking to higher education to equip them with the skills and knowledge they need to do meaningful work in the world.

Why does this holistic perspective matter?

Consider the example of a student from an underprivileged community who goes to college and then goes on to earn a Master of Arts degree in teaching. That student then decides to go back to their community and teach in the (under-resourced) public school system. They feel called to reinvest in the next generation as a teacher, and their education has equipped them to do that. If you *just* look at career outcomes in terms of income, this grad might not stand out in your database. But, according to the survey data we've been reviewing, this student might still rate their education as highly valuable, because it is *relevant* to the work they do every day. Income is important, but relevance is essential.

One last example, this one from the **Cengage Graduate Employability Report**. In Spring of 2021, they surveyed 1,600 working adults to ask what factors determined their choice of college/university. Whereas the other surveys we've looked at were about why people choose higher education generally, this one zooms in on why they choose one institution over another.

Here are the leading factors:



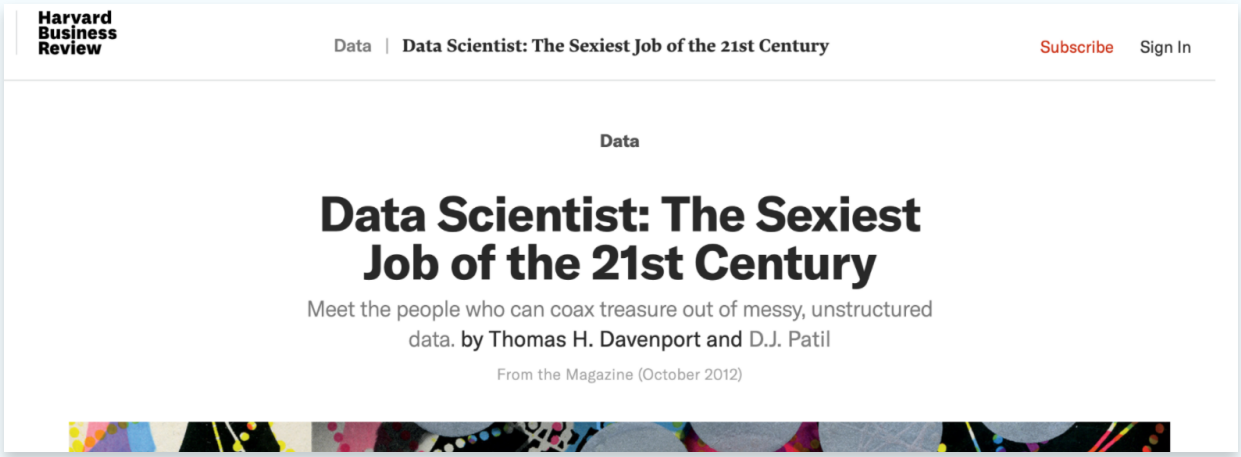
Anything stand out to you about this bar chart? Consider the top two responses: “Price” and “Placement Rate.” Interestingly, these are the two ingredients that comprise one of the most powerful and widely-used concepts in decision making: ROI.

The “I” in ROI stands for ***investment*** and is represented by “Price”: the most common “biggest factor” in determining where to go, according to the survey. The “R” in ROI stands for ***return*** and is represented by “Placement Rate”: the second most common “biggest factor,” per the survey.

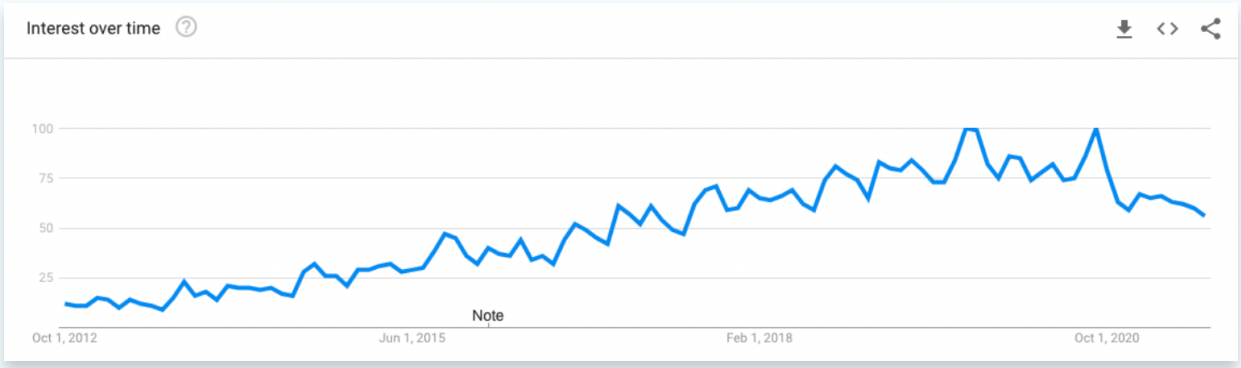
In other words, when deciding where to pursue further education, working adults consider whether the investment they make will lead to the career outcome they desire. No wonder then that the job market shapes the plans and preferences of the prospective student market.

A Real-World Example

For an illustration of this “shaping” dynamic at play, consider the recent explosion of interest in Data Science (both in the job market, and the academy). Here is a well-known and often-cited headline from a **2012 Harvard Business Review article**:

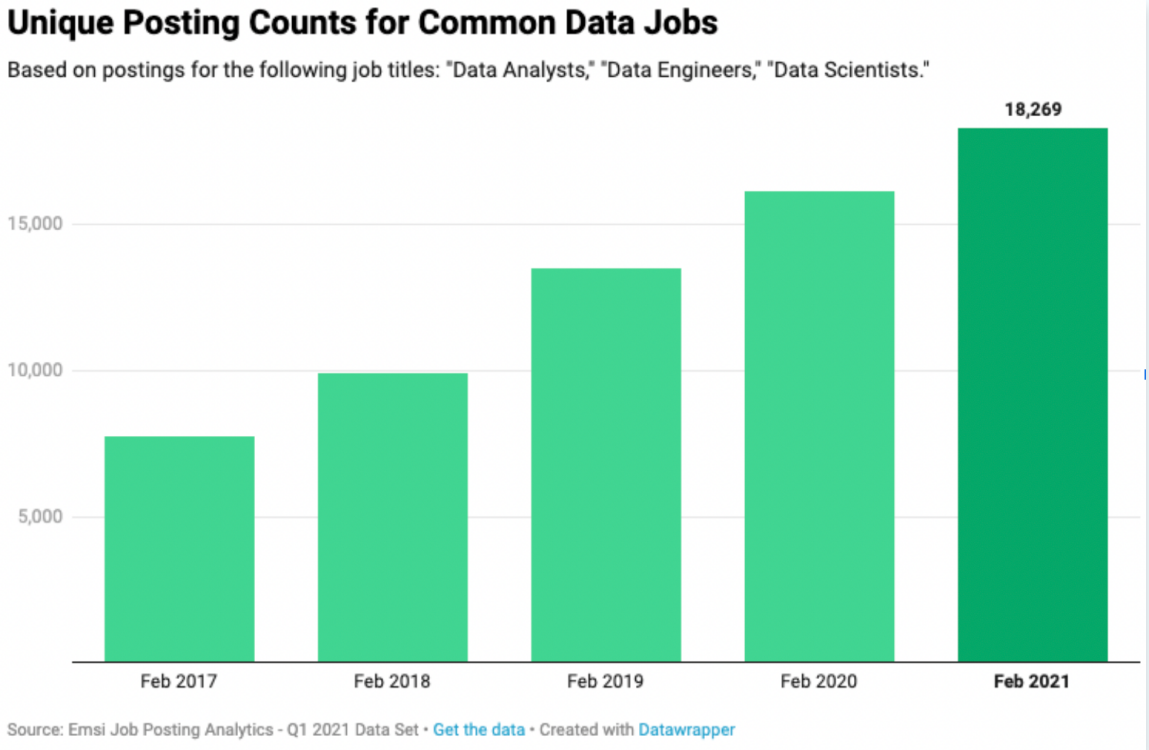


And here are the Google search trends for “Data Science” from that month to this year:

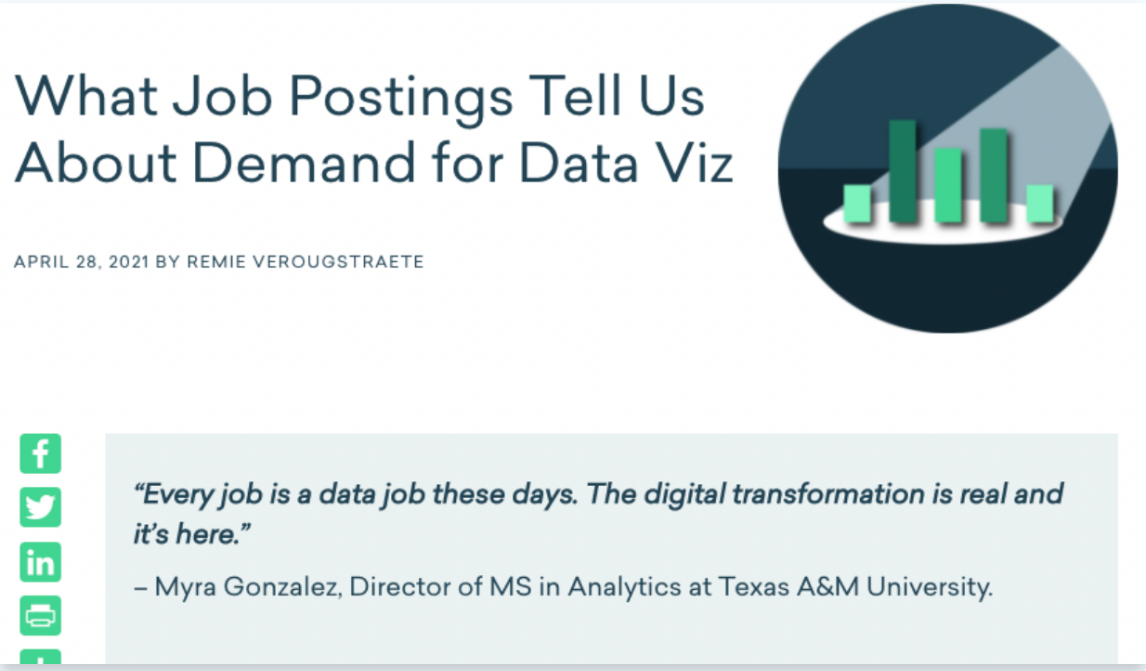


As of July 30, 2021

But let's zoom in on employer demand, not just general interest. In **an article on our blog**, we looked at unique job postings since 2017 for three common "data" job titles: Analyst, Engineer, and Scientist:



The positive trend is clear. In **a related follow up article**, we also looked at job postings that specifically mention "data visualization." That article opens with a quote from Myra Gonzalez, Director of the MS in Analytics program at Texas A&M University that nicely sums up the digital transformation of today's job market:



From that same article, here are the actual posting trends for "data visualization" since 2016:

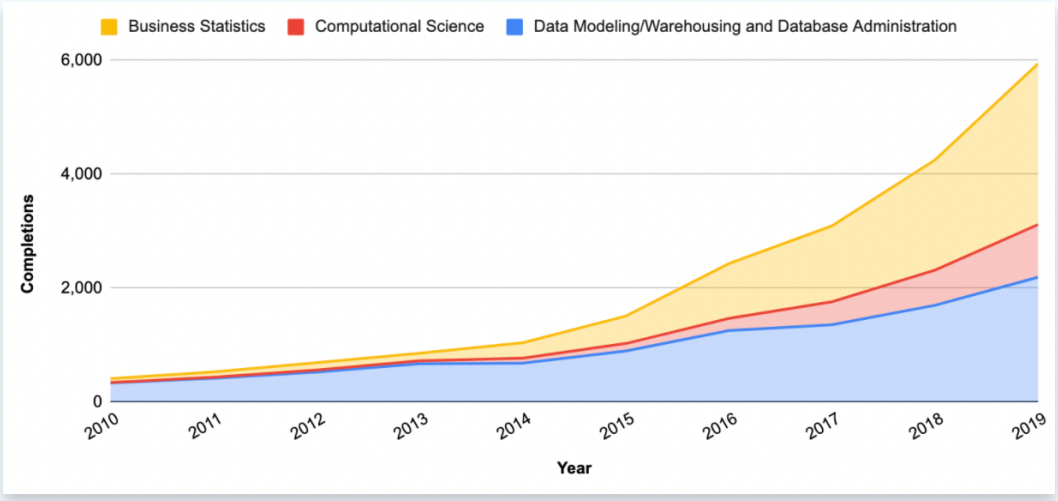
From these articles, quotes, and charts, it's obvious that data skills and data jobs have been on a major growth spurt in our economy since at least 2012. But remember, our thesis is that *student* interest will mirror this *employer* interest. Let's see if that's the case.

Enrollment Trends

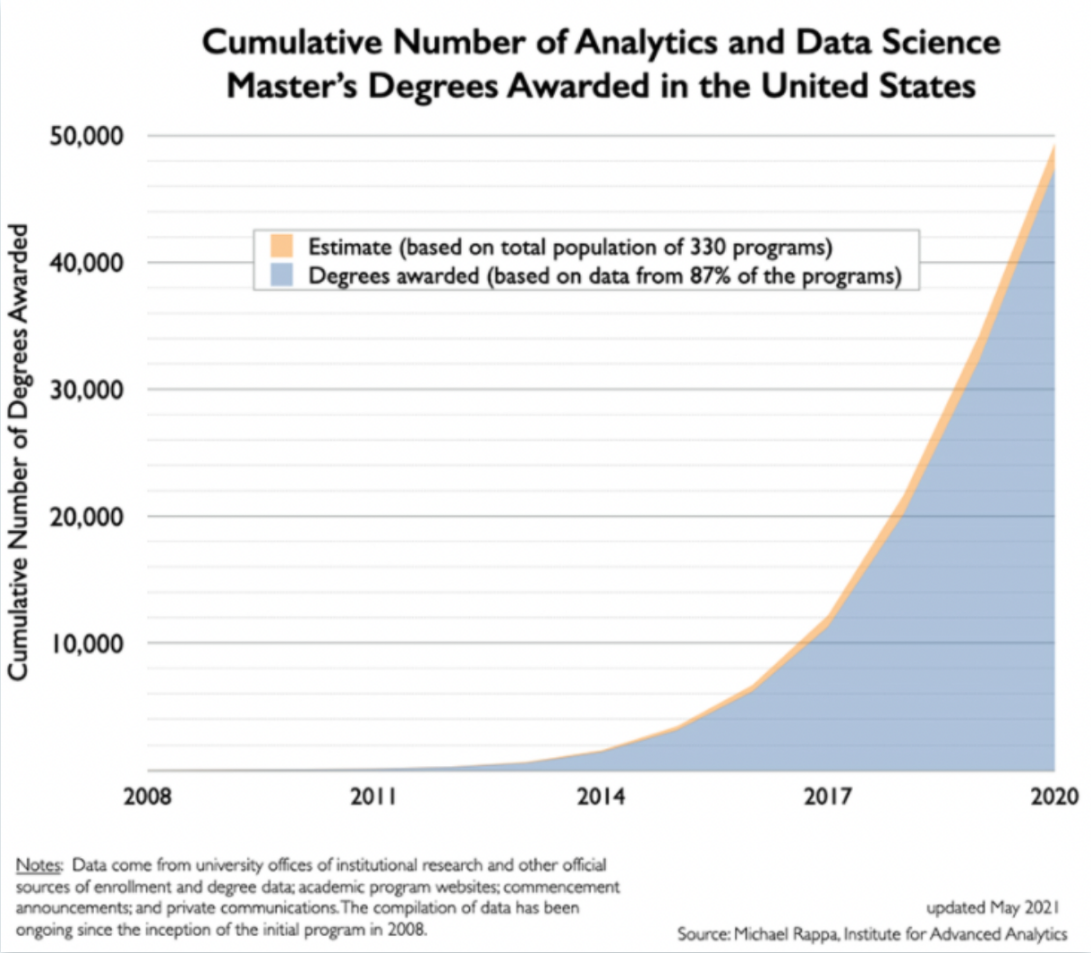
Before 2019, there was no **CIP code for "Data Science."** So, to assess completions in relevant programs, we look to Steve Pierson at the American Statistical Society who **identified three existing CIP codes** that early data science programs were likely to fall under:

- Data Modeling/Warehousing and Database Administration (11.0802)
- Computational Science (30.3001)
- Business Statistics (52.1302)

And here are the recent completion trends for programs with those classifications (all degree levels):



For another perspective, here's a look at the *cumulative* number of Master's degrees awarded in Data Science and Analytics, based on **data compiled by the Institution for Advanced Analytics**:



Takeaways

From what we've seen, it appears that the dramatic growth of data science-related completions tracks closely with the trends for data science-related job titles and skills. Now, which of the following offers a more plausible explanation for this phenomenon?

A) It's a coincidence. Students simply started waking up in 2013 with a strange, unexplained curiosity about the world of data and statistics.

or

B) There is a connection between articles like the one from HBR in 2012, the rising awareness of the exciting, lucrative, high-growth jobs available to individuals with data science skills, and the subsequent rise in completions for related programs.

Our money is on option B.

What's the takeaway from all this? It would appear that labor market demand is upstream while prospective student demand is downstream. Or, to put it another way:

When it comes to aligning academic programs with "the market," employer demand is a **leading indicator** while prospective student demand is a **lagging indicator**.

This reality has two major implications for colleges and universities:

1) Aligning academic programs to market demand is foundational for effective enrollment management and marketing.

As we've seen, learners prioritize career outcomes (holistically understood) when making decisions about whether and how to pursue higher education. This means that a market-aligned program is a high value program. But you can't market what you don't have. That's why aligning programs with in-demand career outcomes is a prerequisite for attracting and enrolling career-motivated learners.

On the flip side of the same coin, high value programs are, quite simply, easier to market. Which leads us to takeaway number two.

2) Demonstrating market alignment is a powerful marketing tool

Once you've done the hard work of ensuring that programs, courses, and curricula are aligned with desirable careers in your region, don't keep that data to yourself. Knowing that learners care about careers, you can leverage that data to attract them to your institution. There's at least two ways to do this, which we'll dive into later:

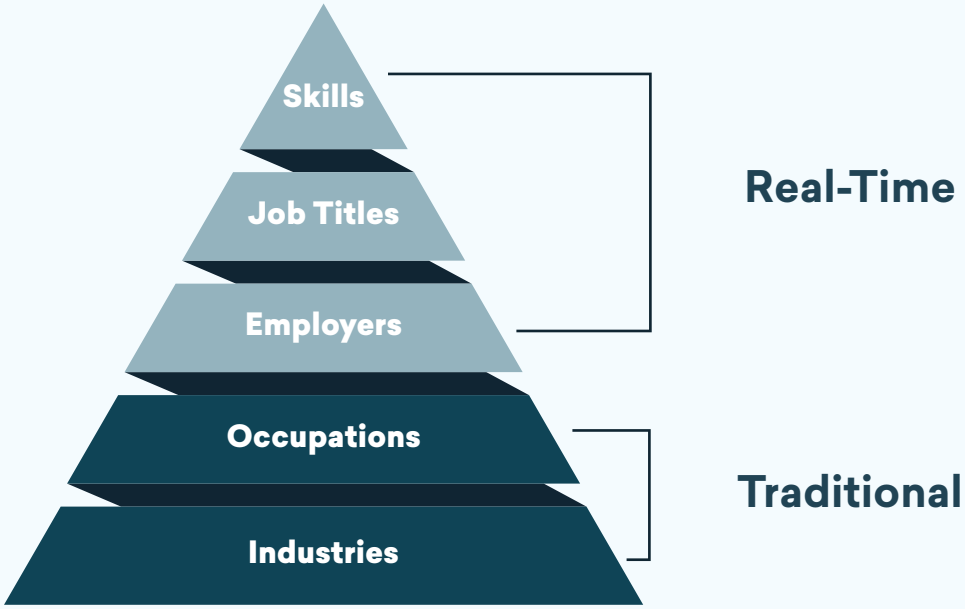
- **Help learners explore careers and clarify their goals**
  - Don't just leave prospective learners to navigate the complex web of career and learning options on their own. Proactively engage them with relevant data that helps them expand their horizons and find work that excites and motivates them to learn.

- **Demonstrate how your offerings align with their career goals**
  - The second crucial component is showing how your programs connect to those career goals. Once they know what they want to do, you need to show them how to get there. This can be done by embedding career data on program pages, and by providing "career-first" academic exploration tools. More on this later.

Getting It Done

Understanding the importance of market aligned programs is one thing. Achieving that alignment is something else. But don't worry. To help you get started, we'll do a crash course in labor market research, including an overview of the different levels of labor market data. We'll see how each level builds on the previous one to help you identify growth areas in your regional economy, so you can optimize academic offerings that prepare students for those opportunities.

Let's start with an overview of the levels. You can think of it like a pyramid:



It starts with **industries** on the bottom as a foundational category. Industry analysis tends to be the broadest way of looking at the economy, viewing data organized by NAICS codes from the North American Industry Classification System.

And then, you can get a little more narrow by looking at the **occupations** within those industries. Those are organized by Standard Occupation Classification codes (SOC codes).

The next layer up is **employers** who are the specific companies that are hiring for those occupations.

Getting more precise, we can look at the specific **job titles** that those employers are hiring for.

And then, on the very top, we have the precise **skills** that employers are asking for in their postings for specific roles.

Traditional LMI vs. Real-Time LMI

The two layers at the bottom, industries and occupations, you can think of as **traditional labor market information**. These often come from government sources, which is both a strength and a weakness. In terms of strength, they tend to be well-organized and, when the classification systems are updated, the entity updating it will provide resources to help you track what changed and how. This makes it especially good for historical analysis, looking at trends over extended periods of time.

But much of this government-produced data is only updated annually or quarterly. And in today's fast-paced economy...that's an eternity.

That's why it's also important to be looking at things like employers and job titles, which are not only more detailed and precise, but also available in **real time**.

Employers are posting on the internet now more than ever, and they're updating these postings frequently. When they have an opening, they create a posting, and when it's filled, they close it. With today's technology, we can track these changes in near real-time. And so, job postings provide us with more detailed information about employers and the roles they're trying to fill *and* how those needs are changing daily, weekly, and monthly as well as over long time horizons.

Job postings also provide us with incredibly valuable **skills data**, which is the most granular way of understanding the labor market. We'll talk about some **unique advantages of skills data** a little later.

Before we move on, it's good to note that student surveys and completions data (the kind that comes from the **Integrated Postsecondary Education System**) are also important, useful tools for understanding the market that you're trying to align to. That said, they are not the focus of this paper, which focuses more on **labor market** research as a forward-looking tool for creating and marketing programs.

A note on the importance of regionality

In general, when doing labor market alignment, you want to take a regional approach over a national approach. The United States is a big place. And economies vary from region to region, whether that's state to state or even county to county in some of the larger states.

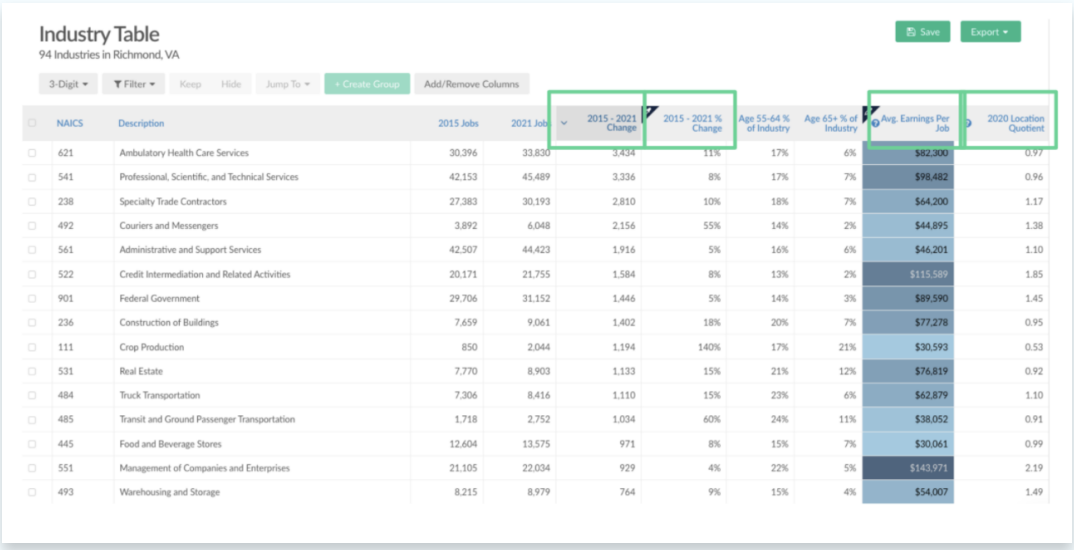
So yes, it's fun and interesting to see Newsweek headlines about top 10 jobs or top 10 hot careers in the U.S. And it's good to pay attention to those trends. Certainly, prospective students are likely to notice them. But be aware that those headlines can be skewed by major population centers like New York City and Los Angeles which might have very different economies from the one in your area.

The one exception, of course, is if the nation is your region. For example, if you're an entirely online institution, or your brand is such that you typically draw students from all over the country. In that case, by all means, prioritize national trends. But for the vast majority of institutions, regional focus is what's most relevant.

Program Research Examples

Industries

So, let's dive into industries. This is an industry table from our **Analyst** platform for Richmond, Virginia. And these are some of the key metrics that you'd want to look at when you're analyzing industries.



Industry Table

94 Industries in Richmond, VA

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NAICS	Description	2015 Jobs	2021 Jobs	2015 - 2021 Change	2015 - 2021 % Change	Age 55-64 % of Industry	Age 65+ % of Industry	Avg. Earnings Per Job	2020 Location Quotient
621	Ambulatory Health Care Services	30,396	33,830	3,434	11%	17%	6%	$82,300	0.97
541	Professional, Scientific, and Technical Services	42,153	45,489	3,336	8%	17%	7%	$98,482	0.96
238	Specialty Trade Contractors	27,383	30,193	2,810	10%	18%	7%	$64,200	1.17
492	Couriers and Messengers	3,892	6,048	2,156	55%	14%	2%	$44,895	1.38
561	Administrative and Support Services	42,507	44,423	1,916	5%	16%	6%	$46,201	1.10
522	Credit Intermediation and Related Activities	20,171	21,755	1,584	8%	13%	2%	$115,589	1.85
901	Federal Government	29,706	31,152	1,446	5%	14%	3%	$89,590	1.45
236	Construction of Buildings	7,659	9,061	1,402	18%	20%	7%	$77,278	0.95
111	Crop Production	850	2,044	1,194	140%	17%	21%	$30,593	0.53
531	Real Estate	7,770	8,903	1,133	15%	21%	12%	$76,819	0.92
484	Truck Transportation	7,306	8,416	1,110	15%	23%	6%	$62,879	1.10
485	Transit and Ground Passenger Transportation	1,718	2,752	1,034	60%	24%	11%	$38,052	0.91
445	Food and Beverage Stores	12,604	13,575	971	8%	15%	7%	$30,061	0.99
551	Management of Companies and Enterprises	21,105	22,034	929	4%	22%	5%	$143,971	2.19
493	Warehousing and Storage	8,215	8,979	764	9%	15%	4%	$54,007	1.49

First, we're looking at job change from 2015 to 2021. This helps answer foundational questions like, "what industries in my region are growing? Where are new jobs coming into the region and what kind of business activities are they associated with?"

In addition to the job change number itself, we'll also want to look at percent change. In fact, it's ideal to view both side-by-side so that they can each shed light on the significance of the other.

For example, crop production shows 140% growth over our time frame (past six years). That can be really eye-catching. But it's important to then look over and see, in absolute terms, how many jobs that industry had in 2015 and how many it has now in 2021. When we do, we see that the higher percentage change is partly explained by the fact that this industry is starting from a low base of only 850 jobs in the entire region back in 2015. For reference, compare that to the 30,000 jobs in ambulatory healthcare services in that same year.

On the flip side, a relatively small percentage change could actually signal meaningful opportunities for job-seekers, if it's an industry that was already a significant part of your regional economy to start with.

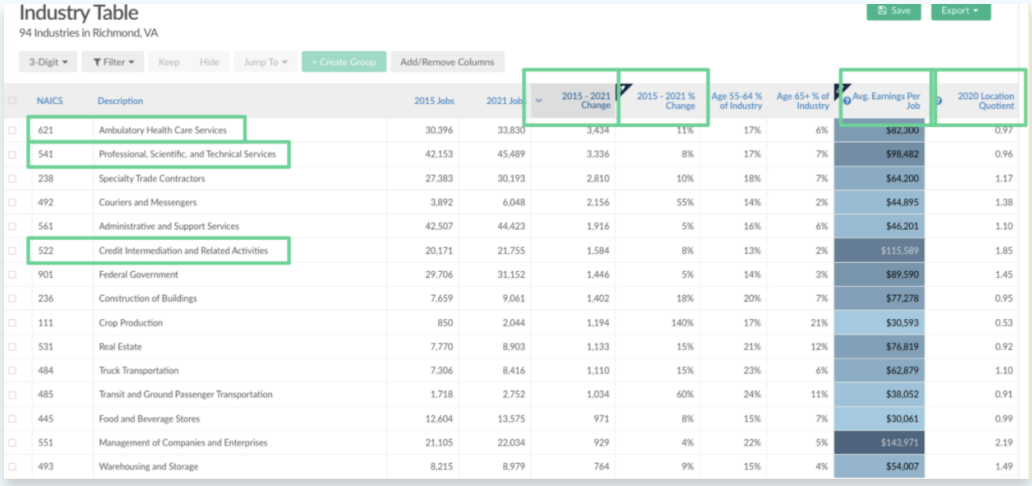
Think of it this way: Percentage growth gives us a better sense for the *velocity* of change (how quickly an industry is growing in relation to its own past performance) while the absolute change gives us a better sense of the *magnitude* or *significance* of that change (in absolute terms, did this growth actually create a significant number of jobs that are worth paying attention to?). Both are useful, and they're best considered together.

We should also look at average earnings per job. As we said earlier, money is not the only thing, but it is very much a thing. So it's important to answer the question: "are these industries creating the kinds of jobs that pay at least a living wage?" And of course, you'll want to take note of any that pay an exceptionally high wage for your area as well.

And then we have location quotient. **Location quotient (LQ)** is an especially interesting metric because it helps answer the question: "what are the *unique* strengths of my region?"

Basically, LQ is a measure of how concentrated an industry is in your region versus the national average. So, if the LQ value is greater than one, then it's more concentrated in your region when compared to the nation's average. If it's less than one, then it's less concentrated than the national average.

So, based on our key metrics, these are some of the industries that stand out: ambulatory healthcare, professional, scientific and technical services, and credit intermediation.



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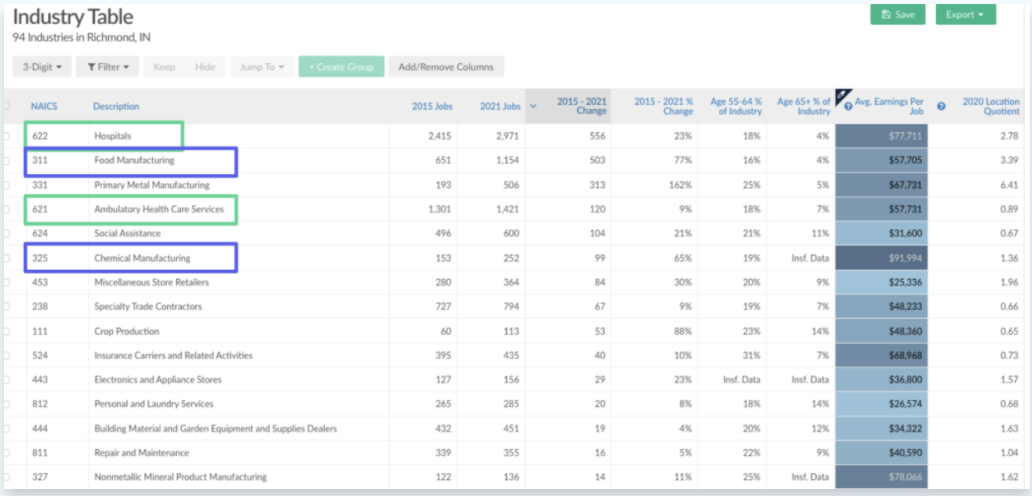
Credit intermediation stands out in particular because it's showing strong job growth (even though it's not at the very top of the chart) and exceptionally high earnings compared to other industries. It also has a 1.85 location quotient, which tells us that this is a unique strength for the city of Richmond. So, those are some industries that might be worth further investigation.

Regionality Matters: Exhibit A

To see why a regional approach matters, let's briefly look at the same kind of industry table, but for Richmond, *Indiana*.



Industry Table

94 Industries in Richmond, IN

Save Export

3-Digit Filter Keep Hide Jump To + Create Group Add/Remove Columns

NAICS	Description	2015 Jobs	2021 Jobs	2015 - 2021 Change	2015 - 2021 % Change	Age 55-64 % of Industry	Age 65+ % of Industry	Avg. Earnings Per Job	2020 Location Quotient
622	Hospitals	2,415	2,971	556	23%	18%	4%	$77,711	2.78
311	Food Manufacturing	651	1,154	503	77%	16%	4%	$57,705	3.39
331	Primary Metal Manufacturing	193	506	313	162%	25%	5%	$67,731	6.41
621	Ambulatory Health Care Services	1,301	1,421	120	9%	18%	7%	$57,731	0.89
624	Social Assistance	496	600	104	21%	21%	11%	$31,600	0.67
325	Chemical Manufacturing	153	252	99	65%	19%	Insf. Data	$91,994	1.36
453	Miscellaneous Store Retailers	280	364	84	30%	20%	9%	$25,336	1.96
238	Specialty Trade Contractors	727	794	67	9%	19%	7%	$48,233	0.66
111	Crop Production	60	113	53	88%	23%	14%	$48,360	0.65
524	Insurance Carriers and Related Activities	395	435	40	10%	31%	7%	$68,968	0.73
443	Electronics and Appliance Stores	127	156	29	23%	Insf. Data	Insf. Data	$36,800	1.57
812	Personal and Laundry Services	265	285	20	8%	18%	14%	$26,574	0.68
444	Building Material and Garden Equipment and Supplies Dealers	432	451	19	4%	20%	12%	$34,322	1.63
811	Repair and Maintenance	339	355	16	5%	22%	9%	$40,590	1.04
327	Nonmetallic Mineral Product Manufacturing	122	136	14	11%	25%	Insf. Data	$78,066	1.62

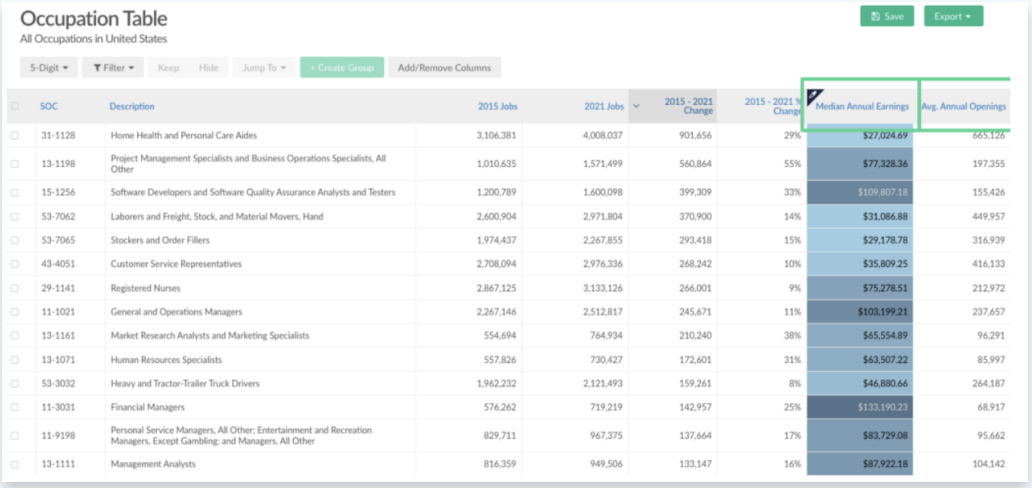
We see a couple industries that are somewhat similar to what we saw in the other Richmond: hospitals and ambulatory health care services. But then, we see others that

were nowhere to be seen in the previous industry table: food manufacturing and chemical manufacturing.

This just illustrates that there's going to be unique characteristics in your region, which is why it's important to zoom in and examine the labor market at that level and through that lens.

Occupations

Now, we dig! As we dig *down* in detail, we're working our way *up* through the program research pyramid. So, the next most detailed category of labor market information is occupations. And we can approach occupations the same way we did with industries, by looking at a table that highlights key metrics:



Occupation Table

All Occupations in United States

Save | Export

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SOC	Description	2015 Jobs	2021 Jobs	2015 - 2021 Change	2015 - 2021 % Change	Median Annual Earnings	Avg. Annual Openings
31-1128	Home Health and Personal Care Aides	3,106,381	4,008,037	901,656	29%	$27,024.69	665,126
13-1198	Project Management Specialists and Business Operations Specialists, All Other	1,010,635	1,571,499	560,864	55%	$77,328.36	197,355
15-1256	Software Developers and Software Quality Assurance Analysts and Testers	1,200,789	1,600,098	399,309	33%	$109,807.18	155,426
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	2,600,904	2,971,804	370,900	14%	$31,086.88	449,957
53-7065	Stockers and Order Fillers	1,974,437	2,267,855	293,418	15%	$29,178.78	316,939
43-4051	Customer Service Representatives	2,708,094	2,976,336	268,242	10%	$35,809.25	416,133
29-1141	Registered Nurses	2,867,125	3,133,126	266,001	9%	$75,278.51	212,972
11-1021	General and Operations Managers	2,267,146	2,512,817	245,671	11%	$103,199.21	237,657
13-1161	Market Research Analysts and Marketing Specialists	554,694	764,934	210,240	38%	$65,554.89	96,291
13-1071	Human Resources Specialists	557,826	730,427	172,601	31%	$63,507.22	85,997
53-3032	Heavy and Tractor-Trailer Truck Drivers	1,962,232	2,121,493	159,261	8%	$46,880.66	264,187
11-3031	Financial Managers	576,262	719,219	142,957	25%	$133,190.23	68,917
11-9198	Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other	829,711	967,375	137,664	17%	$83,729.08	95,662
13-1111	Management Analysts	816,359	949,506	133,147	16%	$87,922.18	104,142

As with the industry table, we've included job change here because it's a key, fundamental metric for identifying economic growth. But notice that we're now looking at ***median*** annual earnings for each occupation instead of the average per job that we used in the industry table. Median wage is useful in that it is more robust to outliers. In other words, it's less likely to be skewed by unusually high or low figures.

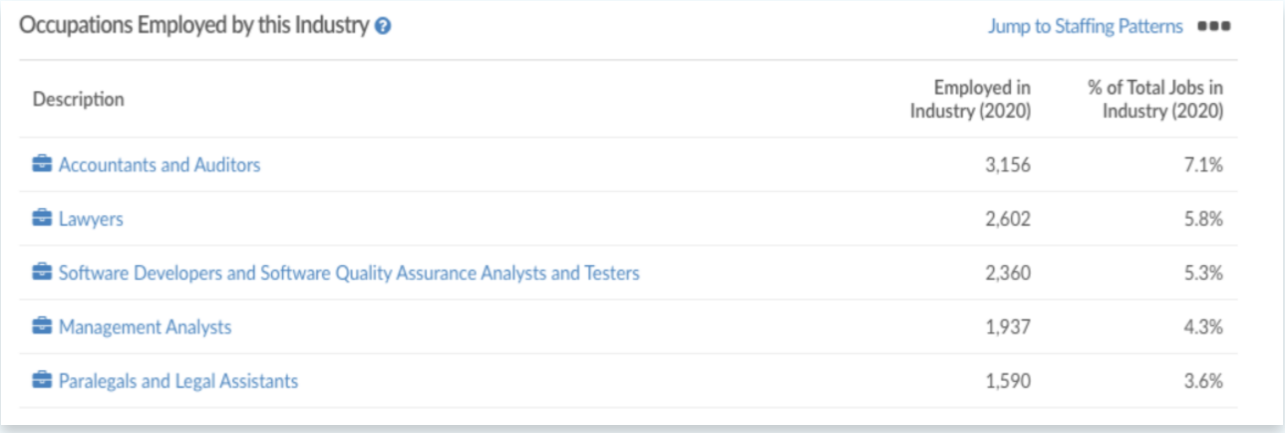
We've also added a column to show average annual openings so we can determine, over this time frame of the past six years, about how many openings there have been for each occupation, each year. This is a good way to get a sense for just how much opportunity there is for graduates. In **Analyst**, job openings capture **a combination of job growth, plus replacement jobs**, which includes people transitioning out of one occupation into another one, therefore creating a vacancy in the occupation they left. For more detail, see the **Knowledge Base article** on how this metric is computed.

These are, of course, not the *only* data points worth considering. But they do provide basic indicators of occupational health that should guide and inform program decisions.

Occupations Revisited

The other way to approach occupation analysis is to drill down on an industry of interest. So, if we jump back to the Richmond, Virginia industry table, we see that Professional, Scientific and Technical services was a significant and growing industry in our region.

Rather than starting over from scratch with an occupation table, we can use this "industry of interest" as a guide while we work our way up the pyramid. To do that, we can decide to restrict ourselves to looking only at occupations in that industry. And this is what we see:



Occupations Employed by this Industry

Jump to Staffing Patterns

Description	Employed in Industry (2020)	% of Total Jobs in Industry (2020)
Accountants and Auditors	3,156	7.1%
Lawyers	2,602	5.8%
Software Developers and Software Quality Assurance Analysts and Testers	2,360	5.3%
Management Analysts	1,937	4.3%
Paralegals and Legal Assistants	1,590	3.6%

So, now we know the key occupations within this industry, within this region. And we can tell the actual percentage of total industry jobs comprised by each occupation.

For example, we see that Accountants and Auditors make up the biggest part of this industry in Richmond. Knowing this, we can then decide to further investigate employer demand for these specific roles. To do so, we'll keep moving up the pyramid.

Employers

Now, we're moving into that real-time labor market information which allows us to see the top employers that are posting jobs related to this occupation. In our example city of Richmond, Virginia, that includes Capital One, Ernst & Young, State of Virginia, (don't forget, the public sector often provides significant employment opportunities for graduates!), and on down the list.

Already, we can start to see how this would provide valuable insight for employer engagement. We can start asking questions like, "Do we have internship or co-op programs with any of these companies? Does anyone on our faculty have a relationship with leaders at these businesses? Could we bring representatives from these employers on campus for seminars or job fairs?"

So, this level of insight, both in terms of its detail and how recent it can be (remember that these are based on postings that change and update every day) can be quite valuable. But we can actually get *more* detailed. Let's move up another layer on the pyramid.

Job Titles

Now, we're starting to see the specific roles those employers are posting for. Unlike occupation codes, these are not standardized. As a result, this is going to give us a better reflection of the actual language being used by employers themselves.

Top Posted Job Titles

Job Title	Total/Unique (Jun 2020 - May 2021)	Posting Intensity	Median Posting Duration
Staff Accountants	522 / 83	6 : 1	34 days
Audit Senior	376 / 75	5 : 1	43 days
Accountants	251 / 67	4 : 1	30 days
Principal Associates	204 / 49	4 : 1	11 days
Internal Auditors	228 / 44	5 : 1	33 days
Controllers	138 / 43	3 : 1	27 days
Directors of Internal Audit	132 / 32	4 : 1	24 days
Tax Senior	155 / 32	5 : 1	40 days
IT Controllers	154 / 29	5 : 1	34 days
Tax Professionals	172 / 28	6 : 1	32 days

We can start to see a more nuanced picture of employer demand for "accountants." We see demand for "Internal Auditors" and "Directors of Internal Audit." Based on this insight, we can ask: "Does our accounting program provide a concentration in audit? Should we? Do we at least have a course that covers it thoroughly?"

Rounding out the top 10 in-demand titles, we also see "IT controllers," which is interesting. Is there perhaps an opportunity for some collaboration between our business school and our IT or computer science departments to make sure that the students are prepared for these kinds of blended roles?

But we can get even *more* precise. Let's keep digging.

Skills

Finally, we arrive at skills. At Emsi Burning Glass, we **define a skill** as anything that "defines or describes someone's knowledge and experience." Below, we see the top in-demand skills for accountants and auditors in Richmond, VA. First, we'll focus on the "hard" or specialized skills before considering the broader, "common" skills as well:

Top Hard Skills

Skill	Frequency in Postings	Postings with Skill / Total Postings (Jun 2020 - May 2021)
Accounting	77%	1,550 / 2,023
Auditing	61%	1,227 / 2,023
Financial Statements	35%	704 / 2,023
Internal Controls	22%	452 / 2,023
Generally Accepted Accounting Principles	22%	450 / 2,023
General Ledger	15%	295 / 2,023
Tax Return	14%	283 / 2,023
Internal Auditing	13%	267 / 2,023
Risk Management	11%	230 / 2,023
Data Analysis	11%	220 / 2,023

Unsurprisingly, accounting is going to be a top skill. But then, further down the list, we see skills like "**internal controls**," and "**internal auditing**" (recall that auditors and director of internal auditors were some of our top job titles).

In addition, we see "**risk management**" and "**data analysis**." Findings like these can raise important questions: "Do we have an opportunity for our accounting students to take an elective in data analytics? Would they be better positioned for today's job market if we created more overlap in our programs so they can develop those blended skill sets?"

Now, let's focus on the "common" or soft skills:

Top Common Skills

Skill	Frequency in Postings	Postings with Skill / Total Postings (Jun 2020 - May 2021)
Communications	43%	876 / 2,023
Management	38%	769 / 2,023
Research	25%	505 / 2,023
Operations	25%	498 / 2,023
Microsoft Excel	21%	431 / 2,023
Leadership	21%	417 / 2,023
Written Communication	20%	412 / 2,023
Problem Solving	20%	396 / 2,023
Planning	19%	385 / 2,023
Detail Oriented	17%	349 / 2,023

We see "**communications**" at the very top and then "**written communication**" further down the list. So, if there are any accounting students who are wondering (internally, or out loud), "Why do I have to take this writing class? I just want to do accounting. Isn't that all math and spreadsheets?" your faculty and advisors now have the answer: "No, not according to the employers that you want to work for." The data tells us that these employers also want their accounting hires to be capable of articulating their ideas in writing. Whether it's writing reports, memos, or emails, clear communication is clearly a priority.

So, with a list like this, we're then able to ask, "Are we teaching these skills? If we are, are we *talking* about it? In other words, are we listing these skills in the syllabus? Are we listing them in the course description so that students (and prospective students) can see that we are teaching these skills? And are we showing students that the reason we're teaching these skills is because there's employer demand for them?"

Answering these questions in the affirmative is a crucial way to show prospective students that you are being intentional about aligning curriculum with their career goals.

It's worth noting that, along with skills, we can also see related certifications that are mentioned in these postings:

Qualification	Postings with Qualification
Certified Public Accountant	526
Certified Internal Auditor	275
Certified Information System Auditor (CISA)	189
Certified Information Systems Security Professional	139
Master Of Business Administration (MBA)	108
Certified Fraud Examiner	47
Certified Information Security Manager	42
Chartered Financial Analyst	33
Master of Laws	29

This helps inform questions like, "Do our courses prepare students for key industry certifications? Is there some way we could blend this into our curriculum so that when students graduate, they also leave with an in-demand certification?" This kind of integration is another way to add value to programs based on labor market insight.

Here's a quick recap of what we've covered so far:

Putting Data to Work (Aligning Programs)

- **Industries/Occupations**
  - High level view of regional strengths and opportunities. Where to focus further investigation

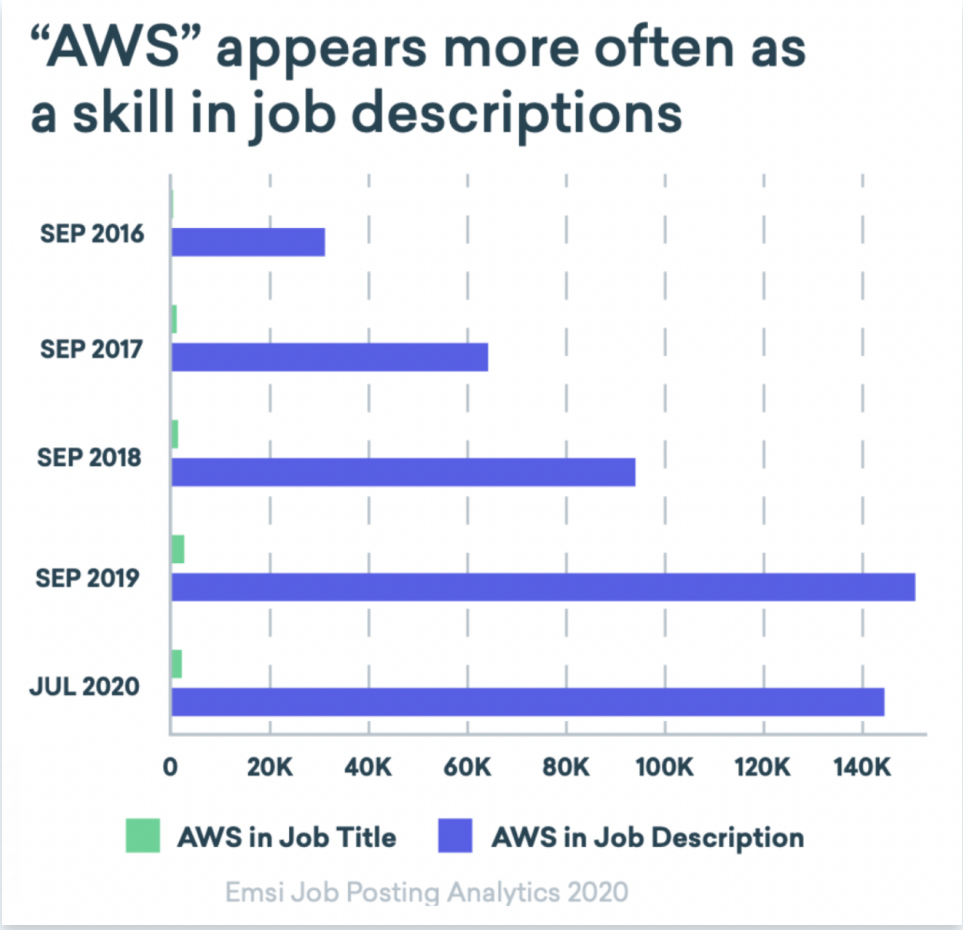
- **Employers & Job Titles**
  - Much more detailed (and real time!) look at the roles learners will be seeking to fill when they graduate.
  - Use to guide employer engagement! (Nothing beats real relationships)

- **Skills**
  - Actionable insight to inform curriculum improvement
  - Can enrich courses you already offer!
  - Can help you spot emerging trends

Using Skills to Spot Trends

As we mentioned earlier, skills data (the very top of the program research pyramid) offers some unique advantages that make it an increasingly essential layer to include in program research. One of these advantages is its ability to detect emerging trends, in real time.

As an illustration of this, consider growing demand for proficiency in **Amazon Web Services (AWS)**. The short green bars in the table below represent the prevalence of AWS in job titles. The more noticeable purple bars show the prevalence of AWS *listed as a skill* in job descriptions.



So, if an institution is tracking the labor market, and only paying attention to job titles, they *might* notice subtle, modest growth in roles specializing in AWS. But if they're paying attention to the actual ***skills*** in those postings, then they will certainly notice the major growth in demand for Amazon Web Services, and can then use that awareness to inform curriculum. As we'll discuss in a moment, this information can also be surfaced to prospective students to help *them* understand career opportunities associated with learning this skill.

Part Two: Don't Keep it to Yourself

In part one, we focused on achieving alignment between the academic programs you offer and what the market (both the *leading* labor market and the *lagging* prospective student market) is asking for. In part two, we'll focus on leveraging that alignment to engage prospective learners with compelling evidence of your programs' relevance and value.

As a reminder, this involves two parallel priorities:

1) Help learners explore careers and discover opportunities

- This is especially important for serving disadvantaged communities where individuals may lack exposure to the full spectrum of career opportunities
- This ensures learners of all backgrounds have a clear end-goal before starting their academic journey (which is essential for helping them stay motivated to persist and complete on time)

2) Show how your programs align with career goals

- In part, this is about helping prospective learners navigate the confusing array of possible education-to-employment pathways.
- It also enables you to make your programs stand out in a noisy higher education landscape by demonstrating alignment with real employment needs in your region.

So, those are the priorities. That's what we want to achieve. But the question we're tackling in this section is *how*? To answer that question, let's look at a couple very practical ways you can implement the strategies above.

1) First, you can embed career data directly into program pages. In today's digital-first world, your website is a prospective student's first stop for assessing program value. Embedding relevant career data directly into a program webpage (alongside other essential information like cost and required courses) can help learners see an immediate connection between their investment, in terms of time and money, and their return, in terms of career opportunities and earning potential.

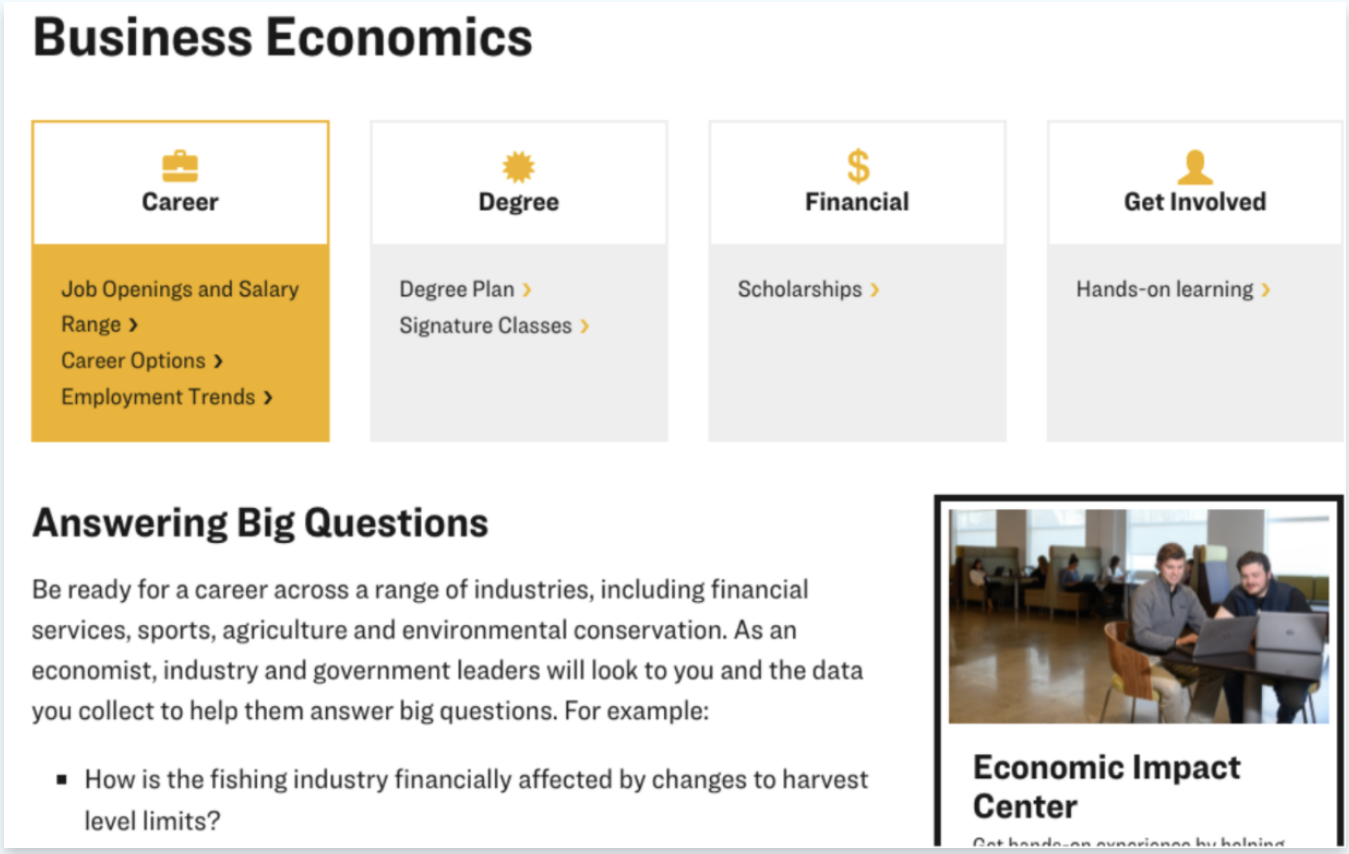
It's also a great place to share **alumni career outcomes data** and anecdotes, if you have them. Few things are more encouraging to a prospective student than knowing that the

program they're considering has a proven track record of helping individuals like them obtain the outcome they're looking for.

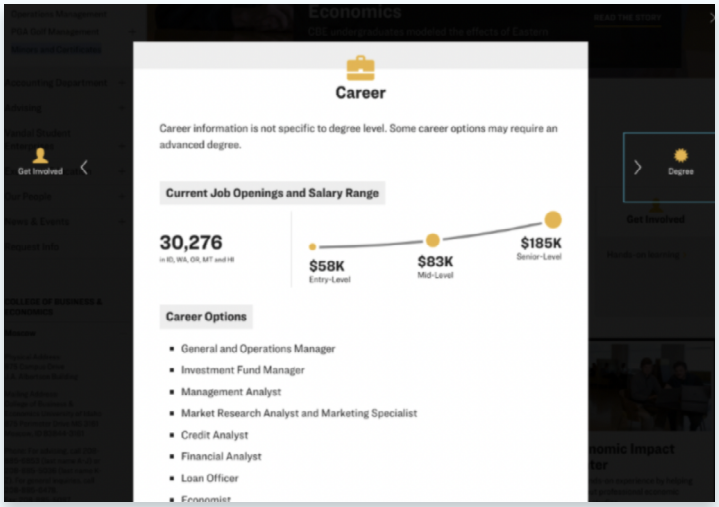
2) Second, provide career-first, academic exploration support. It's well and good to have a site that lets students explore offerings based on subjects that they're interested in. But, knowing that most learners are motivated by desired career outcomes, we can also help them "begin with the end in mind." Let them start by exploring questions like: "What are the careers and jobs that you're interested in? What's your end goal?" Then, help them trace that goal back to the relevant program at your institution and **show how the skills that you teach are aligned with the skills employers are looking for**, as we discussed earlier.

Examples

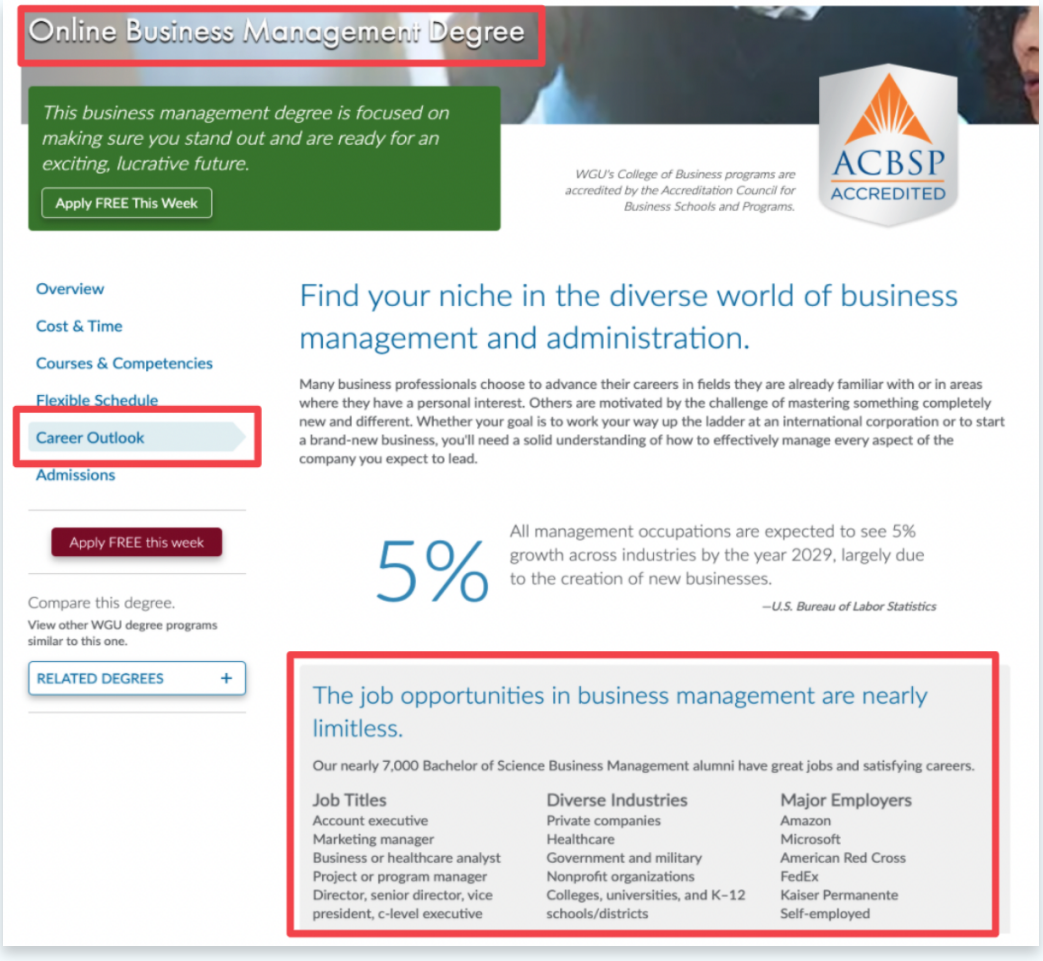
Let's run through some quick, real-world examples. We'll start with the **University of Idaho**. This is their **business economics program page**. We can see they provide degree information, scholarships, and, right there on the same page, related careers.



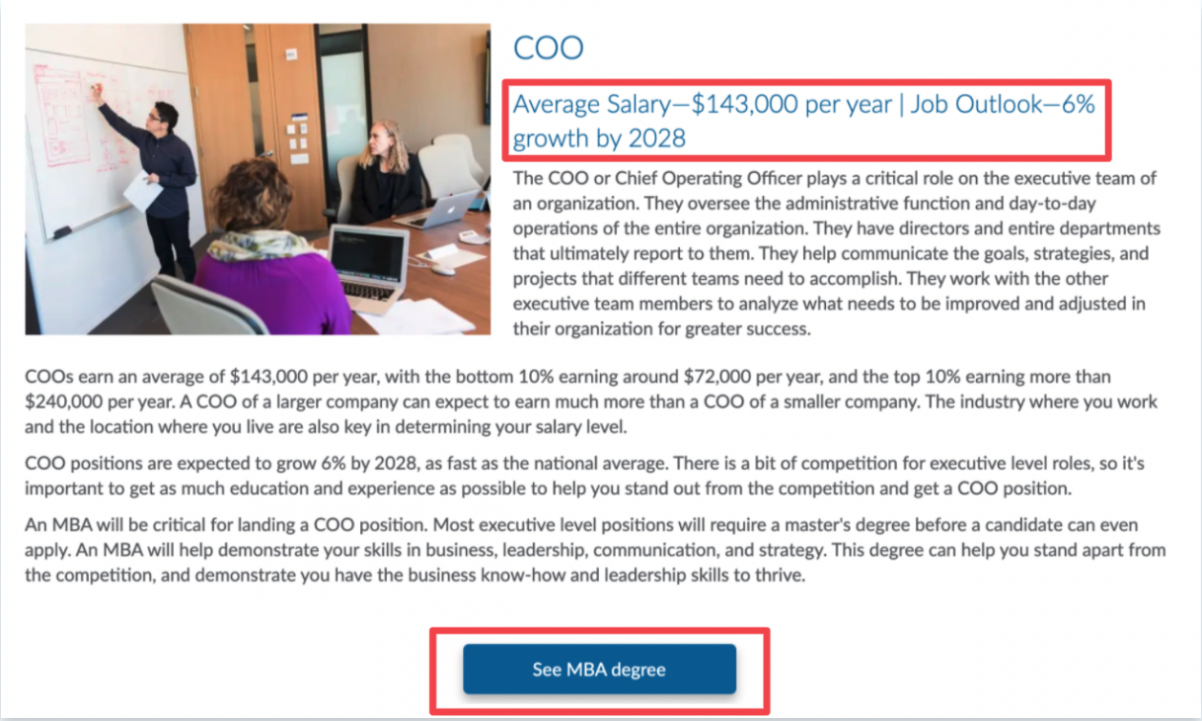
We can click that "Career" card and we'll see this pop up: A window that provides data on job openings, projected salary at different levels of experience, and specific career options. This gives students a concrete idea of how this educational program will translate into real world work when they're done.



Below is another example, this one from **Western Governors University**, a major leader in providing work-relevant education. This is from the **Business Management Degree page**. Notice how they have it laid out. On the left, they've got "Cost & Time," "Courses & Competencies," and then… "Career Outlook." They have a whole section devoted to that data, and it's offered right up front alongside the other basic categories of information about the program. Further down, they highlight actual job titles, industries, and employers that past students have gone into, which creates a compelling vision for prospective learners visiting the page.

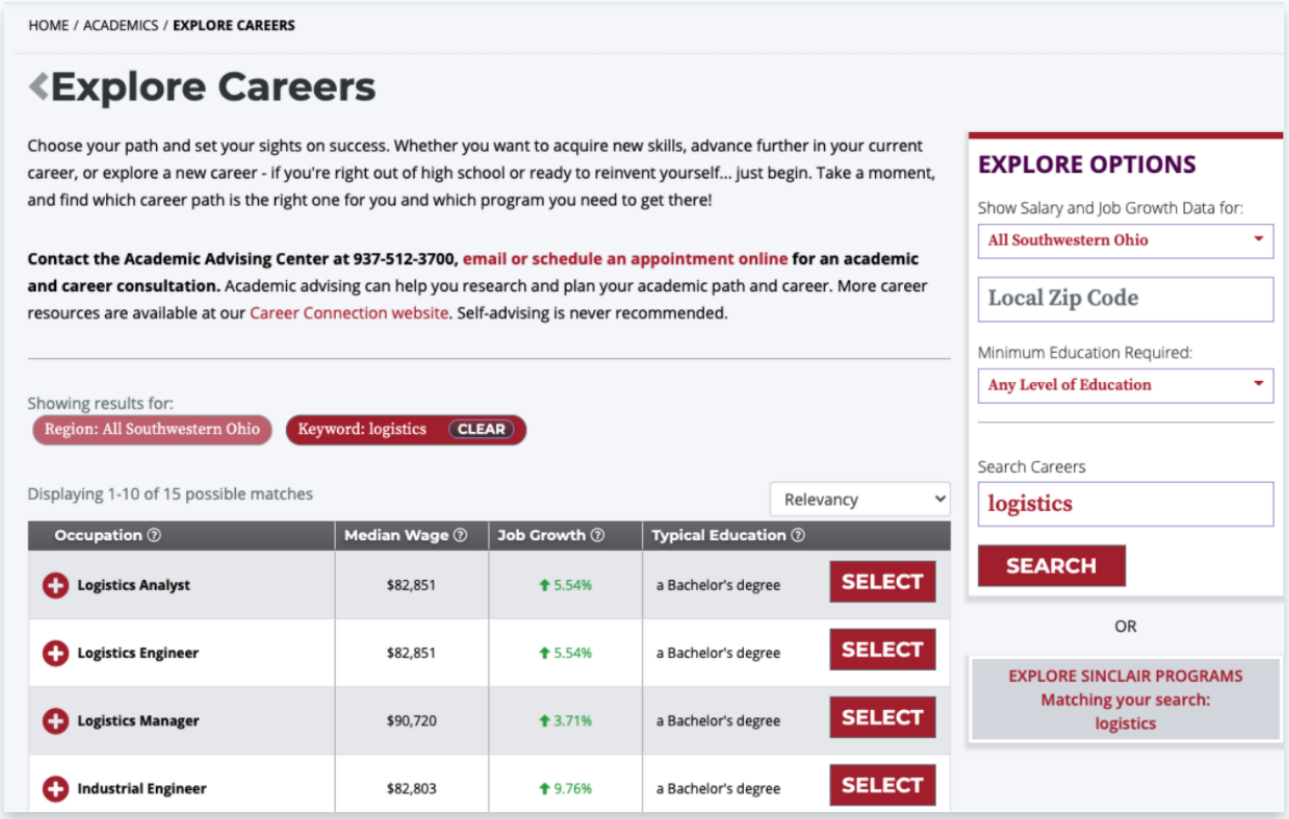


Elsewhere on their site, they also have a careers page that powerfully illustrates the concept of career-first academic exploration. This page lets a visitor envision the next step on their career ladder, including the responsibilities and salary that might involve. And then, once they have a clear vision of their end goal, they can easily go and explore the details of WGU's MBA program.



Now, let's consider some examples at the community college level. The below screenshot is from the **home page for Sinclair Community College** in Ohio. As you can see, they let site visitors start with career options or degree pathways. This allows students to start exploring academic programs in a way that best aligns with their goals and motivations.

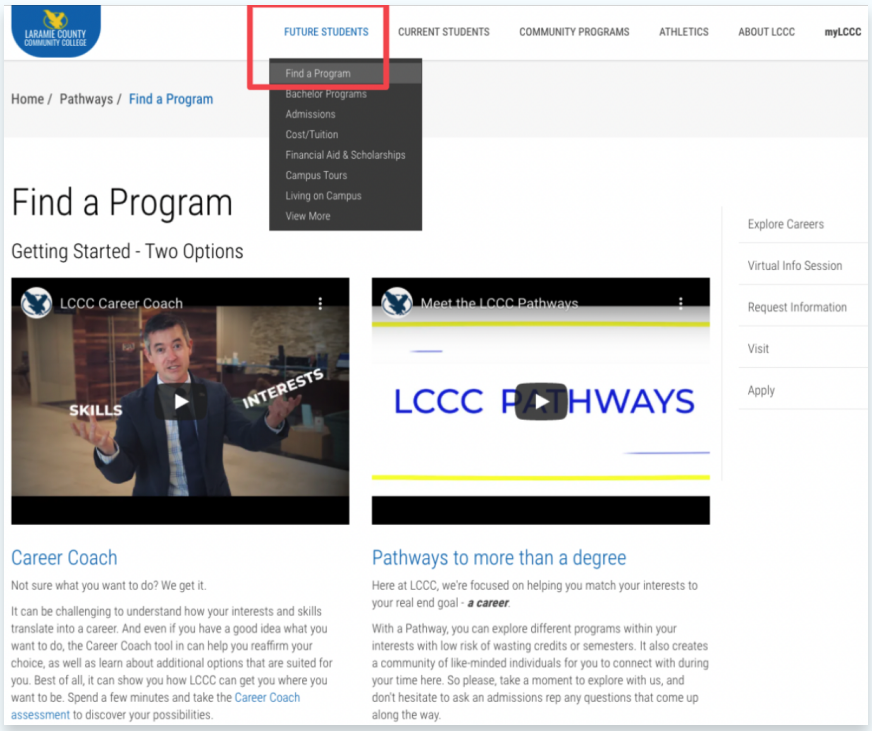
If we select career options, we're talent to a page like the one below. In this example, we've entered "logistics" as a keyword in the search bar and are reviewing related career opportunities in the Southwestern Ohio region.



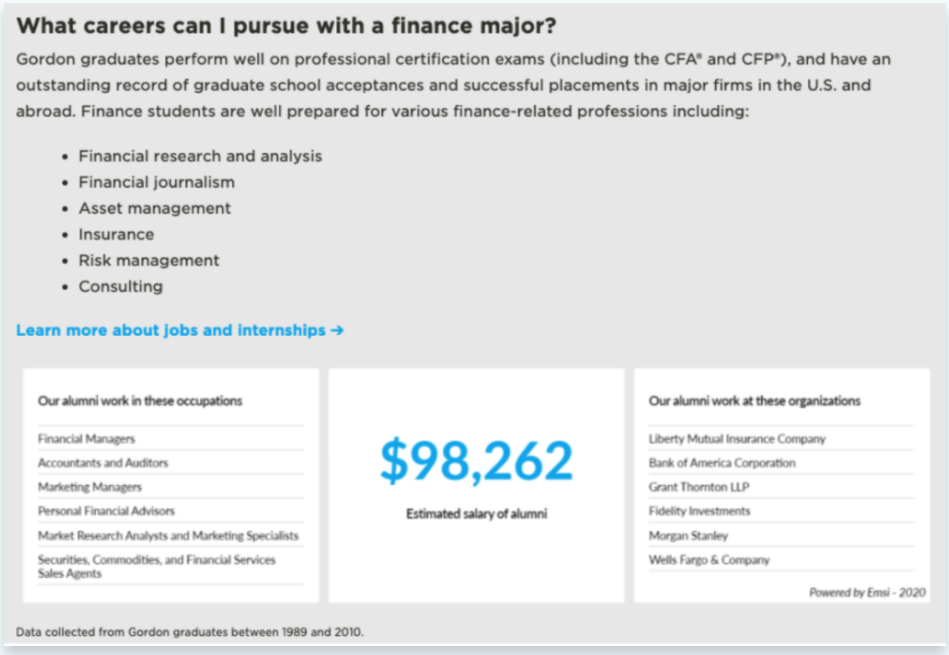
You can see specific occupations in the left-hand column followed by median wages, job growth, and typical level of education required. For any one of these occupations, I can click "select" to discover related programs that align with those career outcomes.

Let's look at another example: **Laramie County Community College** in Cheyenne, WY. As you can see below, their main navigation bar includes a menu item specifically targeted towards future students.

The very first option under that menu is: find a program. When a visitor selects that option they are presented with two pathways: they can use the **Career Coach** platform or browse **LCCC pathways**. Either option empowers prospective learners to explore academic programs in light of how those programs lead to real-world career outcomes.

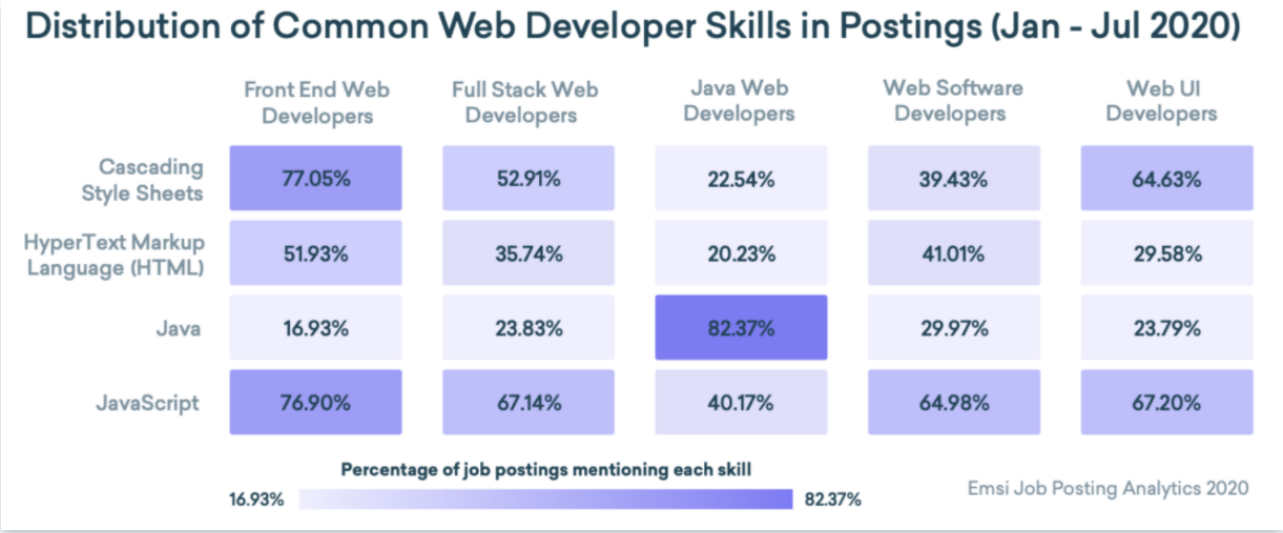


Now let's look at another example of how to use concrete career outcomes data to bolster career connections. The below screenshot is from **Gordon College** in Massachusetts. On their **finance degree page**, they provide key alumni data points: alumni work in these occupations and at these organizations. Part of the strength of this approach is that, rather than relying on one or two anecdotes, this provides aggregate outcomes data based on students who have graduated from 1989 to 2010. That's a large sample size that provides a helpful overview for incoming students of the success that is (demonstrably) possible with a degree from Gordon.



Skill-specific advising

One last note: When it comes to leveraging market research data to engage prospective students, think about the possibility of skill-specific advising. For example, consider the table below. Across the top, we have very specific, very granular job titles: Front End, Full stack, and Java Web Developers. So, they're all "web developers," but they're very specific types because this is what the real labor market is like. It's this nuanced. And on the left, we have specific skills and programming languages.



Now first of all, this kind of insight clearly has an important role to play in program and curriculum development. We can answer the question, "Are we teaching the right skills?" For example, we can see that JavaScript (bottom row) is pretty prevalent across the board. So, perhaps that skill should be foundational to our curriculum.

But then, we can leverage this same data for prospective student engagement. For example, imagine a student coming into an advisor's office and saying, "I'm interested in coding, I'm interested in software, but I don't really know anybody who does this professionally. And I'm not sure what *exactly* I want to do, or what I should be studying. Do I need to master HTML and CSS? Those languages seem kind of boring to me. Is there another path I can follow?"

An advisor equipped with skill-level labor market insight could provide an in-depth answer: "Well, if you want to be a Java web developer, you should be *familiar* with CSS and HTML. But no, you may not need to master it. But you should definitely master Java." Advisors can start to provide that level of specific guidance for students, helping them get from where they are to where they want to be, as efficiently as possible, by studying the things they need to study and not wasting time.

And below, we can see another example of creating this "skill-based roadmap" for learners. In this example, we have **common data jobs on the Y-axis and common data skills** across the top:

Title Name	Skill Name: Algorithms	Extract Transform Load (ETL)	Machine Learning	Python	R	SQL	Tableau
Data Analysts	3.64%	16.65%	5.63%	22.90%	16.51%	53.76%	25.42%
Data Engineers	6.80%	44.39%	21.89%	59.82%	12.39%	56.21%	12.63%
Data Scientists	35.83%	8.03%	61.64%	70.35%	51.63%	48.78%	18.44%

Distribution of common data skills (Feb 2020 – Feb 2021). Source: Emsi Job Posting Analytics – Q1 2021 Data Set.

Recap of Key Takeaways

So, we've reviewed A LOT of data and examples at this point. But the overall message is relatively simple. In conclusion, let's review our three key takeaways.

3 Key Takeaways

1) **Learners prioritize career relevance**

2) **Market-aligned programs are foundational for enrollment/retention success**
   a) Market-aligned programs are the engine that drives enrollment/retention

3) **The data/research you use to align programs should also be used to engage prospective learners**

Related Resources

For more practical guidance on putting these strategies to work, check out our **curated list of (free) downloadable guides and resources** for higher ed leaders and decision makers. Here are a few that you may find especially relevant to the topic addressed in this presentation:

Agile Program Management

A Guide to Market Research for Colleges and Universities

Skills Required

About Us

Our mission at **Emsi Burning Glass** is to provide data and analytics that help colleges and universities in three key areas. And as we've seen, all three of these areas have a role to play in strengthening enrollment through market-aligned programs:

OPTIMIZE
program offerings

CONNECT
students to programs and careers

COMMUNICATE
outcomes and impact

If you'd like to learn how Emsi Burning Glass can support your institution's mission and priorities, please **let us know**. We'd love to learn more about the work you're doing and explore how our data can help.