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Aligning Higher Education and the Labor Market: Guiding Principles and Open Questions

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Higher education's role in preparing students for work has increasingly been a concern among policymakers, employers, and the public at large. The cost of education is rising at a rate that far outstrips inflation and student debt is escalating just as swiftly.[1] While economic prospects for graduates are improving, employers remain risk-averse in their hiring practices, seeking precisely trained, experienced candidates who will be able to step into jobs with little to no additional training.[2] Students are also having a more difficult time transitioning into meaningful careers and many, especially women and first generation college students, report high levels of financial stress as they work to balance low incomes with high debt levels.[3] In this context, accessing good jobs is critically important for students, particularly for low and middle income students who do not have access to social networks that facilitate their transition to work. All of this leads to an increased focus on the idea of aligning higher education with the labor market.

But what does it mean to align what colleges are doing with the needs of the labor market? What are the implications for higher education? Known as the "completion agenda", traditional measures of student success assess the efficiency with which colleges graduate large numbers of students. The increasing diversity of students going to college, the reality of their economic needs, and the volatility in the job market, however, challenge us to find better ways to support and measure students' post-graduation success.[4] More recent efforts seek to measure learning outcomes to determine if colleges are producing graduates with the skills needed to succeed in work and life after graduation.[5] In addition to the organizations outside of academe that have begun in earnest to promote better alignment of higher education with labor market needs, some higher education initiatives, including the American Association of Colleges and Universities' Liberal Education and America's Promise initiative, are seeking to improve and describe the ways that a liberal arts education prepares students to excel in today's global, technology-empowered marketplace.[6]

If the higher education community is to embrace labor market alignment (LMA), though, what would this look like? How do leaders balance it with other aims in higher education? As policymakers often describe LMA – it often sounds like little more than a feat of engineering – similar to setting two pipes together to ensure a continuous flow of water. What we learned through our research, however, is that there are a diversity of definitions and approaches that help higher education institutions respond to the needs of students and employers within the boundaries of their own educational missions. Additional research on key LMA practices that help students balance financial and other life goals after graduation is critical, but a lack of a common framework and language to discuss LMA concepts presents obstacles.

Our research, based on a review of multiple areas of scholarly literature, proposes a working definition, key concepts, and guiding principles for LMA. We also pose additional questions that are essential to move the field ahead. This work is designed to inform ongoing LMA research, policy, and implementation efforts.

What is Higher Education – Labor Market Alignment?

The literature identifies a broad array of definitions and activities that could be called LMA. To be comprehensive, our definition needs to cover all of the activities college staff do to attempt to develop the "right" number of people with the "right" skills at the "right" time to meet demand in the job market, while also pursuing other goals and institutional missions. It also needs to include the many possible outcomes of these efforts. In other words, college officials hope to achieve a state of LMA

(as measured by various outcomes) and they often do this by engaging in various LMA activities. Our official definition of LMA is, therefore:

All activities – and related outcomes – that share the goal of ensuring that higher education institutions graduate the correct number of graduates with the necessary skills for the job market in a way that supports students' career goals and is consistent with institutional mission as well as current economic conditions.

All LMA efforts touch on at least one of two tightly bound goals: "job vacancy" and "skills alignment". **Job vacancy** alignment efforts focus on "getting the numbers right" by ensuring that there are enough graduates to fill open positions in the target job market.[7] **Skills alignment** approaches focus more broadly on aligning skills, competencies, and credentials with the skills, competencies, and credentials in greatest demand by employers.[8] As we explore here, LMA is not a static state or a one-size-fits all set of activities or outcomes– it involves negotiation of definitions, goals, and measurements among many groups.

Key Principles of LMA

LMA involves reaching a balance between stakeholder needs that are sometimes in conflict.

Multiple stakeholders influence the development of LMA goals, the application of LMA strategies, and the measurement of LMA outcomes—ultimately, even what the "correct numbers" and "necessary skills" are differs for policymakers versus employers versus educators versus the students themselves. The interests of stakeholders are frequently contradictory—it benefits employers to have an oversupply of skilled applicants, which both improves selection quality and keeps wages low, but students and policy makers would rather assure students face less competition when applying for high wage jobs and students, in particular, seek jobs that align with their unique interests. Higher education itself serves broader purposes and audiences than solely workforce development, as well. Postsecondary institutions are not well-suited to rapid response program development in order to meet shortened industry demand cycles. Furthermore, unless the institution has a specific mission to prepare students for the workforce, there can be great tension between employer expectations and a college's mission.[9] Given their sometimes divergent goals, LMA involves a balance between the needs and goals of stakeholder groups within a rapidly shifting labor market.

LMA approaches depend on the goals—there is no "one-size-fits-all" approach.

LMA efforts include a variety of approaches from traditional career and technical programs community colleges, to reform efforts in career services and academic advising at four year institutions, to graduate-level professional certification. In recent years, competency-based education and career pathway initiatives have sought to fine-tune and add flexibility for job seekers and employers.[10] It is important to understand that there is no one "best" labor market alignment strategy— the needs of multiple stakeholders and individuals' goals must be brought into consideration with employer needs, institutional missions, and job market conditions, which requires a broad array of research-supported tactics. There is much to be learned about which methods and vehicles are optimally positioned for which strategies. No one labor market alignment approach will fit every objective or every institution. Multiple approaches are needed to suit the needs of each sector, program, institution, and student population.

LMA can take place in all areas of institutional activity, including curricular and co-curricular activities across every level of education—from individual classes to entire systems.

Multiple areas within higher education can have a role in supporting alignment. Both curricular and co-curricular areas within higher education can support job vacancy alignment and/or skills alignment goals. In curricular areas, higher education actors can pursue alignment through program selection and enrollment management, program content and curriculum development, and instructional strategies. In addition to curricular areas, higher education actors may consider how co-curricular activities, such as work-based learning activities as well as student advising and support services, can support higher education-labor market alignment goals.

Further, while current attention mainly focuses on how institutions engage in LMA, activities related to LMA also regularly occur at many levels of implementation. This includes the system level, such as all institutions in a specific higher education sector or all institutions within a state or a region; an institution, such as a single college or university; a department, including several related programs in an institution; a program of study within an institution; and a class within a program of study within an institution. LMA may be carried out in these various levels simultaneously as actors within each level take action to align educational programs and services with the job vacancy and skill needs of employers. Table 1 illustrates example LMA approaches at each level, recognizing that these are illustrative and a great variety of approaches exist.

Table 1: Examples of LMA Approaches

Career pathways system reform at the state level	4-year liberal arts college	University academic department	Community college workforce program	Short-term professional development course
- State labor market assessment to determine programs to expand and/or add - Employers provide input on occupations, credentials, and broad skills - Contextualized learning - Connections to workplace learning fostered - Stackable credentials - Prior learning credit for work and military experience	- Local, regional or national labor market assessment to inform new majors and broad enrollment levels - Employers provide broad input on general skill needs - Problem-based learning and intensive writing - Internships and industry exposure strongly promoted - Coordinated academic and career counseling, early and ongoing. - Optional career course for credit	- National or state labor market assessment to determine majors to expand and/or add - Employer advisory groups provide high-level input on skill needs and competencies - Problem-based learning - Internships required or strongly promoted - Integrated academic and career counseling - Mandatory for credit career development course	- State or local labor market assessment to determine specific programs and enrollment levels - Employer panels to identify specific skills and competencies for curriculum - Hands-on applied learning - Required internships - Coordinated academic and career counseling, early and ongoing.	- Local labor market assessment to determine specific enrollment levels - Employer panels to identify specific skills and competencies for curriculum - Problem-based learning - Job shadowing experience - Integrated career advising

LMA involves three processes—data collection, incorporation, and relationship building.

Data collection is essential—unless we know which skills and jobs are needed by employers, it is hard to align education efforts with the existing or anticipated gaps. Shockingly, there is no consistently reliable data source for this information. Institutions, systems, and programs use a plethora of public and private data, employer advisory groups, and other qualitative resources in order to inform their attempts to meet labor market demand. Publicly available information, while free, is often unreliable.[11] Privately available information, for a cost, is typically acquired through "scraping" and analyzing of online job posting sites, making the data current but its accuracy difficult to assess.[12] Data obtained from focus groups with employers is, by its nature, anecdotal, and employer surveys present other challenges, not least of which are obtaining a representative sample and identifying the right people to answer questions. Nor is there an accurate way to assess the supply of prospective employees.[13]As a result, while each of the data sources available provide some potentially useful clues as to the direction and possible extent of employer workforce and skill needs, assessing the skill and job vacancy demand in the present, let alone the future, is more of a necessary art than a precise science.

Higher education LMA efforts can incorporate information gained from data collection into refining and improving curricular and co-curricular activities. A commonly discussed way to address data incorporation is through program and enrollment management—if data shows that more nurses will be needed, more nursing programs are added to meet job vacancy alignment needs. To address skill demand, colleges may add new courses or content within courses. If computer programming shifts to a new language, for example, new computer programming language courses may be added to a degree program's requirements to meet skill alignment needs, or faculty may adjust content in an existing programming course. However, these specific ways of adjusting curriculum are not always appropriate. Other approaches to incorporating

information can include changes to student advising to include updated information on job prospects and/or increased connections to particular kinds of work-based learning experiences.

Relationship building with employers is critical to most LMA activities and helps to ensure pathways to employment for graduates. Employers are more likely to hire workers they know, either directly through internship experience or through the proxy of a trusted institution or program.[14] Instructional leaders across every kind of institution and program also benefit from consistent communication with employers to maintain curricular relevancy and make real-world application connections for their students—particularly in liberal arts programs.[15]

Figure 1 summarizes these processes for labor market alignment in higher education, along with the activities they act upon, factors that influence them, and their eventual outcomes.

Figure 1: A Framework for Labor Market Alignment in Higher Education
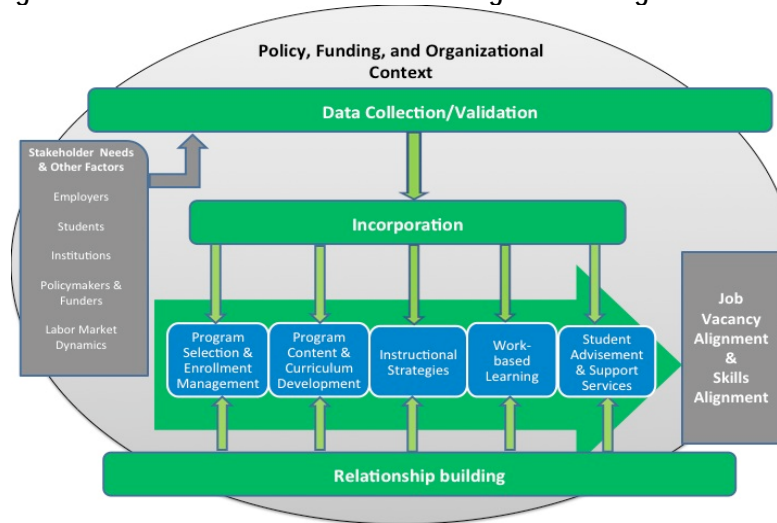
LMA outcomes require multiple measures—there is no one perfect outcome measure.

How do we know if labor market alignment activities have been successful for students, employers, and local economies? Government and other organizations involved in promoting LMA often use student employment outcomes, such as rate of employment, earnings, and retention, to assess whether these activities were successful in providing the "right" number of graduates with the "right" skills. These outcomes are proxy measures. If students obtain good jobs with good salaries and stay in them, the assumption is that employer and student needs are being met and the program is "successful". There is no universal threshold for this success, however, and these metrics are sometimes hard to capture well. They also may not capture whether stakeholders' needs were truly met. Students, for example, may prefer to launch a business or pursue lower wage jobs or other goals that are a better fit with their interests. In addition, with no reliable data on supply and demand and a volatile job market, such strictly quantitative measures are not a very fair measure of quality.

Other outcomes that can add more dimension to our understanding of the results of LMA efforts (though each has its own limitations) include measuring the attainment of employer-recognized credentials; direct assessment of student / employer experiences and satisfaction. There is very little agreement in either the research or policy literature around which methods and indicators are appropriate for use at which institutional level or course level, target labor market or within certain labor market conditions. More than one set of metrics likely will be required.

Research is needed to inform on-going LMA efforts.

More research is clearly needed on all aspects of labor market alignment. Research will promote better policy and practice dialogue, leading to improvements in the way educators prepare students for the workforce. We suggest several areas of inquiry.

Understand alignment approaches. Comprehensive outcomes research tied to activities on both job vacancy and skills alignment is needed in order to determine if efforts are having a meaningful impact for students, employers, and the economy. No standards currently exist, however, to define how to assess and achieve the "right" number of graduates and the "necessary" skills for the job market, or which approaches work best for whom and at which level. This lack of clarity makes it difficult for stakeholders to determine whether efforts are succeeding or to be strategic in labor market alignment activities. While approaches are complex and require multiple measures, without understanding the inputs, we will struggle to improve the outputs.

Understand institutions. Research is also needed to understand how institutions balance the goals of LMA with their other missions. We need to research the alignment approaches that support the core missions of liberal arts colleges as well as community colleges, and comprehensive and research universities, which can vary significantly. Researchers also need to better describe the organizational learning processes that best allow particular alignment strategies to succeed in various settings. Non-vocational institutions, which are often most opposed to LMA out of fear of it conflicting with a liberal arts mission, need guidance to better understand how to implement particular LMA strategies that work for their students, rather than writing off LMA as something that falls outside their work. How does LMA work in four year-institutions, university graduate and professional programs and community colleges? How is data used? How is advisory feedback used? How are conflicts reconciled? Understanding how LMA works in various institutions will help provide direction to improve practice.

Understand student needs. Too little is known about the student side of this equation—how do students make decisions around courses of study and careers? How do students access and evaluate labor market data? How can students be best engaged by higher education to support their needs in this area? Which interventions make the biggest difference in students' ultimate career success? How do students' needs vary based on their experiences and background? How can different populations benefit from different LMA approaches?

Understand employers. The role of employers is understudied despite its importance in this arena. How do employers understand and engage with higher education? Why? What are their barriers to closer involvement in labor market alignment conversations? In an era when employers have reduced investment in training, how much should higher education change to address employer skill needs? How much should employers change? What exactly is the role of credentials in hiring? What meaning do employers of various types assign to credentials and how do they form these meanings? How do credentials take on value and meaning?

Understand labor market indicators. Finally, what would be a more effective way of evaluating supply and demand data? While there may be no perfect set of data, which of the existing data sources —traditional labor market data, real-time jobs data, higher education graduation data—has the best predictive power for job vacancy / skill alignment needs? Or is there another indicator we haven't even considered yet that's actually better suited to this need, helping higher education and employers find a clear channel for the school to jobs pipeline?

There is much more work to be done to help our education and employment sectors function with greater clarity and coordination, but with additional research and carefully evaluated approaches, improved labor market alignment will assure our society is able to move forward, our economy will remain strong, and higher education will continue to promote opportunity among its graduates.

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