The Cornerstone: Building an American Public Policy for Educational Attainment and Success in the Labor Market

Michele Holmes

Public Relations Specialist

Wyoming Department of Workforce Services

Research & Planning

June 3, 2013

The Cornerstone: Building an American Public Policy for Educational Attainment and Success in the Labor Market

Wyoming Department of Workforce Services
Joan Evans, Director

Internet Address: http://doe.state.wy.us/LMI/
Research & Planning
Tom Gallagher, Manager

Prepared by:
Michele Holmes
Edited by:
Phil Ellsworth
Michael Moore
Reviewed by:
Valerie A. Davis
Patrick Harris
Carol Toups

Submitted for Publication June 2013

Department of Workforce Services Nondiscrimination Statement
The Department of Workforce Services does not discriminate on the basis of race, color, religion, national origin, sex, age, or disability. It is our intention that all individuals seeking services from our agency be given equal opportunity and that eligibility decisions be based upon applicable statutes, rules, and regulations.

Research & Planning
P.O. Box 2760
Phone: (307) 473-3807
Fax: (307) 473-3834

R&P Website: http://doe.state.wy.us/LMI/
URL for this publication: http://doe.state.wy.us/LMI/w_r_research/cornerstone.pdf

"Your Source for Wyoming Labor Market Information"

Table of Contents

Introduction

In the United States, the belief that higher education is the key to success in the labor market is "an article of faith" (Covaleskie, 2110, p.1). Although this belief is echoed by policymakers and educators alike, the requirements for "success" in the workforce shift based on changing industrial needs, technological advancements, war, changes in natural resources and social attitudes toward education (Ochsner & Solomon, 1979). In addition, requirements for success in the workforce vary by industry and occupation. Given our rapidly changing job market and global economy, it comes as no surprise America's education policy has become increasingly concerned with workforce development over the last 30 years. Preparing students for gainful employment in a competitive marketplace is not just one of many desired outcomes; it is a central charge for American schools.

The 1983 report of President Ronald Regan's National Commission on Excellence in Education (NCEE), *A Nation at Risk: The Imperative for Educational Reform*, successfully rooted the language of workforce development into the national discussion on education. *Nation* did more than introduce the lexicon of workforce development into education policy, it sought, in part, to answer the question: what is school for? David Pierpont Gardner and the NCEE argue in *Nation* that one goal of education reform should be the creation of a "Learning Society," grounded in "the idea that education is important not only because of what it contributes to one's career goals but also because of the value it adds to the general quality of one's life" (1983, p. 22). The value education adds to one's life, while given theoretical mention in *Nation*, is not the cornerstone for the reform suggested in the report. *Nation* is concerned with human capital, competition, and education as a mechanism for attaining "the mature and informed judgment needed to secure gainful employment" (p. 16). The reason for the NCEE's concern was the rise

of global competition, and America's uncertain future as an economic superpower. The report states "the time is long past when America's destiny was assured simply by an abundance of natural resources…we live among determined, well-educated, and strongly motivated competitors" (p. 14). The central "risk" in *Nation* is not, as the report states, that America may drown in a "rising tide of mediocrity," but that the rest of the world has learned how to swim (p.1).

The findings of *Nation*, namely that the academic performance of students in American high schools was dismal, framed the national dialog that our public schools were failing to produce competitive workers, and that this failure would undermine America's position of economic dominance. One problem with tasking schools with workforce development lies in the fact that students graduating from high school or college simply do not face the same job market from generation to generation. From World War II to 1965, there was a steady demand for college-educated workers in the United States (Ochsner & Solomon, 1979). By the late 1960s, some professions like elementary school teaching had already balanced supply with demand. Even so, the number of college graduates increased steadily. From 1950 to 1970, the number of college-educated workers quadrupled, from seven million to 28 million (Jaffe & Froomkin, 1978). Today, many of those graduating from college find themselves un- or under-employed (Vedder, Denhart, & Robe, 2013). Educational attainment, alone, it seems, is not enough to ensure labor market success in America.

In 2011, nearly 30 years after *Nation*, Congress reauthorized legislation to ensure students graduating from high schools and colleges in the U.S. are prepared to secure a place in the workforce. The America Competes Act (2007) focuses on the perceived skills gaps between the educational system and the labor market, calling for an alignment of educational

"requirements, standards, and assessments with the knowledge and skills necessary for success…in the 21st century workforce" (Sec 6401). In 2012, several states introduced legislation seeking to fuse workforce development and higher education, including Alaska, Colorado, Iowa, Oregon, South Dakota, Utah, and Washington (Higher Education Legislation, 2012). This paper presents an overview of the evolving relationship between public policy, educational attainment, and the labor market – including the current interest in tasking high schools and postsecondary institutions with workforce development. The answer to the question "what is school for," while perhaps beyond the scope of this paper, is a question answered each time workforce development and education policies intersect; the answers, in their disparate and complementary ways, form the cornerstone on which the future of our education and workforce development systems rest.

Educational Attainment in the United States: A Brief History

Motivations for educational attainment in the United States have undergone a dramatic shift from the 17th century. Historian Samuel Eliot Morison wrote that the aim of the early American college was "to develop the whole man – his body and soul as well as his intellect" in the interest of forming a person "inclined toward gentility and public service" (quoted in Delbanco, 2012, p.40). The first American colleges had a strong ecclesiastic bent, and in the period from 1642-1689 nearly half of Harvard graduates became clergymen. The importance of educating the "whole man" was evident, even in institutions rooted in religion. At Harvard, courses in logic, philosophy, arithmetic, and ethics took up a large portion of students' time (2012). By the start of the Industrial Revolution, however, the percentage of clergymen produced at Harvard dropped to 15%. Changes in occupations resulting from the rise of industry, westward expansion, and scientific development began to reshape the traditional curriculum set forth by

institutions like Harvard (Herbert). Beginning in 1880, Harvard saw an increase in students pursuing degrees in business, and the value of a degree for aspiring businessmen began to be recognized by employers (Knox, 1941). By 1908, Harvard opened the doors to its School of Business, and by 1914 the school changed its "Economic Resources in the United States" course to "Marketing," in the interest of advancing applied business practices (Peitrykowski, 2001).

Few "learned" professions required academic degrees in the early 19th century, but by mid-century professional programs for law and medicine took up residence on university campuses. The apprenticeship system of indentured servitude was dwindling in the revolutionary era, and occupational freedom was understood as directly related to contractual consent (Jacoby, 1991). In 1861 the Civil War began, and President Lincoln seized the opportunity to pass the Morrill Act which had been previously vetoed by President Buchanan because he believed it to be unconstitutional. The Morrill Act of 1862 allowed for the rapid expansion of university programs and also marked the beginning of the federal government's direct involvement in higher education. The act allowed states to sell a portion of land for profit as long as the money went to an endowment fund to support colleges in each state. The Morrill Act motivated states to expand their university curriculum to include agricultural, mechanical, scientific, and liberal arts programs (Higher Education in the United States, 2013). The Second Morrill Act of 1890 continued the expansion of land-grant colleges, and also provided funding for African-American education by creating 17 new colleges in southern states (2013). The expansion of southern land-grant colleges was key to the African-American civil rights movement, although it provided for mainly agricultural and mechanical colleges and occurred 27 years after The Emancipation Proclamation. The essential aims of the early American college, focused on the "body and soul" of the individual, expanded during the Civil War: college became a mechanism for nation

building, a civil right, a ticket to upward mobility, and a credential during a rapid expansion of disciplines.

Rising Enrollments and the Labor Market

Like high schools, universities remained essentially elite in the pre-World War II era (Shanahan, Meich & Elder, 1998). In the 1950s, the percentage of adults in the United States holding a bachelor's degree was in the still in the single digits, and by 2010 increased to 30% (Vedder et al., 2013). According to Shanahan et al., the spike in higher education enrollments after 1950 stems in part from the GI Bill, which allowed veterans access to a university education (and kept them out of a labor market that could not absorb them). The founding of women's colleges and the expansion of land-grant colleges into state universities also contributed to the vast increase in college attendance after World War II (Delbanco, 2012). The rapid rise in "human capital," many economists argue, deserves much of the credit for America's rise in the 20th century to a position of economic dominance (2012). This is not to say that the rapid increase in human capital went on without negative (if unintended) consequences. Vedder et al., (2013) argue that "over time…the proportion of the workforce with college degrees has grown far faster than the proportion needing those degrees in order to fulfill the needs of their jobs, forcing a growing number of college graduates to take jobs which have historically been filled by those with lower levels of educational attainment" (p.12). The increase in college-educated workers continues today, and higher education policy discussions have shifted accordingly. Now we have enough college-educated workers; it's just that they lack the skills to succeed in the labor market – or do they?

The number of college-educated workers taking jobs traditionally filled by those holding no more than a high school degree has been on the increase since the 1970s. Over 80% more B.A. holders were available for jobs in 1976 than in 1960 (Ochsner & Solmon, 1979). Based on their study of the rising numbers of college graduates, Ochsner and Solmon made the following predictions:

1. The rate of growth in the labor force will not be as substantial in the next few decades as in the last few.
2. An "oversupply" of many different types of highly educated professionals is likely.
3. Because of this oversupply, the economic value of a college relative to a high school education will be reduced, resulting in increased underemployment and unemployment of college-educated manpower and increased educational upgrading of jobs by employers.
4. Postsecondary institutions will be doubly affected both as producers and as primary users of educated manpower. (36)

A number of researchers argue that the oversupply of college-educated workers predicted by Ochsner and Solmon continues today (Daly, Osborne, & Valletta, 2007; Rosenbaum & Binder, 1997; Vedder et al., 2013). The "solution" to a growing number of unemployed graduates remains unclear. On one hand, the belief in producing more human capital remains strong in the U.S., and is seen as a way to maintain economic dominance in an increasingly competitive global climate. On the other hand, the return on investment for a college degree (full-time employment paying a competitive wage) seems harder to attain. In addition, the opportunity for educational attainment becomes available to a smaller portion of the population as federal funding for colleges and universities slows, and more of the cost burden of attaining a degree shifts to the student in the form of tuition hikes (Delbanco, 2012).

The federal government attempts to mitigate the cost of an education in the form of federal student loans. In Wyoming alone, for the academic years 2011-12, students received nearly $44 million in subsidized federal loans, and just over $48 million in unsubsidized federal loans (United States Federal Student Aid Data Center, 2013). While student loans may allow more students to attend college, the cost of borrowing is not cheap. According to a recent article in *Education News*, the Department of Education is projected to earn $50.6 billion dollars in FY 2013 from student loan interest alone (2013). Interest rates on nearly three-quarters of student loans distributed in 2013 fall between 6.8 and 7.9% – high when compared with the current, average new 30-year fixed mortgage rate of 3.5% (Education News, 2013). Until the 1980s, federal funding for institutions of higher education remained robust, as did state funding for public higher education. It wasn't until a federal slowdown in higher education funding that policy discussions began to center on higher education's private economic role, with diminishing attention paid to other benefits (Lyall & Sell, 2006). Federal student loans became a way to keep college affordable to the masses, and ensure that the U.S. continued to increase the numbers of college-educated workers.

One of the great policy questions of the 1990s was how to increase youths' skills to meet the needs of the workforce (Rosenbaum & Binder, 1997). The Workforce Investment Act of 1998 established the Community College and Industry Partnerships Program, which awards grants to colleges and universities "for the purpose of developing, offering, improving or providing educational or career training programs for workers." Tasking institutions of higher learning with workforce development might be one "solution" to the abundance of un- and underemployed graduates. Apart from the debate over the proper role of education in workforce development, the question of how to increase youths' skills is a complex one, and it is often

unclear what actions, if any, employers "take in pursuit of their stated need for young workers with skills" (Rosenbaum & Binder, 1997). If the skills young people need for success in the labor market remain unidentified, and the actions taken by employers to obtain those skilled workers remain unidentified, then the underemployment of college-educated workers would seem likely to continue. Policy initiatives seeking to link higher education and workforce development haven't yet consistently identified or produced the workers with the skills or credentials needed for success in the labor market.

Part of the difficulty with formulating a policy to bridge the skills gap for young workers might have to do with the fact that economists and sociologists have differing views of employers' needs (Rosenbaum & Binder, 1997). Neoclassical economists "assume that employers seek to maximize productivity, shop around for the best workers, and pay workers according to their skills and productivity (Becker 1964; Heckman 1994). Some sociologists, like Berg, argue that access to jobs is "constrained by educational credentials," and actual skills matter less than a credential in securing satisfactory employment (1971). If access to jobs is constrained by credentials, and the percentage of young people graduating college continues to rise, then the argument for continued "credential inflation" seems plausible.

While economists argue employers need workers with skills, "needs" and "skills" are not easily measured (Rosenbaum & Binder, 1997). Academic skills are often measured by total years of education, but this is a poor indicator because many high-school graduates lack eighth-grade mathematics and reading skills (1997). Economists measure employers' needs by the wages paid for a job, but rarely distinguish between stated job requirements and actual needs (Murane et al., 1995). The concepts of "needs" and "skills" will need to be clarified through further research if students are to acquire the skills necessary to compete in the labor market. If needs and skills

gaps can be addressed through the framework of higher education, then reliable data to determine those needs and skills must be available to educators and policymakers – and the proper applications of the data must be understood.

Function of a Four-Year Degree Today: How Meaningful is the Signifier?

Vedder, et al., argue the primary function of a college degree for employers today is as a "signal of drive or talent, regardless of the relevance of the skills actually learned in college" (2013, p.11). The "signal" argument builds on a study by Berg (1971), which contends employers use a college degree as a sorting device, and that employers do not generally have jobs that require the amount of education stated in their requirements. Signaling theory (Spence, 1974) and credential theory (Collins, 1997) build on Berg's work and suggest educational attainment serves as a way to augment an employer's limited amount of information regarding a perspective employee. A large body of literature (Attewell 1987; Levin and Rumberger; Shaiken 1984; Squires 1979) supports Collins' and Spence's claims.

In other words, employers can be relatively certain that a college graduate has a sufficient IQ, and possesses the tenacity to complete a four-year degree. One problem with the "screening device function" of a degree is that it allows colleges to raise tuition based on the assumption employers will pay higher salaries to graduates in order to reduce turnover costs (Vedder, et al., 2013). Vedder, et al., claim the other problem with using a degree primarily as a signaling device for employers is that the degree becomes less valuable as more graduates enter the job market, and are forced to take lower-paying jobs historically reserved for those with only a high-school education. The phenomenon of large numbers of workers in "lower-skilled occupations" and "possessing baccalaureate degrees" perpetuates "credential inflation" (p.11). In a cycle of

increased enrollments and credential inflation, students cannot rely solely on the signaling function of a degree to secure a place in the labor market.

College Tuition vs. Future Earnings for Graduates

According to the Center for College Affordability and Productivity (2013), the United States now produces far more graduates with a Bachelor's degree than are needed in the labor market. Data from 2010 show that of the 41.7 million working college graduates, 37% held jobs requiring a high-school diploma or less (2013). The "payoff" for a college degree seems increasingly elusive, as more new graduates find themselves un- or underemployed. Even before the Great Recession, Herbert (1999) found college students becoming "intensely job- and income-oriented," and claimed many understood "technical specialization," as the main requirement for entry-level positions in the workforce. Considering the large number of underemployed graduates, one must wonder how well our universities are meeting the criteria of "technical specialization," and if meeting those criteria necessitates a four-year degree.

Herbert claims students' attitudes toward higher education are in large part shaping the phenomenon of a "market-driven university," where the student-patron demands a jobs-oriented curriculum (1999). Vedder, et al., take a slightly less optimistic view of the patron's power to determine curriculum, and predict enrollments in four-year programs will continue to rise despite underemployment of college graduates in the current labor market (2013). A continued rise in the number of college graduates with bachelor's degrees in an already saturated job market might eventually become self-correcting, as new graduates become discouraged with the limited career opportunities available. Until that time, however, guidance counselors and university enrollment

personnel continue to paint an “overly rosy” picture of career opportunities and earning potentials for college students (p.21).

Universities likely ignore students’ cries for a more jobs-focused curriculum in the interest of self-preservation. A heavily vocational focus, as seen in many community colleges, hinders educational attainment (Roksa, 2006). Rather than address the labor market / skills gap existing in university curriculums, institutions continue to “raise the credential bar,” launching PhD programs targeted at occupations historically needing no more than an associate’s degree. Capella University recently launched an online PhD specialization in nursing education, which aligns with the National League of Nursing Competencies (2008). The PhD specialization aims at filling the shortage of nursing faculty in the United States. Despite the shortage of faculty, the National Advisory Council on Nurse Education and Practice sought to “increase the percent of baccalaureate (BSN) prepared nurses in the workforce to at least two-thirds by 2010” (Graf, 2006). This push for an increase in BSN prepared nurses came at a time when 37% of the working nurses and 60% of new nursing graduates were associate’s-degree prepared. Further findings by Graf demonstrated that after projecting the lifetime earnings “for more than half of the AND-to-BSN graduates, the costs of education were greater than the salary increase” (p.1). Younger nurses were more likely to have a higher rate of return on a bachelor’s degree, but for older nurses considering the BSN, the cost of the degree far outweighed future earnings. Graf’s studies demonstrate that students must consider whether their chosen degree path will yield a positive return on investment in the labor market.

The Role of Occupational Licensing in Workforce Demand

The push for increased educational attainment in the U.S., in- and outside of highly specialized occupations, hasn't alleviated the numbers of unemployed college graduates in the last decade (Vedder, et al., 2013). With a plentiful supply of graduates, armed with at least a symbolic measure of tenacity, a decent IQ and a basic set of skills, one must wonder why so many of them are out of work. One exacerbating factor in the oversupply of college graduates might be the rapid increase in occupational licensing. According to Kleiner & Wheelan (2010), occupational licensing "is the legal process by which governments (mostly states in the U.S. but also local governments and the federal government) identify the legal qualifications required to participate in a trade or profession, after which only licensed practitioners are allowed by law to receive pay for doing work in the occupation" (p. 1). The number of occupations in the U.S. requiring licensing has increased dramatically since the early 1950s, when less than 5% of the U.S. workforce was required to have a license (Kleiner & Krueger, 2001). By the 1980s the percentage of licensed workers had grown to 18%, and by 2009 nearly 29% of the workforce was under state licensing laws (2001). The number of licensed occupations varies across states; in 2005, the number of licensed occupations ranged from 47 in Kansas to 178 in California (Kleiner, 2000). In Wyoming, 96 occupations require licenses, certificates, or other registration. The most commonly held view on the economics of occupational licensing is that it constricts the labor supply in the licensed occupation (2000). Once an occupation is regulated, members of that occupation (via licensing boards) can make it even harder to enter the occupation by implementing tougher statutes, examination pass rates, and education requirements (2000).

Proponents of occupational licensing claim it offers the public protection from negligent service providers, especially in medical professions. Doctors, dentists, optometrists, midwives,

reparatory therapists and physicians' assistants are all commonly licensed occupations. The public safety argument asserts licensed practitioners do less harm because they are under the watchful eye of the licensing board and the state in which they practice. One of the more famous cases involved Dr. John Brinkley, who was exposed as such in the 1920s by the American Medical Association (AMA) after he began transplanting goat testicles into humans as a cure for impotence (Frank, 2004). Before the AMA intervened, Brinkley enjoyed a booming business – thanks in part to broadcasting on his own radio station "word of his miraculous cure across the entire country" (2004, p. 196). Brinkley's odd but profitable practice, along with his questionable medical degree from an "eclectic" institution, quickly caught the attention of the AMA, and they were "determined to make an example of him" (2004, p. 197). Had the AMA not intervened, Brinkley would have continued to perform the transplants; he had a long list of patients waiting for the procedure at his Milford, Kansas clinic (2004). In Kansas in the 1920s, "irregular" medical degrees (like the one held by Brinkley) were still considered valid. The AMA put an end to Brinkley's practice, and one of its primary objectives became ridding the state of quackery (2004).

Consumers today generally support the licensing of medical professionals, since the cost of services is high and the consequences of medical malpractice can be severe (Law & Sukkoo, 2005). Law & Sukkoo found that the very medical licensing requirements that restricted entry were most likely to improve physician quality. Although the dominant economic view of occupational licensing is that it drives up pricing, and that licensing boards create barriers to entry, justifications for the practice beyond public safety do exist. Law & Sukko (2005) claim licensing serves to mitigate problems of "asymmetric information," which occurs when "sellers of specialized services are better informed than buyers about the various dimensions of product

quality" (p. 1). A rapid increase in the number of occupations requiring licensing, as seen in the United States between the 1950s and 1980s, can be seen as a necessary response to the rapid growth in scientific knowledge (and specialization) within the medical community (2005).

Critics of occupational licensing claim that the practice does little to improve public safety (Summers, 2007). A 1982 study revealed that nearly 20% of the dental work done under insurance plans in California "was so shoddy that it required retreatment" (2007, p.3). Despite this figure, California's dental board punished only eight licensees that year (2007). Licensing boards may have an incentive to protect their own, fearing the negative publicity that might come from bringing to light the negligence or misconduct of one of their practitioners. In contrast, licensing boards often aggressively prosecute unlicensed workers, regardless of whether there is a public safety concern involved (2007).

In addition to creating barriers to entry, licensing reduces mobility within fields (Kleiner & Wheelan, 2010). Licensure can make it difficult for a teacher to relocate (because of differing standards in each state) or for dental hygienists to offer basic care without the supervision of a dentist (2010). Licensure limits mobility in the medical professions, where more than 76% of non-physicians are licensed and "where there are rigidly defined roles that prevent individuals from moving across jobs or from performing multiple tasks" (p. 2). Because occupational licensing drives up the cost of services by restricting mobility and supply, critics of the practice claim licensing board members have an inherent conflict of interest.

According to Kleiner, nearly three-quarters of the licensing boards in the U.S. are composed of incumbent members of the profession (2000). Reducing the inflow of new practitioners drives prices higher because it limits competition for existing members of the

profession. The ability of licensing boards to inflate prices through regulation is well documented (Benham, 1975; Bond et al., 1980; Cox, 1982; Jacobs et al., 1984; Schroeter and Smith, 1987). In the U.S., licensing boards commonly place restrictions on mobility and advertising, which can drive prices up nearly 30% in occupations like dentistry and optometry (Summers, 2007). Licensing boards often "use political institutions such as state legislatures or city councils to control initial entry and in-migration, and thereby restrict supply and raise the wages of the licensed practitioner" (2007, p.4). Law & Sukko (2005) argue licensing boards do drive up prices with barriers to entry, but also by disciplining careless practitioners, which raises the quality (and cost) of services to consumers. One reason why the discipline imposed on practitioners by licensing boards might be effective is that measures of competency are rather clear: if a dentist provides a shoddy root canal, the patient will know it immediately.

The efficacy of discipline seems central to both occupational licensing and our current accountability movement in U.S. education policy. Clearly the student-patron has a vested interest, personal and financial, in obtaining a high quality education, but what are the appropriate measures when it comes to educational quality? We currently measure the efficacy of our educational system largely in terms of standardized test scores and completion rates. With the current measures, and the products produced from those measures, does an "asymmetry of information" exist regarding the return on investment in a college degree? And is the asymmetry so great that the government should intervene? Further, if the desired effects of education range from learning for learning's sake to employment in one's chosen field, does a system of punishments and rewards actually produce the desired effects? If educational quality is poor, just as when the quality of medical services is poor, the patron suffers; he may find himself lacking in basic skills, unemployed, underemployed, or burdened with enormous student debt.

Community Colleges and Credentialing: Closing the Skills Gap?

Certificate programs offer one alternative to licensing, and don't seem to constrict labor supply in the same way. Certification in an occupation is not a requirement for entry. For example, in the U.S., auto mechanics are usually certified. One does not have to be certified to be a mechanic, but certified mechanics often charge more for their services based on the confidence instilled in the consumer by the certificate. Certificate programs are common in a number of other occupations, and represent a middle ground between occupational licensing and the absence of regulation. Certificate programs are also one way skills gaps can be satisfied without a four-year degree.

Community colleges, perhaps more than universities, find themselves at the nexus of higher education and workforce development. Because community colleges diversify their curricula with certificate, degree, and customized training programs, they have the ability to respond to the needs of students and employers (Carnevale & Desrochers, 2001). Community colleges can also afford to customize their credentialing programs to the local economy – something that may not be as easy (or practical) to do in a university setting. In terms of workforce development, community colleges offer public job training, occupational preparation for public or private credentialing, short-term worker training, and customized training for employers (2001). The rapidly changing technological requirements of our knowledge economy present challenges to both community colleges and private for-profit providers, and incorporating the changing technology into short-term training programs can prove difficult.

Despite the challenges, community colleges seem particularly interested in pinpointing the skills that will allow graduates to land jobs, a point demonstrated by the experimental use of software able to collect labor market data (Gonzalez, 2012). LaGuardia, a City University of

New York, is one of 10 community colleges using experimental software to collect labor market data. The software gathers information from job ads, newspapers, company Web sites, and government agencies, and then analyzes the content and produces a database of current job opportunities – including which companies have the most openings and what the job listings say (2012). Proponents of the software claim it "has the potential to help fix the apparent mismatch between colleges' training and employers' needs" (2012). Fixing the mismatch, of course, entails continually adjusting the college's curriculum to meet employers' needs. The use of experimental software to collect labor market data is becoming big business, and companies charge large fees to analyze texts from job ads and company web sites. One problem with such an approach is that a single job opening is often posted to multiple websites, which creates a sampling bias. Moreover, a 2009 analysis of the text in employers' online job postings reveals that "employers who have a vacancy to fill immediately mention fewer required skills, and are less likely to mention required education" (Brencic & Norris, p. 704). Because of the nature of the data, it can be difficult to determine if information mined from the job description "pertains to the actual job characteristics, or is a function of other factors" (p. 704). In the rush to realign curriculum to meet the needs of the labor market, schools and other institutions can be lured by experimental labor market software that is not statistically sound.

Colleges empowered with the ability to apply accurate labor market data may offer part of the solution to employers' complaints about applicants' lack of talent and training, and could also make educational and vocational training programs more efficient (Gonzalez, 2012). Bureau of Labor Statistics programs like the Occupational Employment Statistics program and the Quarterly Census of Employment and Wages can be combined with unemployment insurance claims and other administrative databases to produce reliable occupational and earnings

projections. The problem, if there is one, is not that the labor market information for informed decision making is lacking – it is that the proper applications of the data may not be effectively understood and utilized.

Globalization and Higher Education

Lu and Zhang (2008) see the restructuring of higher education as a global phenomenon. Beginning in the 1980s, the rise of global competition necessitated a rebuilding of the relationship between the state and higher education. Concern over global competition gave rise to a "reconstruction of the relationship between education and society, which attempted to put a special form of ethics about competition as the main driving force of development of the school and the education system" (Whitty, 2003, p.56). Evidence for this shift, particularly in the United Kingdom, can be seen in the expanding power of the University Grants Committee (Lu & Zhang). Until the 1980s, the British government (through the University Grants Committee) provided higher education funds, and the universities decided how to best use the funds. By the mid-1990s, the British model for appropriating funds "shifted to a model based on the number of students and their research outputs" (Lu & Zhang, p.10). The shift in appropriations meant academics no longer controlled research interests, and critics claim that from that point on, academic freedom took a back seat to research production.

During the 1980s in the United States, a similar shift occurred. Washington's research policy "shifted from maintaining military superiority to maintaining the leading economic position in a competitive world" (Lu & Zhang, 2008, p.12). The Bayh-Doyle Act of 1980, which allowed "universities to retain rights of intellectual property of research items funded by the government," allowed universities to profit from patents, and in doing so encouraged further

partnerships between universities and private industry (p.12). U.S. policy at the federal and state levels persuaded colleges to increase productivity, respond to workplace needs, and some critics claim, “favor the interests of business, industry, and capital” (Levin, 2001, p.4). At the time, neither institutions nor governments possessed reliable data linking education programs with student outcomes in the labor force – so both proponents and critics of the restructuring of higher education had little to back their claims.

The government’s interest in producing human capital capable of competing in a global marketplace does not seem to be slowing, but Lu and Zhang argue that in the face of “increasingly scarce resources” the government cannot continue its “original funding commitment to the university” (p.60). Evidence of the government slowdown in university funding is well documented, and from 1996 to 2001, average subsidies received from the government decreased by 25% on average (Marginson, 2002). Considering diminishing resources, and the importance of education as a determinant for success in the local and global labor markets, states will need to produce reliable methods to maximize the efficiency of their educational spending.

Conclusion

Educational attainment in the United States has evolved, and postsecondary institutions face many challenges. In light of rising enrollments, sinking government subsidies, underemployment of young graduates, and the pressure to prepare a skilled workforce, the role of education in workforce development begs further examination. Education and training have long been touted as the primary mechanisms for labor market success, but efforts to promote opportunity have resulted in raising the level of educational attainment without addressing the

skills gaps found in the workforce. Other factors, like occupational licensing, protect the public from negligent practitioners but exacerbate already high unemployment by artificially constricting entry in a given profession. Education accountability policies seek to offer students and their families measures of quality assurance similar to those found in occupational licensing, but have yet to produce the desired results. The America Competes Act and other policies seek to bridge the gap between educational attainment and the skills needed for labor market success. The logical question following such legislation is whether policymakers, educational institutions, and students have enough information about the skills needed for success in today's shifting labor market. As higher education enrollments and students' costs continue to increase, states will need a method to determine which skills or credentials are important to labor market success. Because skills and qualifications demanded by the labor market change, they need to be measured longitudinally – doing so gives states the ability to pinpoint constants in an ever-changing stream of variables.

The United States has long recognized the importance of data in improving our education and workforce development systems, and has collected the data for decades. The federal government relies on data collection to track the results of its substantial investments in the education system. Dr. Mark Schneider, vice president of the American Institute for Research, points out in congressional testimony that for the hundreds of millions of dollars invested in linking student records to unemployment insurance data, the number of states that have made the data public "is close to zero" (Assessing College Data , 2012). Wyoming, because of its access to administrative databases outside the state, has the opportunity to improve education and workforce data – and move meaningful data into the public sphere. Wyoming is in the unique position to develop the products that will facilitate evidence-based decision making within its

education and workforce development programs. Wyoming has the data, the technology, and the obligation to utilize the data to support its education and workforce development policies – today, and in the future.

References

America Competes Act of 2007, PL 110-69 § 572 (2007).

Assessing College Data: Helping to Provide Valuable Information to Students, Institutions, and Taxpayers: Hearing before the Subcommittee on Higher Education and Workforce Training of the Education and the Workforce Committee, 112th Cong. 2 (2012).

Brigitte, S. W. (2009). Is human capital accumulation a self-propelling process? comparing educational attainment levels of movers and stayers. *The Annals of Regional Science, 43*(2), 323-344. doi: http://dx.doi.org/10.1007/s00168-008-0225-z

Brencic, V. & Norris, J. (2009). Employers' online search: an empirical analysis. *Industrial Relations*, 48(4), 684-709).

Cathro, H. (2011). Pursuing graduate studies in nursing education: Driving and restraining forces. *Online Journal of Issues in Nursing, 16*(3), 14-7. Retrieved from http://search.proquest.com/docview/1014288815?accountid=29653

Covaleskie, J. F. (2010). Educational attainment and economic inequality: What schools cannot do. *Journal of Thought, 45*(1), 83-96,6. Retrieved from http://search.proquest.com/docview/816806757?accountid=29653

Daly, M. C., Osborne, J., & Valletta, R. G. (2007). Educational attainment, unemployment, and wage inflation. *Economic Review - Federal Reserve Bank of San Francisco*, , 49-55,57-61. Retrieved from http://search.proquest.com/docview/208783789?accountid=29653

Davis, N. S. (1890, History of the medical profession and medical institutions of Chicago. *Magazine of Western History (1884-1891), 11*, 419. Retrieved from http://search.proquest.com/docview/137688370?accountid=29653

Delbanco, A. (2012). *College: What it was, is, and should be*. Princeton: Princeton University Press.

Dunifon, R., & Duncan, G. (1998). Long-run effects on motivation on labor-market success. *Social Psychology Quarterly, 61*(1), 33-48. Retrieved from http://search.proquest.com/docview/212698471/fulltext/13CE4A9BA045ABF2525

Graf, C. M. (2006). ADN to BSN: Lessons from human capital theory. *Nursing Economics 24*(3), 135-41, 123; quiz 142. Retrieved from http://search.proquest.com/docview/236936014?accountid=29653

Gonzalez, J. (2012). Real-time jobs data show community colleges what employers need now. *Chronicle of Higher Education,* , 0-0. Retrieved from http://search.proquest.com/docview/1314310964?accountid=29653

Frank, Thomas. (2004). What's the Matter With Kansas? *How Conservatives Won the Heart of America.* New York: Henry Holt and Company.

Herbert, K. (1999). The classics in america at 2000. *Classical Bulletin, 75*(2), 123-146. Retrieved from http://search.proquest.com/docview/222301792?accountid=29653

Jacoby, D. (1991). The transformation of industrial apprenticeship in the United States. *Journal of Economic History*, 52(4), 887-910.

Kerckhoff, A. C., Raudenbush, S. W., & Glennie, E. (2001). Education, cognitive skill, and labor force outcomes. *Sociology of Education, 74*(1), 1-24. Retrieved from http://search.proquest.com/docview/216492287?accountid=29653

Kleiner, M. (2000). Occupational Licensing. *Journal of Economic Perspectives*, 14(4), 189-202. Retrieved from http://search.proquest.com/docview/229866600?accountid=29653

Kleiner, M., & Krueger, A. (2001). Analyzing the extent and influence of occupational licensing on the labor market. Discussion Paper No. 5505. Retrieved from http://ftp.iza.orgldp5505.pdf

Kleiner, M. M., & Wheelan, C. (2010). Occupational licensing matters: Wages, quality and social costs. DICE Report, 8(3), 29-35. Retrieved from http://search.proquest.com/docview/808565802?accountid=29653

Knox, J. B. (1941). Occupation and education in a democracy. *Social Forces*, *20*(1), 109. Retrieved from http://search.proquest.com/docview/1291026063?accountid=29653

Law, M. T., & Kim, S. (2005). Specialization and regulation: The rise of professionals and the emergence of occupational licensing regulation. *The Journal of Economic History*, 65(3), 723-756. Retrieved from http://search.proquest.com/docview/216443848?accountid=29653

Lu, N., & Zhang, Y. (2008). The changing role of the state vis-à-vis higher education in a global context. *Frontiers of Education in China*, *3*(1), 45-63. Retrieved from http://dx.doi.org/10.1007/s11516-008-

McQuaid, R. W. (2006). Job search success and employability in local labor markets. *The Annals of Regional Science*, *40*(2), 407-421. doi: http://dx.doi.org/10.1007/s00168-006-0065-7

Murane, R. J., Willett, J. B., Duhaldeborde, Y., & Tyler, J. H. (1995). How important are the cognitive skills of teenagers in predicting subsequent earnings? *Journal of Policy Analysis and Management*, *19*(4), 547-568. Retrieved from http://search.proquest.com/docview/222362220?accountid=29653

National Commission on Excellence in Education. 1983. *A Nation at Risk: The imperative for educational reform*. Washington, DC: Government Printing Office.

Obama $51 Billion Profit Off Student Loans. (2013, May). *Education News*. Retrieved from http://educationviews.org/obama-51-billion-profit-off-student-loans/

Ochsner, N. L., & Solmon, L. C. (1979). Forecasting the labor market for highly educated workers. *The Review of Higher Education, 2*(2), 34. Retrieved from http://search.proquest.com/docview/1308037248?accountid=29653

Pietrykowski, B. (2001). Information technology and commercialization of knowledge: Corporate universities and class dynamics in an era of technological restructuring. *Journal of Economic Issues, 35*(2), 299-306. Retrieved from http://search.proquest.com/docview/208853867?accountid=29653

Roksa, J. (2006). Does the vocational focus of community colleges hinder students' educational attainment? *Review of Higher Education, 29*(4), 499-526,422. Retrieved from http://search.proquest.com/docview/220851031?accountid=29653

Roksa, J. (2005). Double disadvantage or blessing in disguise? Understanding the relationship between college major and employment sector. *Sociology of Education, 78*(3), 207-232. Retrieved from http://search.proquest.com/docview/216490228?accountid=29653

Rosenbaum, J. E., & Binder, A. (1997). Do employers really need more educated youth? *Sociology of Education, 70*(1), 68-85. Retrieved from http://search.proquest.com/docview/216479036?accountid=29653

Scurry, T., & Blenkinsopp, J. (2011). Under-employment among recent graduates: A review of the literature. *Personnel Review, 40*(5), 643-659. doi: http://dx.doi.org/10.1108/00483481111154487

Shanahan, M. J., Miech, R. A., & Elder,Glen H.,,Jr. (1998). Changing pathways to attainment in men's lives: Historical patterns of school, work, and social class. *Social Forces, 77*(1), 231-256. Retrieved from http://search.proquest.com/docview/229866600?accountid=29653

Vedder, R., Denhart, C., & Robe, J. (2013). *Why are recent college graduates underemployed? University enrollments and labor-market realities*. Center for College Affordability and Productivity. Retrieved from http://search.proquest.com/docview/1314326193?accountid=29653