Collegiate Degree Value: A Global Perspective

Jeremy STRAUB
Department of Mathematical, Computing and Information Sciences
Jacksonville State University
700 Pelham Road N., Jacksonville, AL 36265, USA

ABSTRACT

A nation's educational system is a key driver of its economic success. The US educational system, thus, can be viewed as one of a number of key ingredients in the economic success and stature of the United States on the world stage. Globalization of higher education, however, is changing the playing field somewhat and presents both risks and opportunities for both American domestic and international institutions. Nothing less than the long term economic success of nations rests on the success of educational institutions understanding, adapting to and prospering in these changing conditions.

Keywords: academic globalization, degree value, education system evaluation, education economics

1. INTRODUCTION

There are few products or services that are as prevalently consumed as education. While the level, standards and nature of this education varies from country-to-country, education is one of the most ubiquitous products worldwide. A nation's developmental progress and even global standing is, to some extent, measured by the sophistication of its educational system. Perhaps the most prevalent comparisons surround the nature and success of nations' collegiate education systems.

As educational systems are a critical component of having an effective workforce and strong national economy, there is clearly no shortage of controversy surrounding the topic. Some proffer that the US education system is the envy of the world while others suggest that US education has lost its way. The truth, however, is a combination of the two. To correctly place the US collegiate educational system in a global context, we must examine the prevalence and economic value of education in various countries as well as the similarities and differences in educational systems.

2. DISCUSSION OF IMPORTANCE OF EDUCATION TO SOCIETY

Higher education provides significant economic benefit to its recipients and society-at-large. Baum and Ma proffer that college graduates are likely to have higher earnings and are more likely to receive health and retirement benefits. Further, they identify other benefits such as improved health and increased prosperity for graduates' offspring. [3]

Society benefits from lower levels of poverty and unemployment. Baum and Ma also note that college graduates contribute more taxes than non-graduates and have a lower level of usage of various social services. The benefits extend to the non-college-educated, with a positive wage level effect for non-graduates caused by graduate workforce presence. College graduates, in general, also have healthier lifestyles, exhibit greater civic participation and are more likely to volunteer and vote. [3]

Collegiate education produces the scientists and engineers that advance production technologies improving living standards. It trains the doctors and researchers that increase public health. Literature and the arts are enhanced by the presence of college-trained artists and those with the understanding to critique, interpret and refine artistic works. Humanity's basic understanding of the world and universe is enhanced by scientific study in all disciplines. There can be no doubt that the contribution of education (particularly at the collegiate level) to society is tremendous.

3. TRENDS IN GLOBALIZATION IN HIGHER EDUCATION

Altbach, Reisberg and Rumbley suggest that academia has always been, to some extent globalized. They note that universities have operated within a global community for some time. However, a number of changes have occurred which have created enhanced interest in globalization. [1]

First, they note that the advent of English as a language of science and education is a significant development. They liken this to the way Latin was used in scientific circles in Europe during the medieval period. This standardization facilitates communication and the mobility of students, instructors, research papers and such. [1]

Second, the effect of telecommunications and the Internet must be considered. The immediacy of communication possible via these mechanisms allows forms of education (eg, distance and online programs) and collaboration not previously possible. [1]

Third, Altbach, Reisberg and Rumbley proffer that a massification of education has occurred. This phenomena, they

suggest, has resulted in lowered educational standards as more of the population seeks and obtains degrees. Globally, enrolment in post-secondary education by the relevant age population has increased from 19% in 2000 to 26% in 2007. However, participation and the increase in participation varies widely from country to country. For example, the same period saw only an increase from 5% to 7% in lower-income-level countries. [1]

Forth, international program expansion and cooperation has occurred. The Bologna Process and Lisbon Strategy have attempted to align European programs and create a European Higher Education Area. Countries including Singapore and the United Arab Emirates have encouraged foreign universities to set up campuses locally. Combined programs and a variety of other arrangements have also become commonplace. [1]

Finally, countries have adopted immigration policies designed to attract foreign students. Altbach, Reisberg and Rumbley note that in 2006, more than two-and-a-half million students studied outside their country of residence; they project this number increasing to seven million by 2020. Attracting foreign students is seen to provide host countries with financial and competitive benefits. [1]

While many things have changed, Altbach, Reisberg and Rumbley note that a great deal of inequity in access to education still exists, both at a national and personal level. An individual from a prosperous family in a developed nation, they note, has greater chances of educational attainment than an individual from a less well-to-do family or a developing region. [1]

4. OVERVIEW OF UNITED STATES COLLEGIATE EDUCATION

Eckel and King note that while the United States educational system has roots in both British and German educational formats, it is distinctly different from both. American colleges and universities compete fiercely for students and research funding and are somewhat protected from government influence (due to Jeffersonian ideals relating to free expression and limiting government). [7]

The United States higher education system consists of approximately 6,500 institutions including 4,200 degree-granting colleges and universities and 2,300 vocational institutions. These institutions provided instruction to 14 million undergraduate and 2 million graduate students in 2001 and issued over 2.4 million degrees. [7]

American post-secondary institutions include 1,165 community colleges which enrolled 6 million undergraduates in 2001. There are also 629 public colleges and universities which award bachelor's and higher level degrees. There are also 1,567 private not-for-profit four-year-degree institutions, 324 for-profit four-year-degree granting institutions and 779 for-profit two-year-degree granting institutions. [7]

Academic accountability is not administered by the government in the United States, but instead by regional and national accrediting agencies. These accrediting agencies provide minimum standards but do not, generally, dictate how those standards are met or provide any mechanism to compare performance of accredited institutions. [7]

The demographic of the American college attendee has changed dramatically with three out of four students (in 2001) being considered as having non-traditional characteristics. Forty percent of American students, for example, are over the age of 25. [7]

American students are comparatively mobile. Eckel and King proffer that the non-traditional characteristics of many students and the conflicting demands associated with this necessitates this mobility. Further, American students interact with institutions in a market environment where schools compete to attract top students and students compete to gain admission to top schools. [7]

5. OVERVIEW OF AUSTRALIAN COLLEGIATE EDUCATION

Australian higher education is conducted via a system of 39 universities. Thirty-seven of these are public universities and two are private. At the bachelor's level, three styles of degrees are offered. General bachelor's degrees require three years of study. Professional degrees require four years. Honours degrees require three to four years; an additional year can be undertaken to facilitate entry to post-graduate study. Graduate education includes coursework and research masters degrees and doctoral level degrees. [8]

Australia also has a vocational education system. This system grants associate degrees, diplomas and advanced diplomas. The Australian Qualifications Framework provides some level of alignment between university and vocational programs. Australian universities train a significant number of overseas students (26% of the student population originated from overseas in 2005). [8]

6. OVERVIEW OF NEW ZEALAND COLLEGIATE EDUCATION

Post-secondary education in New Zealand is provided by thirty-three public institutions which include eight universities, twenty institutes of technology and polytechnics, two colleges of education and three wānanga (Māori tertiary educational institutions). [10]

New Zealand has experienced a dramatic increase in post-secondary education participation and a demographic shift. From 1996 to 2006, the number of participates increased by 82% and during the 2001-2006 period, half of the growth was from individuals over forty years of age. This growth, however,

has mostly been at the certificate level (with 103% increase). Bachelor's degrees and post-bachelor's-level degrees have increased at rates of only 10% and 18% respectively. Like with Australia, a framework exists to provide some correlation between university and non-university education. [10]

7. OVERVIEW OF INDIAN COLLEGIATE EDUCATION

India's education system suffers from a great divide. On one side, technical and management institutions produce graduates that have been responsible for attracting software, engineering and other work from all over the world. Unfortunately, very few are able to benefit from this. Adult illiteracy in India was at 42% in 2006 and Cheney, Ruzzi and Muralidharan proffer that only 20% of Indians attend secondary schooling. As with many other areas, those from socially and economically advantaged families have significantly greater opportunity for educational attainment. [5]

In 2003, India had 272 universities, 16 institutions established nationally or by states and 13,150 colleges. Cheney, Ruzzi and Muralidharan suggest that the politicized nature of Indian educational institutions and teacher hiring and promotion results in poor quality. In fact, they note that the institutions may provide as much or more value from selection as from instruction. The technology institutes, for example, admitted just 1.5% of applicants. The selection process, they note, is relatively corruption-free. [5]

In India, 80% of undergraduate education is performed by colleges that are affiliated with a university. Under this arrangement, the university develops a program and sets the standards for student evaluation. The college instructors simply deliver the applicable material with little room for adaptation or modification. [5]

Indian programs are criticized for covering outdated content and focusing on memorization. A bachelor's degree, while a requirement for many jobs, has little intrinsic meaning due to the wide variation in degree and teaching standards. Many students, thus, pursue post-graduate or professional qualifications to increase their employability. [5]

A significant number of Indians attend overseas educational institutions. India had 110,000 students studying overseas in 2006; 80,000 of those studied in the United States. Of those studying in America, 56,000 were pursuing degrees in science or engineering. [5]

8. DISCUSSION OF DEGREE VALUE

There are many different ways to value a college degree. A typical model for degree valuation compares pre and post-degree earnings and computes the additional earnings value to degree holders (taking in to account the earnings forgone and tuition costs to obtain the degree). Many, however, would argue that this model is incomplete. A more complete model requires consideration of the experiential and social values of a degree as well as the economic ones.

Experiential value can be loosely defined as the value that accrues to a degree holder from the experiences that he or she has during the pursuit of the degree. This includes the intrinsic value of learning as well as the broadening-of-horizons that may occur due to academic breadth requirements. A degree program may help a student find a career path of interest and participation in shared interests forms friendships and builds contacts that can have economic and non-economic value to the student. Experiential value, thus, is undeniably present – and it may differ between particular degree programs, program types and national degree frameworks. It is, unfortunately, difficult to quantify.

Social value deals with the externality created by education. It is a recognition that others beyond the two parties involved in the education transaction (student and institution) benefit from educational attainment. Specifically, it is an understanding that an educated population has greater capability to deal with various social issues. Further, educated society members may be better informed voters and more concerned citizens. Again, these benefits may vary between academic pursuits and the locations that these pursuits are conducted. They are, also, difficult to specifically quantify.

9. SCARCITY AS A VALUE DRIVER

A rudimentary economic model would support the notion that scarcity creates value. Some have commented that the prevalence of colleges (including numerous ones that have no or extremely minimal entrance requirements) has diminished the value of a collegiate degree. In the United States, 24.4% of those aged 25 or older have at least a bachelor's degree. An additional 27.4% have an associate's degree or have taken some collegiate courses. In Australia, a similar 25.59% of those between 25 and 64 have a bachelor's degree or higher. Australia even more dramatically surpasses the United States in the 25-34 age group where 34.2% of Australian's have a bachelor's degree compared to 27.5% of Americans. New Zealand falls in the same neighborhood: 22% of those 25 to 64 have earned a bachelor's degree (29.3% of those between 25-34). The trend in both Australia and New Zealand is strongly towards higher levels of degree holders. Australia, for example, increased from 19% to 25.59% of the population between 25 and 64 holding a bachelor's degree over just ten years. However, both of these countries, in the author's experience, tend to hold collegiate degrees in higher esteem. The recent historic relative scarcity of degrees combined with the absence of perceived ultra-low-quality programs is perhaps responsible for the greater respect provided to degree holders. [2,4,9]

Furthering the notion that scarcity isn't strongly related to perceived value is the case of India. Only 7% to 13% of "young Indians" (not the population in general) are enrolled in collegiate study [6]. However, even with the relative scarcity (especially

compared to the United States, Australia and New Zealand), these degrees are not considered (generally) as valuable. For example, of those studying in the IT field, the NASSCOM industry association proffers that 50% are completely unemployable and an additional 25% would require "extensive further training" [6]. This is confirmed by this author's personal discussions with various hiring managers in India. Clearly, thus, program quality is highly relevant and scarcity's effects are less pronounced.

10. PROGRAM STRUCTURE AS A VALUE DRIVER

Another possible consideration is the nature of the degree program. Programs can be classified in to two quasi-distinct groups. Some programs (such as many in the UK, New Zealand, Australia and India) seek to impart only subject and subject related knowledge. Others (like most in the United States) seek to provide a well-rounded 'liberal arts' education incorporating studies in a major topic and other (in many cases unrelated or minimally related) topics. The subject-focused programs can be completed more quickly; however, there does not appear to be any strong correlation between either type of program structure and higher value.

11. IN-SITU OBSERVATIONS

The author's personal experience in the United States, Australia, New Zealand and India as well as procurement experience in Asia has provided significant exposure to the product of these areas' educational experience. While insufficient space exists to fully describe these observations in this paper, two key points of qualitative observation bear mentioning.

First, the relative prestige of bachelor's (and higher) degree holders is quite different in Australia and New Zealand as compared to the United States. Particularly in New Zealand (and to a lesser extent in Australia) possession of a bachelor's degree is prized and frequently advertised on business card and such. In the United States, on the other hand, a bachelor's degree is the basic price-of-admission for many jobs and, while listed on one's resume, is not promoted to the same extent. In India, bachelor's-level experience is looked at as having minimal benefit. These degrees infrequently provide complete preparation for entry in to the workforce. As an antidotal example, many managers in India are not at all surprised to find individuals with a technical bachelor's degree working in unskilled occupations such as working as a taxi driver.

Second, the perception of foreign degrees varies somewhat from country-to-country. In the United States, foreign degrees (particularly from many Asian and Indian universities) are not given much weight. Conversely, Australians and New Zealanders look favorably upon degrees from abroad – particularly from the United States and Europe. Overseas degrees are also viewed favorably in India – though many believe that Indian domestic degrees are gaining in stature. This difference in perception may be attributable to the perception of particular programs, in various particular instances. However, there are clearly differences in perception from country-to-country.

12. PROBLEMS FOR DEVELOPED ECONOMIES AND INSTITUTIONS THEREIN

If the skills that universities in developing economies are providing are approaching those provided by US and European institutions, it would seem reasonable to presume that wages will be pressured by market forces to rise in developing countries and fall in more developed ones until a parity is reached. There are, of course, factors that will prevent a complete equality such as the cost of transport and cost of living differences that are factored in to wages. However, given the fact that much knowledge-centric work is highly portable – or that individuals themselves have some level of mobility to areas where workers are in demand – it would seem that a dramatic shift is approaching. Those that stand to lose from this and seek to preserve the status quo would be well served to determine if there is some additional value that can be provided by educational institutions in developed countries that cannot be easily duplicated or leap-frogged by those in developing economies. Countries must justify their higher wage levels and institutions must justify their greater expense compared to their developing economy counterparts.

Whatever value higher-wage countries degrees may have, it is all but inevitable that this will erode over time. There are already signs of this. India, for example, boasts 5 top 400 schools. China now has a school in the top 50. This is particularly auspicious given that the ranking metrics are developed from a western perspective and may thus favor western schools. The fact that major corporations are shifting research and development activities to both countries is clearly a testament to their collegiate education systems as well. [13]

13. OPPORTUNITIES FOR DEVELOPING COUNTRY INSTITUTIONS

The increasing perceived-value of foreign degree programs presents significant opportunities for institutions located in low-cost areas. These institutions can benefit from their high-perceived-value and low costs in four ways. They can produce degree holders for employment in their local and international markets, they can offer on-their-site education to individuals from higher-cost markets, they can create e-learning and other distance programs to offer to students in higher-cost markets and they can provide instructional services (perhaps as part of a joint-initiative) for institutions in higher-cost areas.

A degree from a well-respected institution can ease the movement of a worker in to a foreign market. In some cases,

the degree may be required for or facilitate visa application. It also will likely be a key decision influencer for firms as part of their hiring process -- particularly for recent graduates. Foreign work experience, similarly, can be valuable.

Thus, individuals seeking lower-cost, high-quality education may choose to enroll at a degree program in a low-cost area. Not only does the individual benefit from reduced costs, he or she gains experience in the local culture. Many firms (particularly multinationals) view foreign experience as valuable and, thus, a degree from a high-perceived-value overseas program may have additional benefit.

The advent and dramatic growth of e-learning provides another opportunity for overseas providers. Institutions whose degrees are of high-perceived-value can offer online degree programs to students in higher-cost areas. Also, they may be able to offer single courses for transfer to other institutions.

Finally, an institution (or commercial provider) in a low-cost area may partner with a college or university in a high-cost area to provide instruction services. This instruction could be provided via e-learning mechanisms, video conferencing or other mediums [e.g., 11, 12]. The provider intuition (or company) is able to generate local employment (and potentially employment opportunities for local graduates of the institution) and revenue from the arrangement while the higher-cost-area institution benefits from reduced instruction costs. Further, the dramatically lower costs may facilitate lower class sizes and additional personalized attention for students.

14. AN ATTRITION MODEL FOR DEVELOPED NATIONS

Some suggest that globalization should not be feared by those in developed markets. Wildavsky, for example [see 14, 15], proffers that there is no limit on the amount of learning that can occur and thus educational gains in one country don't necessitate losses in others. In fact, gains by overseas educational institutions will likely be beneficial to students (who may benefit from lower prices driven by market competition and lower-cost instruction providers) and human knowledge in general.

However, market forces created by cost differentials will likely not be particularly beneficial to developed (higher-cost) nations. The foundations of an attrition model, thus, can be developed. This model must be considered at two levels: institutional and national.

Institutions risk declining student enrolments (particularly in e-learning programs where close proximity is of minimal benefit). They may lose some of their high-fee-paying overseas student base (who decide to obtain education in their own or an alternate market) and may also suffer cost pressures from and even the loss of domestic students to overseas institutions.

Research grants and other funding sources may also be impacted, if lower-cost institutions can capture them instead. These declining enrolments and research funds may diminish the reputation of the university over time, resulting in yet lower enrolments and research funds. This may create a downward spiral effect for the institution.

On the positive side, institutions may benefit from lower-cost labor available in developing economies. These institutions may decide to hire instructors to conduct classes remotely via telepresence (for on-campus courses) or various distance learning techniques. Further, this may have the effect of driving down educator wages in developed countries, further benefiting institutions.

From a national perspective, education is a key wage-level influencer. If high quality education is available in lower-cost regions, there will be little (other than existing deployed capital and transportation costs) to support the higher wages in developed countries. Companies will, in pursuit of their own best interests, locate their research and development facilities in locations where they can maximize benefit and minimize cost. If benefit is roughly equal (due to having access to similarly qualified staff) then the cost differential will be a key influencing factor. Over time, wages in developed countries may be forced downward by market effects.

15. COMBATING ATTRITION

There is no silver bullet for combatting the attrition previously discussed. Left completely unchecked, a basic market model would suggest that educational costs would decline as more and more low-cost entrants with quality programs enter the market. India, for example, had costs-to-student (inclusive of tuition, lodging, transportation and supplies) ranging from $810 to $1,487 for bachelor's degree students in 2001-02 – a small fraction of what students in a developed country like the United States would pay. If these programs (or even some of these programs) are of sufficient quality, students that might have studied in developed countries may choose to study in India instead. While they would incur transportation costs to and from India (perhaps even several times per year due to breaks and such), their total cost would be less than the costs of virtually all United States universities (absent a complete scholarship, significant cost-transference from living with parents, or such). Over time, once all of the low-cost entrants have entered and begun serving the market, costs would be expected to start to rise. This model, however, is overly simplistic. [5]

The model neglects, for example, the fact that a variety of factors are considered beyond costs in making a college selection decision. The first, and likely the most influential, is the fear and uncertainty factor. Many parents would not feel comfortable having their son or daughter studying in India or

other low-cost locations due to a lack of familiarity, distance and fears founded on the occasional terrorist attacks in these regions.

Second, the model fails to consider job placement. Presuming that the student hopes to seek employment in the developed country (and not the low cost location), a local university is likely better equipped to provide placement assistance.

Finally, differences in primary and secondary education systems may make it more difficult for students to transition to post-secondary institution in other countries. This may provide additional incentive to remain in one's home country.

In addition to the above, attrition can be combatted by the introduction of added-value by high-cost-location institutions. For example, these institutions can involve students in ground-breaking research and provide other opportunities that are not available in low-cost-region institutions.

16. CONCLUSION

The value of an institution's degree is clearly more than the economic benefit to its graduates. Educational institutions have an important role in personal advancement as well as in the advancement and comparative strength of nations. While the United States is currently a leader in collegiate education, there is no guarantee that this situation will persist. Educational advancements overseas may benefit humanity-in-general through advances in technology and science; however, this benefit may not extend directly to the United States economy and educational institutions.

For American institutions to remain strong and the American economy to recover, it is necessary for the US education system to provide value over-and-above education systems in developing countries. Some of this value already exists. It takes the form of placement competency in the local economy, a spirit of innovation and a tradition of research excellence. However, more value sources are needed to ensure the future prosperity of the American collegiate education system and the American economy at-large.

17. REFERENCES

[1] Altbach, P. G., Reisberg, L., & Rumbley, L. E. (2009). *Trends in Global Higher Education: Tracking an Academic Revolution.* Paris: United Nations Educational, Scientific and Cultural Organization.

[2] Australian Bureau of Statistics. (2010, November 24). *62270DO001_201005 Education and Work, Australia, May 2010.* Retrieved June 21, 2011, from Australian Bureau of Statistics: http://www.abs.gov.au/AUSSTATS/subscriber.nsf/log?openagent&62270do001_201005.xls&6227.0&DataCubes&105740D90D2103A3CA2577F20010B0C9&0&May 2010&08.12.2010&Latest

[3] Baum, S., & Ma, J. (2007). *Education Pays: The Benefits of Higher Education for Individuals and Society*. College Board.

[4] Bureau, U. S. (n.d.). *Educational Attainment by Sex: 2000.* Retrieved June 20, 2011, from American FactFinder: http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_00_SF4_QTP20&prodType=table

[5] Cheney, G. R., Ruzzi, B. B., & Muralidharan, K. (2005). *A Profile of the Indian Education System.* National Center on Education and the Economy.

[6] *Creaking, Groaning: Infrastructure is India's biggest handicap* . (2008, December 11). Retrieved June 21, 2011, from The Economist: http://www.economist.com/node/12749787?story_id=12749787

[7] Eckel, P. D., & King, J. E. (n.d.). *An Overview of Higher Education in the United States: Diversity, Access, and the Role of the Marketplace*. Washington: American Council on Education.

[8] Group of Eight Australia. (n.d.). *Welcome to the Group of Eight.* Retrieved August 6, 2011, from The Group of Eight Australia: http://www.go8.edu.au/students/the-australian-higher-education-system

[9] Ministry of Social Development. (2011). *Educational Attainment of the Adult Population.* Retrieved June 21, 2011, from 2010 The Social Report: http://www.socialreport.msd.govt.nz/knowledge-skills/educational-attainment-adult-population.html

[10] New Zealand Ministry of Education. (2006). *OECD Thematic Review of Tertiary Education: New Zealand Country Background Report.* Wellington: New Zealand Ministry of Education.

[11] Restrepo, J., & Trefftz, H. (2005). Telepresence Support for Synchronous Distance. *Proceedings of the ACM Symposium on Virtual Reality Software and Technology.* Monterey: Association for Computing Machinery.

[12] Roussos, M., Johnson, A., Moher, T., Leigh, J., Vasilakis, C., & Barnes, C. (n.d.). *Learning and Building Together in an Immersive Virtual World.* Retrieved July 20, 2011, from University of Illinois at Chicago: http://www.evl.uic.edu/tile/NICE/NICE/PAPERS/PRESENCE/presence.html

[13] US News & World Report. (2010, September 21). *World's Best Universities.* Retrieved June 21, 2011, from US News & World Report: http://www.usnews.com/education/worlds-best-universities/articles/2010/09/21/worlds-best-universities-top-400-

[14] Wildavsky, B. (2010, May 14). *No Barriers to Free Trade in Minds.* Retrieved August 6, 2011, from Brookings Institution: http://www.brookings.edu/opinions/2010/0514_global_university_wildavsky.aspx

[15] Wildavsky, B. (2010, April 5). *The Great Brain Race: How Global Universities Are Reshaping the World.* Retrieved August 6, 2011, from Brookings Institution: http://www.brookings.edu/interviews/2010/0405_globalization_wildavsky.aspx