India’s Higher Education System

Working Paper Series:
Martin Prosperity Research

Prepared by:
Kevin Stolarick, University of Toronto

April 2014

REF. 2014-MPIWP-003
Abstract

From at least the 5th century CE, India has been home to institutions of higher education. When India achieved independence in 1947, it had 20 universities and 500 colleges. It now boasts one of the largest higher education systems in the world with over 42,000 institutions of higher learning. This paper identifies and discusses five different dimensions across which the higher education system in India can be considered. These dimensions are governance, financing, level of degree awarded, program differentiation, and language. Along with definition and specification of these dimensions, some of the key challenges facing higher education in India are presented. This paper only focuses on the system of ‘higher’ education which is supported and regulated by the two senior levels of government, which are the central or federal government and the state governments. The current challenges include both quantity and quality of education, availability of higher education for traditionally under-represented groups, and moving India from ‘mass’ to ‘universal’ access. A brief summary of the 12th (current; 2012-17) Five-Year Plan for education depicts the Central government’s approach to these issues.
Introduction

Founded in the fifth century CE, Nalanda in the India state of Bihar is a place that is believed to be India’s oldest university – one created well before universities in Europe. At its peak, Nalanda is estimated to have been home to over 10,000 students from across Asia who came to study Buddhism, law, literature, and philosophy (Najar, 2014). Amartya Sen, Harvard economist and Nobel laureate, is a key player in building a new university at Nalanda with the intention of bringing globally modern research and teaching practices to India (http://www.nalandauniv.edu.in/abt-vision.html). It has not gone particularly well (Najar, 2014).

The higher education system in India has successfully addressed many challenges and difficulties, but it still faces many more. In order to provide context for these challenges, understanding the system and how higher education is organized is necessary. However, like India itself, the higher education system isn’t one system and isn’t something that can be neatly organized and categorized along one or two dimensions (Sen, 1982). The current system is the result of a complex interplay of national and state aims, plans, and execution intermingled with desires for individual and collective economic and social development and layered with concerns of equity and access (Sharma, 2013). Understanding the higher education system of India requires an understanding of the various dimensions across which that system could be meaningfully described. This paper sets out to do just that.

The paper will proceed with a brief synopsis of the history and growth of higher education in India over the past several decades. This will be followed by information on the material and data sources that have been used to identify, define, and develop the various dimensions that can be used to describe the system of higher education in India. Those dimensions and information about them and the various institutions measured according to each dimension are then presented. This is followed with an overview of some of the significant challenges that are impacting the entire system. Finally, the Central government’s approach to these challenges as outlined in the current (12th) five-year plan will be discussed. It is important to note that this paper does not address all post-secondary education or higher-secondary education in India. The focus of this paper is only on “higher” education, the system of institutions and organizations that deals with the awarding of diplomas/certificates and degrees at both the undergraduate and graduate level (identified as graduate and post-graduate in India). These institutions fall under the purview of the Central (federal) and state governments.

Growth of Higher Education in India

At independence in 1947, India had 20 universities and 500 colleges. These were the legacy of the British, were mostly created in the mid-nineteenth century, and were solidly based on an examination based approach to universities, as was the case with the University of London, with an ‘Anglicist’ orientation (Agarwal, 2007). By 2013, India had 727 universities, over 35,000 colleges, and nearly 13,000 ‘Stand Alone’ institutions (World Bank, 2010; University Grants Commission, 2013; Choudaha, 2013). Figure 1 shows the total number of universities and colleges across India from 1947 to the present day. As can be seen in the figure, the number of higher education institutions grew only modestly through the 1990 (Kaul, 1974), and grew slightly faster through 2005. Over the subsequent ten years, both the number of colleges and the number of universities nearly tripled.
Figure 2 shows that total enrolment in higher education followed a similar pattern (University Grants Commission, 2012; University Grants Commission, 2013b; Agarwal, 2007). Total enrolment nearly doubled between 1991 and 2001 and then more than doubled again between 2001 and 2011. As of 2013, total enrolment in India stood at just over 23.6 million people.
Background Material

Document inspection was used to identify and define the various dimensions that could be used to differentiate the Indian system of higher education. A wide variety of different material from many different sources, official, unofficial, and academic, was collected. The categories and descriptions used across those sources were then examined to identify both similarities and differences. While not always in complete agreement, the various sources of information did not disagree with each other – often related but not identical information would be presented in slightly different ways. Both qualitative, descriptive data and quantitative, statistical data were collected and examined. Eventually, patterns began to emerge from all of the various sources. Those patterns were used to form the dimensions discussed below. The emphasis was on documenting dimensions that offered a way to differentiate the various components of the higher education system. In some cases, subcategories were identified within a given single dimension, for example the types of universities within level of degree awarded, because the information was only relevant to part of that dimension. These were created as subcategories because they did not offer any significant differentiation with regard to the other identified dimensions. Eventually, five key dimensions were identified. They are discussed below. First, information on the primary sources of data used to identify the dimensions is discussed. These lists are not meant to be exhaustive. The academic articles and all other material listed in the references section of this paper are the full list of all material referenced during the analysis phase of this research. However, the items listed below do account for a very significant majority of the material used in allowing the various dimensions of the system to emerge.

General Sources of Information

Some background, historical, planning, and other useful material on the higher education system in India was gathered and collected from three websites:

- Ministry of Human Resource Development
  - http://www.mhrd.gov.in/higher_education
  - http://www.mhrd.gov.in/documents/term/82
  - http://mhrd.gov.in/statistics_data

- University Grants Commission
  - http://www.ugc.ac.in
  - http://www.ugc.ac.in/page/Other-Publications.aspx
  - http://www.ugc.ac.in/oldpdf/alluniversity.pdf
  - http://www.ugc.ac.in/centraluniversity.aspx

- All India Council on Technical Education
  - http://www.aicte-india.org/businessintelligenc.htm
  - http://www.aicte-india.org/einp.htm
  - http://www.aicte-india.org/statisticuniversities.htm

Additionally, material and government provided background and definitions came from:

• *Sixty Years of the University Grants Commission*, R. Sharma (2013)
• “Higher Education in India: Twelfth Five Year Plan (2012-2017) and Beyond,” FICCI Higher Education Summit and Ernst & Young (2012)

**Data Sources**
Statistical, categorical and other data was primarily collected from official government sources. Alternative sources were also identified and used as much as possible, but generally these alternative sources were the result of summarizations or other processing against government sources.

The primary quantitative data sources referenced were:
• “Higher Education in India at a Glance,” University Grants Commission (2012)
• “Higher Education in India at a Glance,” University Grants Commission (2013)
• “All India Survey on Higher Education 2011-12 (Provisional),” Department of Higher Education (2013a)
• “Education (all levels) profile – India,” UNESCO Institute for Statistics (2013)

In 2003, Aggarwal commented extensively on the needs and challenges of statistics and data collection on education in India (Aggarwal, 2003). While likely not entirely driven by this critique, the “All India Survey” mentioned above included much needed and new data on the state of higher education in India. However, many of Aggarwal’s concerns about the limitations and inadequacies of available education data remain accurate ten years later. So, while the dimensions created are based on and reflect the currently available data, as with all data, it is not perfect. Variations in definitions and collection methods can result in unintended longitudinal data change. Missing or uncollected data could dramatically change interpretations or the way in which specific dimensions emerged from all the information analyzed. The data has gotten much more precise and detailed over time, but at the same time, the total population over which the data must be collected has grown nearly exponentially.

Every effort has been made to identify and resolve any discrepancies, and when possible, data supposedly covering the same piece of information but reported in two or more sources but over different time periods has been matched to ensure consistency. When two sources report exactly the same number for something, it is because both got that number from the same original source or one of the two was the original source for the other. Often, one source would report highly detailed information but only for an older time period. The most recent data would only be available in aggregate. When that happened, the share breakdown from the earlier period would be applied to the latest numbers. Typically, the span would only be a few years so the assumption of equal shares is not a heroic one.

For each of the dimensions presented below, charts and tables of numbers are presented. For each, specific sources are identified as appropriate. Whenever possible, these numbers represent data on the higher education system in India for the most recent year available, usually 2013. When the numbers are from a different year, it is noted. Most of these numbers do not have one single source. Rather,
they are a “best guess” from a variety of different numbers that are supposed to be the same but are from different sources (most listed above). As with many things in India, they are *jugaad*.

**Dimensions of Higher Education in India**

The literature and document examination resulted in five different dimensions across which the higher education system in India could be differentiated. Those dimensions are: (1) governance, (2) funding, (3) level of degree awarded, (4) program differentiation/specialization, and (5) language. Each is described and presented separately below. Other dimensions are clearly possible. In some cases, they are presented as subcategories within a dimension, especially when those categories don’t describe the entire higher education system. Although each of these dimensions is discussed independently in some of the qualitative and quantitative reference materials, few completely describe each dimension as presented here. Most of the sources discuss only one or two of these dimensions or do so in a less complete way. This analysis represents the first time that these five dimensions are discussed together. Nevertheless, the available data only support a very limited analysis across these multiple dimensions.

**Governance**

Constitutionally, education is one of the responsibilities that is to be shared between the Central Government and the States. Governance of higher education in India puts every institution’s oversight in one or more of three categories: central, state, or private (Kaul, 2009; Singh, 1993; Singh and Sharma, 1988; Haggerty, 1969). Figure 3 shows the total number of institutions by governance (Choudaha, 2013; University Grants Commission, 2014). Nearly two-thirds of all institutions are private. By law, all educational institutions in India must be not-for-profit. To be designated as private, the educational institution must be created under the *Societies Registration Act of 1860* or be a public trust or company as defined by the appropriate legislation of 1956. This does not mean that private institutions do not have relationships with for-profit corporations, many do (Gupta, 2004; Gupta, 2008). But, the institution itself must have a separate charter and not-for-profit mission (Kingdon, 2007).

Just over one-third of all higher education institutions are controlled by the various state governments. The degree and level of control varies across the 28 States, six Union Territories, and the Delhi National Capital Territory according to each’s individual legislation and regulatory frameworks. However, most develop consistent regulations through coordination of all the State Education Ministers which is often facilitated by the Centre’s Ministry of Human Resource Development. Only one-half of one percent of all higher education institutions are directly managed by the Central Government. These 244 institutions are primarily universities (Sharma, 2013; University Grants Commission, 2014). Some are also research institutes and other university-like organizations (Udgaonkar, 1993). Although they are small in number, most are very powerful institutions as will be seen.

*Jugaad* is originally a Punjabi term, now used widely across India. Its literal translation is “makeshift” or “contraption” – it is used to describe something that is “good enough”. It might not be optimal, but it works. Jugaad is often also used to indicate a creative solution to a problem created with limited resources. Both definitions seem appropriate in this case.
Funding
Funding of higher education is typically a shared responsibility between the top two levels of government with the students bearing some of the cost (Tilak, 1993a; Tilak, 1993b). However, the balance has shifted over time. In the early 1950s nearly half of the cost was born by fees, and by 1976 that had been cut in half with the governments picking up the difference along with compensating for decreasing private donations (Azad, 1976). During the 1980s, combined government expenditure on higher education saw an average annual increase of over 7%, but from 1980 to 2005, total government spending per student has remained relatively flat on an inflation adjusted basis (World Bank, 2010; UNESCO Institute for Statistics, 2013). However, given the dramatic increase in the number of students, the amount spent by the government has seen similar dramatic increases (ibid). Studies that have considered student loans as a way to help manage government expenditure on higher education have found that loan schemes are more likely to create significant adverse outcomes and that diversified alternate funding sources should be identified (Tilak, 1992; Rani, 2004). A suggestion has been made that the fee and subsidy structure for higher education could be modified so as to have those who are less qualified (score lower on their entrance exams) pay more for the college or university of their choice (Tilak, 1999; Tilak and Varghese, 1991).

Approximately, 81% of all government funding for all education flows from an education department or ministry, either at the Central or State level. The remaining 9% is funding from other departments (World Bank, 2010). Across India, total educational spending accounts for 3.8% of GDP or 13.5% of total public expenditures (ibid). The suggestion has been made that India should target 6% of GDP for education (Prakash, 2007), but it is not clear that the government shares that ambitious goal. Spending on higher education is approximately one-third of all education spending. At 1.22% of GDP, higher education accounts for 4.3% of all public expenditures (World Bank, 2010). In general, relative to other
developing countries, both the level of spending and the level of overall subsidies provided were found to be neither too high nor too low and that subsidies have a generally progressive distribution (Tilak, 2004).

The alternative to considering spending is to consider the individual and societal returns from an investment in education. If the returns are sufficiently high, then increased spending will directly result in increases in individual wealth and GDP more than large enough to compensate for the increased investment. Essentially, the “virtuous cycle” of investing in education would create substantial development (Tilak, 2003). And, while current plans and recent increases in spending and enrolment reflect a strong desire to kick-start this virtual cycle, earlier research suggests that investment in education does not generate strong returns in India (Gounden, 1967; Tilak, 1997). Although thirty years apart, both studies reached similar conclusions. Unfortunately, another nearly 20 years has passed and no more recent study is available. During the 1990s in India, as in other countries, significant reforms in funding higher education were enacted (Johnstone, et al., 1998).

When differentiating higher education institutions based on funding, the categorization looks very similar to governance approaches: (1) Central, (2) State, and (3) Private. However, funding does not map directly to governance.

Central funding is mostly provided by the University Grants Commission (UGC) which is part of the Department of Higher Education in the Ministry of Human Resource Development (MHRD). However, that is not the only mechanism by which money from the Central Government flows to institutions. Some institutions are funded directly by MHRD or other ministries. The UGC funds 38 Central universities and the Indian Institutes of Technology (IITs) along with 123 universities that are under State jurisdiction. The UGC can provide some funding to private institutions. MHRD and other ministries generally provide funding for institutions managed by the Centre, but they too can provide funding to institutions under other jurisdictions.

The state governments do not provide any significant funding to institutions controlled by the Central Government, but partnership and other arrangements do happen. Generally states either co-fund institutions with Central support, which can range from 10% to 90%, or fully fund institutions on their own. State funding is most often provided for institutions under the jurisdiction of that state. But, over 20% of private institutions receive some government funding. These “aided” private institutions mostly receive money from a state with varying degrees of their expenses being covered by the “aid” but can also receive grants and other funding from the UGC.

The roughly 80% of private institutions that are not “aided” have to rely on non-governmental sources of funding. Typically, as not-for-profit organizations, student fees, tuition, and donations must be sufficient to cover expenses and only leave a small residual for contingencies. However, some of the private institutions are associated with corporations who underwrite the higher education institution for philanthropic reasons, tax purposes, and to generate a sufficiently trained and locally available workforce. Many private institutions are also supported by religious or cultural organizations which are then responsible for raising funds sufficient to keep the institution operating.
Level of Degree Awarded

The higher education system of India starts after secondary education. Secondary education in India provides students a ninth and tenth year of education. This is followed by two years of senior secondary education which can either be vocationally or academically focused. After completing twelve years of primary, secondary, and academic senior secondary education, individuals who wish to pursue further higher education have two choices, diploma or degree. A diploma, sometimes also called a certificate, generally requires two years to complete. A degree, referred to as graduate studies but equivalent to a typical undergraduate degree, typically requires three years to complete. After completing a degree, the student could continue with post-graduate studies which would be a professional master’s degree (2-3 years) or masters of philosophy (1-2 years). Following either of those, typically the M.Phil., the student could spend another 2-5 years and earn a PhD, which is categorized as a research degree. One other alternative is that after obtaining a degree, rather than continuing with post-graduate studies, the student could choose to pursue a post-graduate diploma or certificate. These are most often for professional studies and take from 1-3 years to complete.

Institutions can be differentiated by the type of degree that that are able to award – diploma or degree. Institutions that offer diplomas can offer standard diplomas and/or post-graduate diplomas. Some institutions specialize on one or the other, and some offer both. Those that offer only diplomas are categorized as ‘Stand Alone’ institutions and are counted together (Planning Commission, 2012). Only universities can award degrees. This includes graduate, post-graduate (masters), and research (doctoral) degrees. However, an institution can be separate from a university, and its students can still earn a degree. These are the colleges. A college can either by a constituent college which is directly maintained by a university, or a college can be affiliated with a university. In either case, the college must have an official relationship with a university, and the degree awarded is conferred on the student by that university. Some colleges can be given autonomous status which allows them to confer degrees under their own name but still over the seal of an affiliated university. Figure 4 shows the breakdown of higher education institutions across India by ability to award diplomas or degrees. Although only comprising 1.5% of the total, the degree-awarding universities are actually responsible for nearly three-quarters of all institutions across India.
Figure 4 – Institutions by Award

Figure 5 – University Enrolment by Level of Study

Figure 6 – College Enrolment by Level of Study
The 727 degree awarding institutions are all universities. Figure 5 shows the breakdown in enrolment across the universities by level of study (University Grants Commission, 2012). Two-thirds are pursuing a degree while roughly one-quarter are completing post-graduate research. Roughly one in twenty university students are working on a PhD while nearly the same number are actually working on a diploma or certificate. While universities are the only place that can award degrees, they can also offer diplomas and post-graduate diplomas as well. Figure 6 shows the breakdown across the 35,609 colleges. Nearly 90% of all college students are pursuing a degree while the other 10% are doing post-graduate (masters) studies. There is a very small number of students at colleges who are pursuing a research, PhD, (0.2%) or a diploma (0.5%). A detailed breakdown for the 12,678 Stand Alone diploma-granting institutions is not available. Figure 7 shows the division of total enrolment, some 23.6 million students, by level of study. Roughly three-quarters (17.5m) are getting a degree; 15% (3.5m) are pursuing a diploma; 10% (2.5m) a post-graduate degree; and 0.7% (161,000) are working on a PhD.

![Figure 7 – Total Higher Education Enrolment by Level of Study](image)

Universities can also be differentiated across a variety of different categories. These are shown in Table 1. Universities can be divided by the level of government responsible for their oversight and regulation – Central or State. For universities under the purview of the Central Government, a further division into five subcategories can be done. First are the Central Universities. Established to have at least one per state, these are the universities specifically created by the Centre. They provide much of the support for the colleges across the country. Second, if an institution essentially behaves like a university or becomes a university but wasn’t specifically created, the Central Government can, at the advice of the University Grants Committee, declare that institution to be a “deemed university”. As such, the institution is then considered to have all the powers and responsibilities as a Central University. Currently, 110 institutions have become deemed universities – 39 are government created and supported institutions, and 91 are private, not-for-profit institutions. India also has the 40 Institutes of National Importance. The IITs
(Indian Institutes of Technology) have been created specifically by national legislation. India is currently in the process of creating another 20 such institutes that will be focused on information technology, the IIITs (Indian Institutes of Information Technology). Finally, the Central Government has identified and oversees another 27 institutions that can award degrees but do not fit any of the other categories.

Universities can also be under the purview of the State Governments. The three subcategories are shown in the table. State Universities are like Central Universities but are created by a State Government under appropriate controlling legislation. Additionally, four state universities were created by specific legislation for that institution. While a State University is chartered under legislation that allows for the creation of multiple universities, a State Legislated university is specifically created under law. It parallels the Central University/Institute of National Importance arrangement for the Centre. While State Universities are created, managed, and funded by a State Government, a university can also be created as a separate private, not-for-profit institution that is regulated by the state. As mentioned earlier, both the Centre (mainly through the University Grants Commission) and the State Government can provide funding to all three subcategories of state universities.

<table>
<thead>
<tr>
<th>Governance</th>
<th>Description</th>
<th>Total Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central</td>
<td>Central University</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>“Deemed” University</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td>Government</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td>Private</td>
<td>71</td>
</tr>
<tr>
<td></td>
<td>Institutes of National Importance (IITs)</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>Other University Level Institutions</td>
<td>27</td>
</tr>
<tr>
<td>State</td>
<td>State Universities</td>
<td>308</td>
</tr>
<tr>
<td></td>
<td>State Legislated</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>State Private</td>
<td>173</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>727</td>
</tr>
</tbody>
</table>

Table 2 shows the subcategories for both colleges and stand alone institutions. Very few colleges and stand alone institutions are administered by the Central Government and most of those are the result of historical or other special circumstances. Colleges fall predominantly under the purview of the States. The Centre has more control over the universities which, again, are the only institutions that can award degrees. So, from this perspective the two-tiered nature of the system is revealed. About 42% of colleges are managed and maintained directly by the State while nearly 58% are private institutions that are regulated as private institutions by both Central and State Government regulations. The States are also directly responsible for about 17.5% of stand alone (diploma) institutions, but the stand alone institutions are mainly (82.3%) private.

Finally and worth special mention are the currently, specifically identified 22 “fake universities” (one of the 22 is contesting this designation in the courts). The University Grants Commission published this list. Because only universities can confer degrees, the identification and publication of such a list helps students in making informed decisions.
Table 2 – Types of Colleges and Stand Alone Institutions

Figure 8 shows the entire system of 49,014 higher education institutions across India by both governance level and degree awarded. Figure 9 separately breakdowns institutions by degree awarded for each governance level. The results are rather striking. The number of Central institutions is very small relative to the numbers of other levels, but they are very important. Each level of governance has a primary but not exclusive focus. Central institutions are primarily degree awarding while State and private institutions are colleges. While mostly focused on colleges, private institutions are also the greatest source of diplomas. States have a much greater focus on the colleges but still have a significant number of diploma awarding institutions. The combination of dimensions of governance and award type shows both the specialization and generalization of the Indian higher education system.
Program Differentiation/Specialization
The higher education system can be differentiated programmatically in two ways. The first is to consider the level of specialization within an institution. The IITs are an excellent example of a collections of institutions, specified to be of ‘national importance’ that have a very specific focus. Similarly, institutions can focus on specific research, for example medicine, management, or any number of other disciplines (Jayaram, 2002; Jayaram, 2004; Dutta and Das, 2001). Typically, the centrally
controlled universities that are not created as a Central University, have a specific focus in a discipline or educational level (Sharma, 2013). A college, university, or stand alone institution can have a specific workforce development goal focused on a specific set of skills or occupational training at the higher education level (Tilak, 2002; Carnoy, 2006). Often, a corporation will establish a separate private educational institution in order to provide an education for people so that it can after graduation hire them as employees (Makkar, et al., 2008; Rao, 1966).

Figure 10 – Enrolment by Level of Degree and Discipline

The second way to differentiate across the system is to look at students and degree recipients by program. Figure 10 shows enrolment for those seeking a degree by degree level and discipline (Department of Higher Education, 2013a). Arts & Humanities dominates across all levels except at the doctoral level where it places a close second behind Science. Science also has the second highest share of master’s students, but Science places behind Commerce & Business and Engineering & Technology for both undergraduate and post-graduate students. Commerce & Business is being pursued by nearly 30% or post-graduate students while Engineering & Technology is a strong component among undergraduate degree seekers.

Figure 11 shows the distribution of PhDs awarded by discipline. The distribution is, not unsurprisingly, very similar to the distribution of enrolment of PhD students. However, one striking difference can be seen. While Engineering & Technology students comprise 22% of all PhD students, only 10.5% of PhDs are awarded in Engineering & Technology. This does not necessarily mean that over half of all Engineering & Technology PhD students ‘wash out’, but it does strongly imply it. Two additional possibilities are that because of the strong labour market especially in the technology sector, PhD students stop pursuing their studies and obtain a (high-paying) job, or after completing some initial PhD studies at a university in India, students are able to obtain admission to a foreign institution and then complete their PhD in a foreign country. Given the complex nature of doctoral studies, the latter option would generally require students re-start their doctoral studies at the foreign university. However, the doctoral studies completed at an Indian institution could make them more competitive for entry to the foreign doctoral program. Whatever the reason, this a significant difference. And, given the desire of India to both reach a ‘mass’ level of higher education access and to grow its economy based on knowledge and innovation, this significant loss of potential Engineering & Technology PhDs is troubling.
and deserves further investigation. This is a new finding and not something that was encountered across the analysis of existing literature.

![AWARDED PHDS (2010-11)](image-url)

**Figure 11 – Awarded PhDs by Discipline (2010-11)**

**Language**

India’s universities and colleges were originally created by the British to meet their needs in managing and governing India and English is one of the two languages of the Central Government (the other is Hindi). Although Hindi is the only constitutionally recognized language, English has long been established as the language of instruction for higher education. However, as India is also home to twenty other “official” languages as designated by the States and in excess of 1,500 other recognized languages, language issues are numerous and powerful. And, although the benefits of students knowing English are many in a globalized and globalizing economy, those have to be weighed against the difficulties created for students whose previous education and experience was in a different language (Jayaram, 1993; Rao, 1966). In fact, student protests in the 1960s forced the Central Government to revise its educational language policies to make them more inclusive (Altbach, 1968). Despite, or maybe directly because of, these issues, little information about the language of instruction for higher education is available. For the most part, universities and higher degrees tend to be almost exclusively in English. The colleges are also mostly in English but are more likely to offer instruction in another (local) language. Stand alone institutions at the diploma level will also be in English but are even more likely to be offered in a different language while post-graduate diplomas will most likely be in English. I was able to find one study of programs across 108 universities that was completed in 2004 that looked at both language of instruction and language of examination (Gargesh, 2006). As there was only one small difference between the two, the results presented show language of examination.
Figure 12 shows the results of that survey by discipline for both total number of programs and the share of each program using English versus Hindi or another regional language. In all cases across higher education, the language will be one of the 22 officially recognized ones. Across the technical and professional fields (Science, Commerce & Business, Engineering & Technology, Medicine), English dominates the instructional landscape. Across those four disciplines, non-English instruction is only offered in at most 11% of University programs (Commerce) and only four of 66 Engineering & Technology programs (5.7%) are presented in a language other than English. Among Arts & Humanities, which do include things like Indian Language, Indian Literature, and Sanskrit programs, one-third of programs are offered in a language other than English. For the ‘other’ disciplines, which include Agriculture and Law, one-quarter are offered in Hindi or a regional language. Overall 80% of university programs offer instruction and evaluation in English while 20% have a different language.

Figure 13 shows the distribution by language for the 106 university programs that are not taught in English. Overwhelmingly, when English is not the language used, the national official language, Hindi, is used. Nearly two-thirds of non-English university programs are in Hindi. Gujarati, Bengali, and Marathi comprise a significant majority among the remaining programs and together are about one-quarter of all non-English instruction. It should be noted that this survey only included programs across 108 of the
(now) 727 universities across India. As specifics on the survey were not provided, it may not have been drawn from a random sample and may not be representative of language of instruction/examination across all universities. In addition to the languages listed in Figure 13, colleges and universities offer instruction in languages that vary across the states and include Assamese, Konkani, Telugu, Urdu, and Oriya. It is to be expected that the remaining seven state-designated official languages are also used by at least some programs in the colleges and universities of those states. The act by a state of designating a local/regional language as ‘official’ essentially requires that the state provide at least some accommodation at a college or university for instruction in that language.

Figure 13 – Non-English Language Programs (2003-04, 108 universities)
Challenges Facing Higher Education in India

Overall Challenges
The myriad challenges confronting the Indian higher education are numerous and complex. While some have changed and developed over time, others are newly created by the intensification of attention and blossoming of opportunities whose prerequisite is a diploma or degree. Others are long-standing and have been identified and discussed in various ways over decades (Altekar, 1934; Deasi, 1970; Kapur, 1975; Sethi, 1983; Aggarwal and Agarwal, 1989; Raza, 1991; Altbach, 2004; others). Recently, greater attention has been given to funding (Agarwal, 2006; others) and governance (Kaul, 2006; Sharma, 2013).

One interesting lens that offers insight into the overall severity of the challenges facing higher education in India is to consider foreign students in India and Indian students in other countries. India has the third largest system of higher education in the world (behind China and the U.S.). Yet India’s highest ranked university (Punjab) in the Times Higher Education ranking places 226-250, and only five universities rank in the top 500 (four IITs rank 351-400). The Shanghai Jiao Tong rankings are even more alarming. One university (Indian Institute of Science) ranks in the 300-400 range, and it is the only university in India to make the top 500 list. The foreign student numbers show how little the rest of the world values higher education in India. With over 23.6 million students just 31,632 (0.13%) are from another country (Department of Higher Education, 2013). If foreign students from the five neighbouring countries that provide the greatest number of foreign students are excluded, less than 8 100th of 1 percent (0.08%) of enrolment in India’s institutions is foreign. Overall Indians spend over $4 billion per year to send their children to other countries for higher education, yet foreign direct investment in higher education in India is less than one-tenth of that (Kaul, 2006). The challenges of the higher education system in India result in a significant educational trade imbalance and ‘brain drain’.

The three greatest challenges have been described as access, equity, and quality (Deloitte, 2012) or expansion, equity, and excellence (FICCI, 2012). While all three ideas are tightly linked, equity can be especially dependent on expansion and access. But, expansion and access are not necessarily the same idea. Expansion is a means to increase availability and, it is hoped, access. Expansion can be developed in two ways: first, existing institutions can grow; second, new institutions can be created. Given this distinction and the different data used to assess each issue, they will be considered separately. The challenges of access, expansion, equity, and excellence will each be presented in turn. Following that, a brief discussion of the 12th Five Year plan and the ways in which the government intends to address these issues will be used to conclude this discussion.

Access: Mass Education and the Gross Enrolment Ratio
India has long had the goal of significantly improving the share of its population that is pursuing higher education (Tilak and Varghese, 1983; Prakash, 2007; Sharma, 2013). The ‘gross enrolment ratio’ (GER) is the total number of all enrollees in higher education, regardless of their age, divided by the total population age 18-23. In effect, it is a measure of the extent to which the population is availing itself of opportunities in higher education. It can be considered a measure of access to higher education, but increasing the GER can require more than just building more universities. As a composite measure, GER reflects an aggregation of individual decisions made for a wide variety of different reasons. For example, it could be about access and availability, but it could be about financial concerns and opportunity costs, or it could reflect academic, language, or other skills – a large number of different factors influence a nation’s GER. By whatever means are necessary, an increase in a nation’s GER is always related to an increase in that nation’s wealth, GDP, and prosperity.
Figure 14 shows the how India’s GER compared to select other countries in 2009 and also shows how the country’s GER has changed over time (World Bank, 2010; Bureau of Planning, Monitoring, & Statistics, 2013). Together the graphs tell two stories. The first is that of a country that is still developing and still has a long way to go. In 2009 at 15%, India was well below the global average of 25% and below countries like China and Malaysia. The second graph offers a more optimistic story and includes more recent data. Looking at just 2010 to 2012, the GER in India increased from 15% to just over 20%. The Central Government has a stated goal of getting the GER to 25% by 2020. More about that expansion will be discussed below, but if the recent trend holds, it looks possible.

The current GER of 20.4% and the measurement of GER at a country-wide level hides much of the complexity and underlying issues that still remain (Planning Commission, 2012). Across the States and Union Territories of India, the GER ranges from 2.3% (Daman & Diu) to 47.9% (Delhi Capital Territory). The average GER for the states, which is not weighted by population and so is different from the national figure, is 15%. And, many large populous states have a GER well below the average (Kerala 13.1%, West Bengal 11.9%, Uttar Pradesh 10.9%, Punjab 10.8%, Rajasthan 9.6%, and Assam at 9.0%). Significant variation in the GER across the States and Territories reveals how unevenly higher education opportunities are being accessed across the country. Raising the nation average to 25% will not raise the GER measure uniformly across India.

Expansion: Institutional Size
In order to get the GER to 25% the number of students enrolled in higher education institutions would have to increase by 5.32 million from the current 23.6 million to 28.9 million. And, this actually underestimates the required growth as it does not take into account the population pyramid of India and the overall growth of the country. The increase of over 5.32 million would only get to 25% if the population of 18-23 year olds stayed exactly the same. However, this is a reasonable estimate of the growth that would be required for India’s GER to reach the current global average.

Using estimates from a variety of sources previously identified, Table 3 shows the current average size of institutions across India by governance and degree. Central institutions, mainly Central Universities and IITs, are nearly five times larger on average than State Universities or colleges. And, colleges and universities are nearly twice as large as Stand Alone diploma-granting institutions. But, overall, at around 560 the average size of institutions is not that large. Complete data on the distribution is not
available, so it is possible that the distribution is highly skewed and is characterized by a very small number of extremely large institutions and a very large number of very small institutions. However, based on other discussions, it would seem that the distribution is not skewed and that these averages generally represent the ‘typical’ institution (FICCI, 2012; others).

<table>
<thead>
<tr>
<th>Institution Type</th>
<th>Average Students/Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Government</strong></td>
<td></td>
</tr>
<tr>
<td>Overall average</td>
<td>561</td>
</tr>
<tr>
<td>Central</td>
<td>2,445</td>
</tr>
<tr>
<td>State</td>
<td>534</td>
</tr>
<tr>
<td><strong>Private</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>438</td>
</tr>
<tr>
<td><strong>Degree Awarded (University, College)</strong></td>
<td>559</td>
</tr>
<tr>
<td><strong>Diploma Awarded (Stand Alone)</strong></td>
<td>260</td>
</tr>
</tbody>
</table>

Table 3 – Average Institution Size

The data shown in Table 3 and already presented can be combined with the estimate of 5.32 million new students needed to bring India’s GER to 25%. If the current average institution sizes are maintained, adding over five million new students would require one of the following:

- 9,483 new government institutions or
- 2,176 new Central Government or
- 9,963 new State Government or
- 12,146 new private institutions or
- 9,517 new degree awarding institutions or
- 20,462 new diploma awarding institutions

If the current ‘mix’ of universities, colleges, and stand alone institutions is taken into consideration, and again, the current average sizes are assumed, accommodating the 5.32 million new students would require all of the following:

- 633,000 new students in 260 new universities and
- 3,950,000 new students in 7,400 new colleges and
- 744,000 new students in 2,860 new stand alone institutions

Increasing GER for India is a massive undertaking. Increasing enrolment by creating more new institutions, is insufficient and untenable given the short timeframe. The strategy for reaching a GER of 25% must include creating new institutions but must also include focused energy and attention on raising all of the averages shown in Table 3. If the number of institutions remained fixed, providing a sufficient number of opportunities would require that the average number of students per institution would have to increase to about 3,000 for Central Universities, 675 for State Universities and colleges, and 325 for Stand Alone institutions.

**Equity: Women, Scheduled Tribes, Scheduled Castes, the Poor**

Equity of access to higher education in India is a triply complicated problem (Chanana, 1993a; Chanana, 1993b; Beckham, 2000; Weisskopf, 2004). While equity of education for women in India has been a long-standing area of focus (Misra, 1966), the access to education for scheduled tribes and scheduled castes has also grown in importance over time (Mukerji, 1956; Sharma, 2013). A further complication is introduced when issues of access extend beyond scheduled tribes and castes, who are often living in poverty, to include others who are also living in poverty (Tilak and Varghese, 1991; Rani, 2004). While
education issues for those living in poverty often start at the primary level and continue through secondary and senior secondary education, providing access to higher educational opportunities is growing in importance as primary and secondary education becomes universal across India (Prakash, 2007). The issues are numerous, but, as was the case with language of instruction which can quickly become an access issue especially for the scheduled tribes and castes, very little information is available. What has been collected, shows that for the scheduled tribes and scheduled castes, participation rates in higher education are extremely low but are showing small signs of improvement (Department of Higher Education, 2013b).

The access to higher education for women has been more carefully tracked (Chanana, 2000). Results have shown that individual returns from education are lower for women than for men (Duraisamy, 2002). Figure 15 shows the average number of females enrolled in higher education per 100 enrolled males (Bureau of Planning, Monitoring, & Statistics, 2013). Between 1951 and 2006, a steady increase of about 10 more women per 100 men every 10 years can be seen. Raising from 13 in 1951 to 62 by 2006. From 2006 to 2012 the data is reported on an annual basis, and shows and increase of 1-2 women per year. The sharp jump in 2011 which saw an increase to 78 women per 100 men, is likely the result of the 2011 census capturing a more complete picture. The actual yearly increase between 2006 and 2011 was probably closer to 4. Although participation by women has increased significantly over the past sixty years, women are still under-represented in higher-education classrooms by 20%.

![Figure 15 – Number of Females per 100 Males in Higher Education over Time](image)

**Excellence: Accreditation and Institutional Quality**

As discussed above, quality concerns of higher education in India, especially in a global economy, have been raised loudly and often (Raj, 1971; Carnoy, 2006; Makkar, et al., 2008; Powar and Panda, 2012). Suggestions have been made to change the nature and requirements for ‘private’ institutions to remove the not-for-profit requirement to introduce a greater element of competition or to make other changes to regulation of private institutions (Kingdon, 1996). A variety of other suggestions have been made that are particularly focused on increasing the quality of higher education and the efficacy of results (Indiresan, 1993). They will not all be reviewed here and would make for a piece of separate research.
The focus instead will be on the typical mechanism used to ensure, or at least validate, that an institution of higher education meets a minimum standard of quality – accreditation. The extent to which this approach is not used for both colleges and universities helps to explain at least some of these quality concerns.

Four regulatory bodies exist within the Department of Higher Education in the Ministry of Human Resource Development in the Central Government that oversee higher education and are generally responsible for accreditation.

- **University Grants Commission (UGC)**, previously discussed, is responsible for oversight of 628 universities and 28,274 colleges. Not all universities and colleges are under the purview of the UGC, but around 80% are. Accreditation is managed through the **National Assessment and Accreditation Council (NAAC)**, an autonomous institution of the UGC.

- **All India Council for Technical Education (AICTE)** is responsible for oversight and accreditation of 8,562 technical institutes most of which are diploma-granting.

- **Distance Education Council (DEC)** oversees thirteen State open universities and approximately 200 programs at other universities. About 3.6 million people are enrolled in distance education across India.

- **Council of Architecture (CoA)** sets qualifying examinations and registers architects as well as helps to set education standards for education in Architecture.

Five research councils also exist within the Department of Higher Education that focus on research in History, Social Science, Philosophy, Civilizations, and rural issues.

Figures 16 and 17 show the eight levels of accreditation and evaluation that universities and colleges can undergo. It then shows for each of those stages, the percentage of all institutions that actually pass that stage. The individual levels are:

1. **Total** – all colleges or universities
2. **UGC Purview** – the share of colleges or universities that fall under the purview of the UGC. This number represents the share of institutions that could be accredited and graded.
3. **UGC Funds** – the share that actually receives some funding from the UGC. The funding can range from a small amount for a specific program to funding for the entire institution. But, at some level, the institution is getting money from the Centre via the UGC.
4. **Accredited** – the share that has been evaluated and accredited.
5. **Accredited >60%** - the share that scored higher than 60% on its accreditation evaluation.
6. **C-Grade+** - the share of institutions that have been scored and received a grade of C or higher (satisfactory).
7. **B-Grade+** - the share of institutions that have been scored and received a grade of B or higher (good).
8. **A-Grade** – the share of institutions that have been scored and received a grade of A (very good).

For universities (Figure 16), the vast majority fall under the purview of the UGC (86.4%) but the UGC only funds about half of them (44.7%). The 312 State Universities do not fall under the direct purview of the UGC as they were chartered under legislation in the various States. Of those universities that the UGC funds most (34.9%) are accredited and scored better than 60%. However, note that nearly two-thirds of universities are not accredited. Almost all accredited universities scored at least a C (34.5%) and nearly as many (28.9%) scored a B. But only one in ten universities across India actual is given a grade of A, which is used to indicate at least some level of excellence. And, again, this is for the universities, which are small in number, highly supported, and are the elite higher education institutions.
of India and the only ones that can actually award degrees. Two-thirds are not accredited, and nine in ten of these ‘elite’ institutions are not high performing.

Turning to the colleges (Table 17), the story becomes even more depressing. While roughly 80% of colleges do fall under the purview of the UGC, the UGC only funds just over a quarter of the total. Because of the governance and the way the system is constructed the universities are really meant to be the monitors and arbitrators for the colleges who are educating people that are receiving a degree with the university’s name and seal on it. However, as seen above, the universities are not doing such a good job taking care of their own excellence – let alone overseeing and instilling excellence in the colleges. Also, as with the universities, much of the funding is from the states, and for colleges, private colleges with their own funding sources are more common. Just about 16% of colleges are accredited. This is under half the rate of accreditation for universities. Most of the accredited colleges (14.2% of the total) do score higher than 60%, but keep in mind that the 1.6% of colleges that are accredited but didn’t score over 60% is approximately 570 colleges with over 320,000 students (using the overall averages). Nearly one-third of a million of India’s college students are at an institution that is accredited but scored below 60%. Almost all (15.6%) accredited colleges scored a C or better, and just about 12% scored an A or B. However, just under 1.5% of colleges scored an A. Less than two of every three hundred colleges across India is graded as very good.
What’s Next? The 12th Five Year Plan (2012-2017)

The Twelfth Five Year Plan for Higher Education focuses on six areas (FICCI, 2012):

- Expansion – growing existing institutions
- Equity – targeted efforts for minority communities
- Excellence – building through research and innovation, faculty, and internationalization
- Governance – increasing autonomy and transparency
- Funding – increasing both public and private funding but linked to outcomes
- Implementation and Monitoring – coordination across agencies

The plan includes specific initiatives across all six areas. And, these areas map quite nicely back on to the five dimensions and four challenges identified above. It is worth noting that, by design during the analysis, the current five year plan was avoided and not included in identifying the five dimensions used to differentiate across the higher education system of India. The dimensions emerged from the historical, backward looking, and historical information although it should be expected that the plan would reflect the current situation. The success of the plan is not assured, and even if everything in the plan achieves some level of success, many of the challenges will still exist (Deloitte, 2012).

This paper identifies and discusses five different dimensions across which the higher education system in India can be considered. These dimensions are governance, financing, level of degree awarded, program differentiation, and language. Along with definition and specification of these dimensions, the key challenges of access, expansion, equity, and excellence are presented in a framework based on the identified dimensions. The current (2012-17) five year plan addresses these challenges along with more internal structural issues like higher qualified faculty, but as the expansion analysis has shown, reaching those desired goals will be daunting.

Amartya Sen quoted one of his teachers as saying, “The frustrating thing about India is that whatever you can rightly say about India, the opposite is also true.” (Sen, 2005). That is equally as true about the higher education system India – a system that increasingly is being asked to provide more for a growing share of over 1.3 billion people.
References


University Grants Commission. (2014, February 5). Total Number of Universities in the Country as on 05.02.2014.


Author Bio

Kevin Stolarick is former Research Director at Martin Prosperity Institute, and Director at India Institute of Competitiveness (kstolarick@gmail.com).

Working Paper Series

The MPI is dedicated to producing research that engages individuals, organizations and governments. We strive to make as much research as possible publicly available.

Our research focuses on developing data and new insight about the underlying forces that power economic prosperity. It is oriented around three main themes: economic performance, place, and creativity.

Disclaimer

The views represented in this paper are those of the author and may not necessarily reflect the views of the Martin Prosperity Institute, its affiliates or its funding partners.

Any omissions or errors remain the sole responsibility of the author. Any comments or questions regarding the content of this report may be directed to the author.