

Integrated Biometric Identification System and Quality Assurance in Higher Education System of India

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Abstract

Statistics shows that 18% of the world's population and 65% in case of India, is youth. So India stands to gain from the 'youth bulge'. The working population of India is expected to grow by more than 47 million by 2020. This gives us a great opportunity, but the opportunity can be capitalized if the powers of youth harnessed properly (Dibyasundar, 2010).

This is a great responsibility upon the shoulders of Higher Education (HE) to make this workforce a trained and capable to make the country superpower. To douse a quality output from this force we have to put into operation a quality induced system of higher education which makes our youth attuned with new trends and also there should be a system which can monitor and coerce the youth to be serious for their future endeavors.

Use of integrated biometric identification system (same as Multipurpose National Identity Card (MNIC) project of Indian Government going to begin from on February 2011) in the same way HE can make a powerful, flexible and strong system which will provide borderless study opportunity across the country and overseas and make the whole earth a very big class room according the catchphrase of Swami Vivekanand "Vasudhaiv Kutumbakam". On the other hand this will compel the students for more earnestness towards their values and discipline in HE. This electronic system will reduce the paperwork in between the Institutes of HE in India.

INTRODUCTION

The youth form the 18% of the world population and India is richest in this wealth because 65% of the population is youth and India stands to gain from this 'youth bulge'. The working population of India is expected to grow by more than 47 million by 2020. This will provide great opportunity, but the opportunity can be capitalized if the powers of youth harnessed properly (Dibyasundar, 2010).

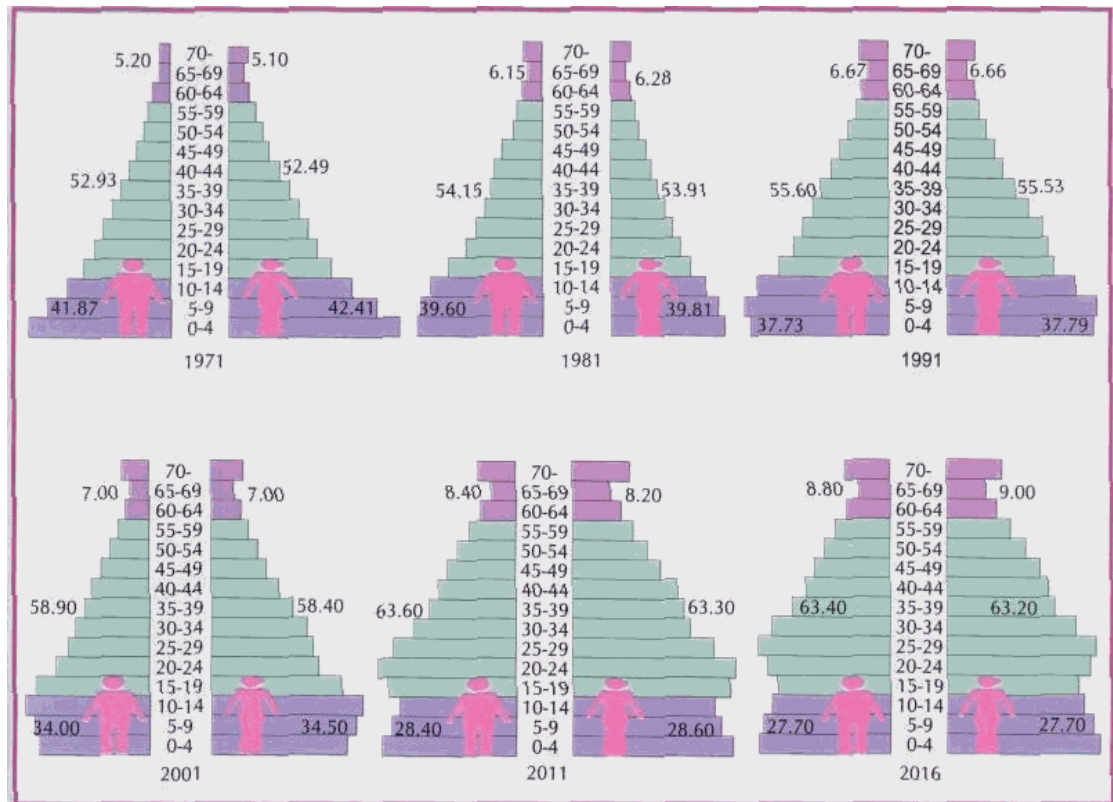


Figure 1: Changes in Population Pyramid-India (1971-2016) (in millions)

Source- Technical Group on Population Projections, Registrar General of India (RGI) 1996 (National Commission on Population)

There is a huge responsibility of Higher Education system to convert this ‘youth-bulge’ into industry ready personnel. To know the actual inducted trainee-workforce in different streams, at a given time-point, we need a collective database of the ‘youth’, who are enrolled after 10+2 (or equivalent) education; in Higher Education (HE). This will provide an insight as to how many employment opportunities to be created, nature of planning to move toward generation of employment to a trained generation and how we can cope up with the global demands and challenges through appropriate training of workforce. These challenges and opportunities are also mentioned by the National Commission on Population which suggest-

“ Challenge

- Invest adequately in Human Resource Development (HRD)/skill development
- Provide appropriate employment with adequate emoluments to large work force

Opportunity

- Utilize human resources to accelerate socio-economic growth”

Apex bodies of HE like All India Council of Technical Education (AICTE) and National Council of Teacher’s Education (NCTE) are making efforts, they are building a database of students and staff, involved in their approved institutions in

India to make the HE system of teaching & learning more transparent. There should be an exclusive identification system in India which gives a clear identification of each youth inducted in HE.

SUGGESTED SYSTEM – INTEGRATED BIOMETRIC IDENTIFICATION SYSTEM

This system is based on Biometric system preferable automated fingerprint identification systems (AFIS) (Komarinski Peter, 2005) fingerprint of each student with a unique enrollment no. which replaces the entire enrollment and roll numbers given by various institutes and universities. This is very useful in both, micro – the institute and/or university and in macro – HE system of India. In case of physically challenged persons other biometric system like iris or retinal scan may be preferable. (Veeramachaneni et. al.; 2005; Jain et. al.; 2004, Zhang; 2000 and Sims; 1994)

Biometrics is emerging as the most foolproof method of automated personal identification in demand in an ever more automated world. Biometric systems are automated methods of verifying or recognizing the identity of a living person on the basis of some physiological characteristic, like a fingerprint or iris pattern (Miller, 1994).

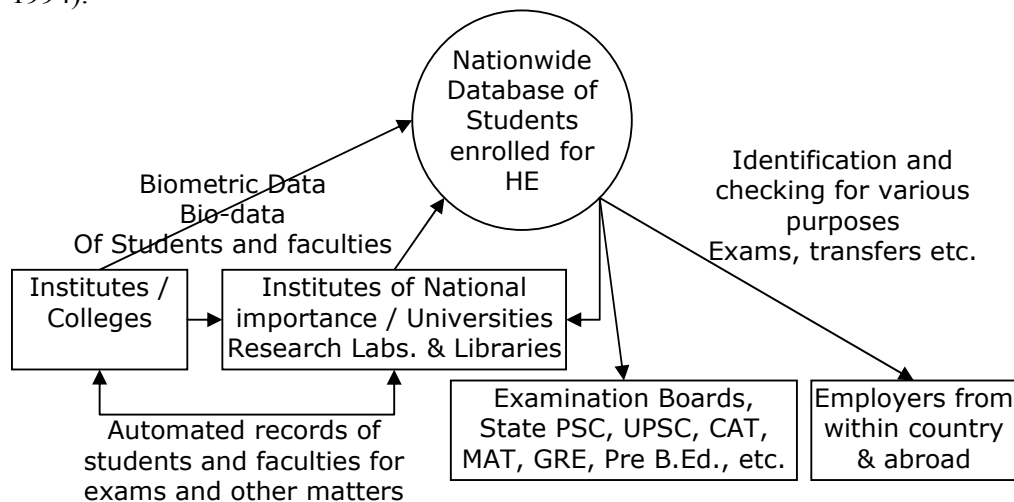


Figure 2: Integrated Biometric Database flow and uses.

With this biometric database an associate database should be created. This database shall include a color photograph (front facing without any spectacles and headgears) of student, bio-data including academic achievement, other achievement, records of attendance in academic activities and examinations; results of various examinations and related evaluative processes; strong points of the student; comments of teachers, research activities, publications and awards & honors. It should be an extensive detail about an individual.

Implementation

The ‘Multipurpose National Identity Card (MNIC)’ project of Indian Government begun from February 2011. In this line if we create a database based upon automated biometric system will become of great importance; which will reduce the drawbacks of red tapism, bureaucracy and political influence in HE.

In this process every institute of HE have to keep a biometric system connected with WAN for scanning and creating the primary database of student, at the begining when the student comes for enrollment in HE ,and there after an automated identification system to identify the correct candidate. When these entries, entered in the WAN of HE a unique identification number allotted to the student through nationwide database of HE. After the enrollment no. allotment and details entered this is the responsibility of the concern baseline institute (a college / school of study / teaching department / university) to upgrade the related database from time to time. It is preferable to develop an automated system for up gradation; which automatically enters the records of academic attendance and examination process & evaluation in each and every stage of student's academic career with proper suggestions and remarks of concern teaching faculties.

In micro level

In the institute this will be helpful to make an objective and impartial system of attendance in regular courses as well as in distance mode of education and make the student more punctual for their academic activities; as many institutes have a system of marking upon the punctuality of students. This may also be useful to restrict the access of 'unwanted' or 'unauthorized' attendance which negatively influence the learning system. This will also be useful to put an 'objective electronic access' of library and other facilities provided by the institution to the appropriate beneficiary.

Secondly, this will replace the faulty system of examination; where no place for false identity in examination. This will reduced the paper work of examination viz. admit cards, attendance sheets etc., which creates confusion and many a times influenced. With this system Total Quality System is possible in Examination process of any institute. At any time-point it is observable. This will reduce the cases of false mark sheets and/or award of degree.

This system will also make the educators will be more accountable for the performance in teaching and other related academic activities. This system can give very accurate and fast results and performance indication of each subjects and faculties. This will bring a compact management in academics as well as in educational administration in the field of HE.

In macro level

A strong and integrated database is to be created and as UGC is creating an Information and Library Network (INFLIBNET) for universities and institutes in India which is accessible from libraries of institutes only; but with this suggested method HE can give access direct access to students directly through internet if any student is equipped with unique identification system gadget in his PC. This feature is now very common in PCs and even in mobile phone handsets for logging in. By this we can strengthen our research activities running in India and abroad. This will give the power of knowledge in finger tips in real sense and every student enrolled in HE can access the huge-library on 24x7 bases.

This will also be useful in entrance examinations of various courses and for employment which needs a database verification of candidates in terms of age, sex, qualification grade etc.. This system will reduces the effort and paperwork. The unique no of individual 'Youth' . will verify the candidature and at the time of

examination, biometric system will check the identity from national database, reducing the need of Xerox copies of mark sheets and issuing of admit cards. This system again reduces the labor of receiving application; scrutiny and issue of admit cards and at the time of examination – ‘identification’ of exact candidate.

In employment; our employment exchanges are based upon paperwork system. With this system there will be separate employment exchange system for HE. An employer (governmental and/or nongovernmental) of within country and abroad can choose right and most eligible candidate from the nationwide database. This will give an equal opportunity to each and every candidate of India.

The proposed system may reduce the paper work of transfer of student from one institute to other within and outside the country. At present a student have to produce various papers like mark sheet, degree, certificates, transfer certificate, migration etc. by this system a student have to fill a willingness form (online) for transfer and the database can be transfer easily without any paperwork. This will make HE system more efficient and objective. The system will helpful for credit transfer schemes for various courses and will encourage interdisciplinary academic activities and will be helpful in more efficient youth exchange programs with other countries.

CONCLUSION & RECOMMENDATIONS

As discussed above the “Integrated Biometric Identification System” will definitely enhance the quality of HE system in India. This system will makes the HE system more flexible, powerful, less time consuming, efficient & effective and above all transparent. By this each and every student can enjoy a borderless study and employment opportunity within the country and abroad. This system has a potential to make the whole earth a very big class room according the catchphrase of Swami Vivekanand “Vasudhaiv Kutumbakam”. On the other hand this will compel the students for more earnestness towards their values and discipline in HE. This electronic system will reduce the paperwork in between the Institutes of HE in India.

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