Journal of Educational Planning and Administration

Volume XXVI No. 2 April 2012

© NIEPA

National University of
Educational Planning and Administration
17-B, Sri Aurobindo Marg, New Delhi 110016

ISSN 0971-3859

© NATIONAL UNIVERSITY OF EDUCATIONAL PLANNING AND ADMINISTRATION, 2012
(Declared by the Government of India under Section 3 of the UGC Act, 1956)

Annual Subscription

	Within India	*Outside India* (By Airmail)
Individuals	₹ 150	US $ 60
Institutions	₹ 350	US $ 85

Annual Subscription commences with *January* and ends with *October* every year. NUEPA offers 20% discount on subscription for three years and above

Advertisement Tariff (For one issue)

Full Page	₹ 2000	US $ 100
Half Page	₹ 1100	US $ 055

Bank draft may be sent to the Deputy Publication Officer, NUEPA in the name of the *National University of Educational Planning and Administration* payable at *New Delhi.*

Published by the Registrar, National University of Educational Planning and Administration, 17-B, Sri Aurobindo Marg, New Delhi–110016 and printed by the Publication Unit, NUEPA

at M/s. Anil Offset & Packaging Pvt. Ltd., Delhi–110007.

© NIEPA

JOURNAL OF
EDUCATIONAL PLANNING AND ADMINISTRATION
Vol. XXVI No. 2 (April 2012)

CONTENTS

© NIEPA

Book Reviews

© NIEPA

Journal of
Educational Planning and Administration

National University of Educational Planning and Administration
17-B, Sri Aurobindo Marg, New Delhi-110016, INDIA

Editor: Jandhyala B.G. Tilak

The *Journal of Educational Planning and Administration* is the official journal of the National University of Educational Planning and Administration. The journal took its present shape and the title in 1987 after long years of its existence in the name of *EPA Bulletin*.

The *Journal* is a professional forum to which both social scientists including sociologists, economists, political scientists, public administrators, educationists, psychologists, etc., and practitioners around the world are invited to share their research and experience in the area of educational planning and administration. The *Journal* publishes research papers of high quality on any dimension of educational planning, administration and development. Authors are requested to send at least two copies of their manuscript to facilitate the review process. Detailed notes for contributors are given below. Comments on the papers published in the JOURNAL are also welcome.

The *Journal* also publishes review articles and book reviews. Two copies of the book may be sent to the *Editor* for the same.

Abstracts of recently completed M. Phil. and Ph. D. theses on educational policy, planning and related issues in Indian universities are also invited for publication.

NOTES FOR CONTRIBUTORS

Articles submitted for the Journal should be original contributions and should not be under consideration for any other publication at the same time; if an article is under consideration by another publication, authors should clearly indicate this at the time of submission.

At least two copies of the article typed in double space on one side of the quarto size paper should be submitted. Papers can be sent through e-mail (jepa@nuepa.org); but they also have to be accompanied by hard copy by mail; and on acceptance of the paper for publication, an electronic version (MS Word) has to be sent to the Editor of the Journal.

Author's name, affiliation, address (including e-mail address), acknowledgement, etc., should appear only on a separate cover page.

Six Key Words along with JEL Classification Codes may be listed for indexing/abstracting in JEL, along with a 100-word abstract of the paper.

Figures and tables should be clearly produced ready for photographic reproduction.

The authors are entitled to 20 off-prints free of cost and a copy of the issue in which their article appears.

Authors are suggested to follow standard styles in the preparation of the manuscripts.

- Simple references without accompanying comments should be inserted in the text in parentheses, with the name of the author, year of publication and page numbers, e.g., (Naik, 1972, pp. 23-25)
- References with comments should appear as notes, denoted by a superscript number in the text; but references in the foot-notes will be in the same style as above.
- All references should be alphabetically arranged at the end of the text. Style should follow: author's name, forename/ initials, date of publication in parentheses, title of publication (italicized in case of a book, and in double quotations in case of an article, and the source, Journal or book underlined or italicized), place of publication, publisher, page numbers, and any other additional information. Journal articles should contain complete information regarding volume number, issue number, date, etc. A few examples are as follows:

Naik, J.P. (1972): *Education Commission and After*. New Delhi: Allied.

Majumdar, Tapas (1987): "The Role of the Finance Commission", *Journal of Educational Planning and Administration*, 1 (3&4), July-October, pp. 1-11.

Panchamukhi, P.R. (1982): "Educational Finances in a Federal Framework", Seminar on Mobilisation of Additional Resources for Education. New Delhi: National Institute of Educational Planning and Administration (mimeo).

Reiff, Hans (1986): "Perspective Planning in Education: An International View", in Moonis Raza (ed.) *Educational Planning: A Long Term Perspective,* New Delhi: Concept, for the National Institute of Educational Planning and Administration, pp. 65-91

Registration No. 45878/87

JOURNAL OF EDUCATIONAL PLANNING AND ADMINISTRATION

Previous Issue (Vol. XXVI No. 1, January 2012)

Twenty Five Years of
Journal of Educational Planning and Administration
(1987-2011)

Chronological Index

Index by Author

Index by Title

Next Issue (Vol. XXVI No. 3, July 2012)

ARTICLES

Sharanjit Singh Dhillon and ***Kuldeep Singh:*** Educational Development Index of Punjab – An Inter-district Analysis

M. Gopinath Reddy and ***G. Bhavani:*** Community Participation in Educational Administration in Andhra Pradesh: Rhetoric or Real?

Ajith Kumar and ***M. Lathika:*** Sacred Goals and Injudicious Spending: A Mid-term Appraisal of Sarva Shiksha Abhiyan*, Kerala*

M.A. Sidiqqui, N.A. Nadeem and ***Mudasir Basu:*** Research on Leadership Behaviour of Educational Administrators – A Critical Review of Literature

RESEARCH ABSTRACTS

Santosh Kumar Rajpurohit: Cost and Efficiency Analysis of Professional Higher Education in Rajasthan

BOOK REVIEWS

National University of Educational Planning and Administration
New Delhi, INDIA

© NIEPA

Journal of Educational Planning and Administration
Volume XXVI, No. 2, April 2012, pp. 317-329

Globalization and Internationalization of Higher Education[#]

Joseph Benjamin[*]

Abstract

The goal of internationalization of higher education is to see that the quality and marketability of higher education programmes be measured according to the international norms, and to provide international competence. The goal post of internationalization is economic sustainability, and harmonious bonding between developing countries. Today globalization has become a favorite catchphrase and buzzword and has entered the lexicon of the new education dictionary. Due to globalization, there is ample scope as well as demand for international mobility of scholars for study purposes. The supporters of globalization promote internationalization of higher education. They give more emphasis to the quality of education, adopting new technologies of imparting education and re-designing the course content or restructuring it as per international standards. People see the bright side of globalization and praise its impact on education, as it creates an atmosphere in developing countries where the students have a wide range to choose from.

The present paper would analyze the impact of globalization on higher education. An effort would be made towards study of internationalization of higher education. The study would focus on the initiative taken by India for internationalization of higher education, as well as on the increasing enrolment of foreign students in the developing countries. How far the quality of research in higher education would be maintained is an area to look into in the near and distant future. The paper also studies the multifocal ramifications and pitfalls of internationalization of higher education if there are any. Obviously many imponderables are involved in this calculus.

[*] St. Francis De Sales' College, (RTM Nagpur University), Seminary Hills, Nagpur-440006, Maharashtra. Email: joseph.sfscollege@gmail.com

[#] The paper is the revised version of paper presented at an international conference held in Mauritius on March 23-25, 2011.

© National University of Educational Planning and Administration, 2012

Introduction

According to the Concise Oxford Dictionary, 'to educate' means 'to give intellectual and moral training to.' 'Education' translates itself into a "systematic instruction [for] development of character or mental powers".' Education can be classified at three levels: namely, eradicating illiteracy, b) formal education, and c) beyond formal education. The third level is considered as higher education. Higher education imparts in-depth knowledge and understanding so as to advance the students to new frontiers of knowledge in different walks of professional life. It broadens not only the intellectual power of the individual within a narrow specialization, but also gives him/her a wider perspective of the world around. So there is no 'horizon deficit'.

Research and teaching are part and parcel of higher education. Both go together. Higher education without research has no meaning. Research and teaching should go hand in hand. Main objectives of research are knowledge creation and development of problem solving skills, as well as identification of the appropriate teaching pedagogy for curricular transaction. Consultancy arises out of research capability and the ability to solve problems both for individuals and society.

There are four predominant concepts of higher education: first, higher education produces qualified human resources, second, higher education provides training for research career, third, higher education focuses on efficient management of teaching provision, and fourth, higher education expands career prospects and life chances. All these concepts are integrated and give an overall picture of what constitutes higher education.

Quality education, besides imparting latest knowledge about the subject taught, also encourage students to acquire more knowledge and deeper understanding of the subjects studied. Higher Education is considered to be one of the most potent means of achieving sustainable development. It is accepted that without more and better higher education, developing countries will find it increasingly difficult to benefit from the global knowledge-based economy (World Bank, 2000).

An effort has been made towards internationalization of the higher education across the globe, encompassing big and small nations during the era of globalization and after. It is aptly said, 'International is the key word in education today. Universities all over the world, including India, place a high value on what is perceived as international education' (Frontline-Chennai, 2011).

Internationalization of Higher Education: India's Initiative

In order to promote the internationalization of higher education, various organizations have organized discussion and taken initiatives. The Association of Indian Universities has organized visits of Vice Chancellors of different countries. It has also signed Memorandum of Understanding with the Vice Chancellors, including, the Australian Vice Chancellor Committee (AVCC), Hochshul Rektoren Konferenz, Germany (HRK), *La Coference des Presidents d' Universite* (CPU) of France and Committee of Vice Chancellors and Directors (CVCD) of Sri Lanka and Mauritius for mutual academic cooperation.

At the same time, the Association of Indian Universities had also organized meetings on internationalization of Indian higher education at Mysore University and Guru Nanak Dev

University, Amritsar. The Mysore Statement came out after the roundtable meet took place in Mysore on February 26-28, 2001 (University News, 2006).

a) Internationalization of higher education can be facilitated if the academic structure of the university is similar to that available in the universities abroad. Academic restructuring may be necessary for many universities and this could mean a gamut of reforms, including permitting the student to choose freely the courses to be studied, introduction of semester-system (with continuous internal evaluation and credit system), allowing transfer of credits, etc. These changes have been advocated for over two decades now and need to be implemented even if there is no internationalization afterwards.

b) The highest priority needs to be given by the academic institutions to the updating and internationalization of curriculum.

c) It is necessary that special English classes are conducted for students from developing countries during the first few months of their stay in India. This can be done in a systematic manner if an English Language Cell is created as part of the International Centre.

d) Indian universities should develop special 'Study India' programmes that could be covered in one semester for the benefit of students from developed countries who would like to visit India to learn more about its culture and heritage, natural resources, diversity, languages or indigenous technologies and systems.

To work out the details of Internationalization of Indian Higher Education programme, the University Grants Commission constituted an expert committee on 'Promotion of India Higher Education Abroad' (PIHEAD). The interim report of the Promotion of India Higher Education Abroad committee was submitted in November 2003 and suggested the following Operative Mechanisms for exporting Indian Higher Education:

a) Formal Degree Programmes offered regularly in Indian Institutions,

b) Short Term Non-degree (but credit offering) Programmes specially designed for foreign students coming to India,

c) Education Fairs for Formal Degree Programme

d) Programmes offered through Distant Education

e) Short-Term Non-Degree Educational Programmes on India,

f) Promoting Indian Education Abroad through our Prestigious Institutions.

After receiving the report of PIHEAD, the University Grants Commission has put up some conditions for higher education. It emphasizes that it is to be implemented only after fulfilling certain conditions (University News, 2006).

1. Academic collaborations with foreign universities for the grant of any degree/ diploma/certificate shall require prior approval of the Commission.
2. If a university enters into any academic collaboration, such as franchise, study centre tie-up or twinning arrangement, etc. with any foreign university which would lead to awarding of any degree/diploma/certificate, it will seek prior approval of the Commission.

There are so many factors which are responsible for the internationalization of higher education in India. Some of them can be mentioned here. Among such important factors which could influence the internationalization are (University News, 2006):

1) Rising demand for education in the parts of the world where adequate facilities and personnel are not available;
2) Surplus education capacities in many countries;
3) Shortage of funds faced by some Western Institutions ;
4) Shifting from the previous patterns to the current trends;
5) Liberal eligibility criteria for admission in the recipient countries;
6) Possibility of obtaining equivalent degrees and diplomas in different disciplines.

The usefulness of internationalization of higher education can be seen in this one decade of implementation. It has generated goodwill among universities, industries and nations in general. It is an accepted fact that the quality of education has improved. In order to assess the quality of education, different bodies have been constituted, which periodically inspect the quality of education. Furthermore, internationalization has encouraged the competitiveness among institutions in India and abroad.

The main goals of internationalization of higher education are: a) to create favourable conditions for students and faculty, who wish to complete part of their studies or teach in another country/continent; b) to create conditions that would enable foreign students to gain access to local study programmes and to add international dimension to the course contents and teaching programmes; c) to collaborate with foreign partners in developing relevant curricula and educational teaching methods.

Another goal of internationalization of higher education is to make sure that the quality and marketability of higher education programmes are measured according to the international norms, and to provide international core competence. The objective of internationalization is economic sustainability and harmonious bonding between developing countries. This would facilitate humanitarian and peacekeeping endeavors.

The Era of Globalization had started somewhere in 1991 and had certain impact on the higher education of the entire world. It had coincided with the end of Cold War and unraveling of the former Soviet Union. Globalization is understood as accelerated increase in cross-border economic, social and technological exchange and as a process leading to greater interdependence and mutual awareness among economic, political and social units in the world. It offers a splendid opportunity for sharing products hitherto not accessible to a wide section of the world population through the emergence of a global market. The supporters paint a rosy picture of globalization in order to convince the world that it will create new economic and social conditions where many of the boundaries will be broken to make the world a better place to live in.

Today globalization has become a favourite catchphrase and buzzword and has entered the lexicon of the new burgeoning education dictionary. Looking at globalization from this new paradigm shift, it is evident that there is an increased presence of the corporate sector. There is ample scope as well as demand for international mobility of scholars for study purposes. It is a fact that knowledge has increasingly become accessible to all and there is consciousness of quality and definite diversification in the field of higher education in the developing countries of the Third World. Some of the universities in the developing countries have grown in the past in such a way when they can compete with other prime

institutions of higher education in the developed counties of the West. No doubt, due to globalization, education has been commercialized and has acquired brand value and signature.

The supporters of globalization promote internationalization of higher education. They give more emphasis to the quality of education, adopting new technologies of imparting education and re-designing the course content or making it as per the international standards. People see the brighter side of globalization and hail its impact on education, as it creates an atmosphere in the developing countries where the students have a wider variety of options to choose from.

The present paper would analyze the impact of globalization on higher education. An effort has been made to study the internationalization of higher education after globalization period. The study would also focus on the increasing enrollment of foreign students in the developing countries. How far the quality of research in higher education would be maintained is an area to look into both in the near and distant future. What is the impact of GATTS in the field of higher education in the developing countries? The paper would also study the multifocal ramifications and pitfalls of internationalization of higher education if there are any. Obviously, many imponderables are involved in this calculus.

Globalization and Higher Education

Nobel laureate in economics Joseph Stiglitz defined globalization as removal of barriers to free trade and the closer integration of national economies (Joseph Stiglitz, 2002). In the early 1990, globalization was welcomed with euphoria. Capital flows to developing countries had increased six fold in six years from 1990 to 1996. The establishment of the World Trade Organization in 1995 was to bring the semblance of a rule of law to international commerce. Everyone was supposed to be a winner –both in the developed and the developing world. Globalization was to bring unprecedented prosperity to all (Joseph Stiglitz, 2006). Economic globalization refers to the integration of different world economies through trade, investments and migration of the people. Rangarajan has taken globalization as "integration of economies and societies through cross country flow of information, ideas, technology, goods, services, capital, finance and people" (Rangarajan C., 2003).

After the revolution in the information technology and communication, today education is considered to be portable, flexible, non-linear and student centric. Education had been viewed as a way out, an opportunity to get a better job in the fast growing cities and metropolitan centers. Now it is also being viewed as a way up, enhancing income even for those who remain in the rural sector, as they can work from their homes as well.

Globalization is pushing higher education towards greater international involvement. This process is often referred to as internationalization of tertiary education. It involves integrating an international, inter-cultural or global dimension into various aspects of tertiary education. A variety of cross-border, cross-culture activities in higher education take place continuously. The cross-border movement of students, teachers and programmes has been taking place after the globalization. With the General Agreement on Trade in Service (GATS) identifying education as a service sector which needs to be liberalized, education services have come to be seen as important traded service.

Though education services, as defined under GATS, include education at all levels, the main focus is on higher education, since most cross-border activities take place in the

domain of higher education. For many years, there was little understanding of the implications of the multilateral trade rules for higher education.

There has been a considerable impact of globalization on the higher education. Despite gains in efficiency and productivity, thanks to better division of labour, it is often argued that in some respects globalization works against the interests of developing countries, reinforcing international inequalities. The impact of globalization is rather widespread. While there are concerns about integrating higher education into the legal structure of the world trade through the WTO, the cross-border activities in higher education are on the rise. Many countries are looking at the opportunities available and the risks associated with the increased trade in higher education. Therefore, nations keep track of position and development taking place in higher education services by other countries in the GATS negotiations.

Globalization and Internationalization of Higher Education

Looking at globalization from the point of view of education, it is clearly evident that there is an increased presence of co-operation and branding in education. At the same time, traditional concept of education is gradually being eroded. As a result, private entrepreneurship of education is co-opted with new vigour. This gives importance to concepts like investment, management, profit and loss. Those who see the brighter side of globalization praise its impact on education for creating conditions even in the developing countries where the students have a wide variety of subjects to choose from. Internationalization of higher education is one of the ways a country responds to the impact of globalization and, at the same time, respects the individuality of nations. "Thus internationalization and globalization are seen as different but dynamically linked concepts. Globalization can be thought of as the catalyst while internationalization is the response, albeit a response in a proactive way" (Jane Knight and Hans de Wit, 1997).

In the era of globalization, knowledge has become a commodity that is being moved from country to country. Today, the growth of knowledge-based economy has led not only to competition worldwide among employers in hiring services of the best brains available in the international labour market, but are also geared to provide on-job training. Rapidly increasing demand for higher education exceeds the capacity of many countries to supply it domestically. For many years, only some students were in a position to go to other countries to obtain higher education. Today, they are able to do it from their own country. International students' mobility across the globe has increased. At present, thanks to the increasing number of institutions, they are building partnerships with the universities and also signing Memorandums of Understanding with their counterparts in other countries. Thus, education can now be accessed online and the new technologies have given necessary push in this direction. The traditional form of cross-border flows in higher education has been for students to migrate from one country to another in order to advance their studies. Several economic and social factors encourage international students' mobility and competition between countries for foreign students (Nick Clark and Robert Sedgwick, 2005). Globalization is seen as a root cause of changes taking place in the higher education and can be simply defined as…"the flow of technology, economy, knowledge, people, values, ideas... across border (Jane Knight, 1999).

Internationalization of Higher Education and its Strategies

Jane Knight and Hans de Wit have elaborated the meaning of internationalization of higher education in a very simple way. According to them, the process of integrating an international, intercultural and/or global dimension into the goals, functions (teaching/ learning, research, service) and delivery of higher education are the aspects of internationalization of higher education. Internationalization of higher education recognizes nation, describes a process of interchange of higher education between nations. It involves partnership between nations, between national systems and between institutions. Without partnership there is no international education.

Strategies for internationalization of activities of higher educational institutions involve the following activities (Ramdev Bhradwaj, 2006):

a) Organization strategies for internationalization;
b) International student programmes;
c) Internationalization of teaching;
d) Offshore and distance education;
e) Internationalization of research;
f) International teaching and assistance and training;
g) Providing international support services.

The strategy of internationalization of education includes the minutest micro study of international context. This includes culture, policy of the institution, its mission, statements and corporate plans, its management and business plans. The study also takes into account the institution's organizational structure for internationalization, its staff policies and its institution-wise links. The number of students enrolled, geographical focus, institutional policies on enrollment target, scholarship, modes of delivery, including offshore and twinning arrangements, use of multi-media and distance education methods, provisions for promotional information are reviewed for international students' programmes. The internationalization of curriculum is the most important component of internationalization of teaching students abroad. In research area it includes a wide range of collaboration projects and institutional linkages and programmes. Internationalization process brings uniformity of quality. The European Union composed of national governments, universities, colleges has proposed the idea that internationalization should not be seen as an end goal, but as a means of quality enhancement.

Internationalization brings global environment on more equal terms. Subsequently, higher education and society can move away from dependency syndrome on the nations who took initial advantage of internationalization process.

Indian Students and Foreign Degrees

For the sixth year in a row, Indian students have emerged as the largest group of international students in the US, as the American degrees 'are a huge lure for Indians' (The Outlook-New Delhi, 2010). According to the figure released by the Institute of International Education, there were 83,833 Indian students only in US universities. Indian students comprise 14.4 per cent of total international students in US (The Times of India-Nagpur, November 2007).

We have an abysmally low number of world class engineering and medical Institutions in India, therefore, only 2.7 per cent of those sitting for IIT entrance examination could get admission, while it is 10-15 per cent case of Harvard and Princeton universities. It is, therefore, no wonder that nearly 160, 000 Indian students go overseas every year thus causing a serous economic blow to the country. Nearly $ 7 billion dollars are being spent by Indian students going abroad on their tuition fee, boarding and lodging. The main reason behind this is unavailability of career oriented quality education in India.

One can find various reasons for Indian students' mobility. Foreign Universities provide better infrastructure, laboratories and workshops. Students get opportunities to study and do research in the centers of excellence at the global level. Foreign programmes offer a lot of flexibility, unlike India where it is more of a straightjacket type of curricula.

The table given below shows the sizable number of Indian students studying abroad against the negligible number of foreign students in India. It is surprising to see that even a small country like Scotland has been able to attract Indian students. The British Council Report, 2009, reveals that that there were 3,625 Indian students who took admission in the Scottish institutions; whereas the number of Scottish students studying in India is only 3, as per Association of Indian Universities report, 2008. This clearly indicates that the quality of education has to improve in Indian Higher Educational institutions.

TABLE 1
Indian Students Abroad and Foreign Students in India

Country	*No. of Indian Students in Country*	*No. of Students in India**
Australia	97, 000	15
USA	94, 563	411
UK	31, 000	76
Canada	6, 937	152
New Zeeland	6, 000	10
Scotland	3625	3

Source: *Times of India*, (New Delhi) June 7, 2009. p. 8.
* AIU publication based on data received from the Indian Universities.

In 2009 the number of students enrolled in Australian Universities has increased to 97,000 from 21,000.

There is no doubt that Indian students have been studying in US and their number is increasing every year, however, India has also been attracting foreign students for many years, particularly from the developing world, especially from Africa, Asia and Latin America, because of two factors, viz., the attraction of Indian language and quality of higher education. Furthermore, in some countries there are no educational institutions and even if there are a few, their quality leaves much to be desired.

Strategies for Integrating the International Dimension

Jane Knight has suggested strategies for enhancing and sustaining the international dimensions of research, teaching and service (Jane Knight, 1999). Integration is the key to the process and strategies that focus both on academic activities as well as organizational factors. are central to achieving a successful and sustainable integration of international

dimension. Jane Knight has provided two strategies - one for the course/programme and second for the institution.

Programme strategies refer to those initiatives which are academic in nature or are related to teaching, learning, training, research and advising or supporting activities of the institution both at home and abroad. The organizational strategies include policies, procedures, systems and supporting infrastructure, which facilitate maintenance of international dimension of the universities and colleges.

TABLE 2
Programme Strategies

Academic Programme	– Student exchange programme – Foreign language study – Internationalize curricula – Area of thematic study – Work/study abroad – International students – Teaching/learning process – Joint and double programme – Cross-culture training – Faculty/staff mobility programmes – Visiting lecturers and scholars – Link between academic programme and research, training and development assistance
Research and Scholarly Collaboration	– Area and theme centres – Joint research projects – International conferences and seminars – Published Articles and Papers – International research agreements – Researcher and graduate students exchange – International research partners in academic and other sectors – Link between research, curriculum, teaching
External relations and services (domestic and abroad)	– Community-based partnerships and projects with non-government groups or private sector companies – International development assistance projects – Customized/contract training programmes abroad – Link between development projects and training activities with teaching and research – Community service and intercultural project work – Overseas teaching sites and distance education – Participation in international networks – Alumni development programmes abroad
Extra-curricular activities	– Student clubs and associations – International and intellectual campus events – Liaison with community based cultural groups – Peer groups and programmes – Social, cultural and academic support systems

Source: Jane Knight, (1999): *Internationalization of Higher Education'.* Quality and Internationalization in Higher Education, IMHE,

© NIEPA

Internationalization and Organizational Strategies

Organizational strategies include those initiatives which help to ensure that international dimension is institutionalized through appropriate human resources, policies and administrative systems. The focus on organizational strategies is what distinguishes the process approach from the other approaches. By emphasizing the importance of integrating of international dimension into the institution's mission statement, planning and review systems, policies and procedures, hiring and promotion systems, one is working toward ensuring that the international dimension is well embedded and institutionalized.

Jane Knight and Hans de Wit (1995) have given the examples of organizational strategies.

TABLE 3
Organizational Strategies

Governance	– Expressed commitment by senior leaders – Active involvement of faculty and staff – Articulated rationale and goals for internationalization – Recognition of an international dimension in mission statement and other policy document
Operations	– Integrated into institution-wide and department planning, budgeting and quality review systems. – Appropriate organizational structures – Communication systems (formal and informal) for liaison and co-ordination – Balance between centralized and decentralized promotion, and management of internationalization – Adequate financial support and resource allocation systems
Support services	– Support from institution-wide service units, e.g. student housing, registrar, counseling, fund-raising, etc. – Involvement of academic support units, i.e. language training, curriculum development, library – Student support services for international students studying on campus and domestic students going abroad, i.e. orientation programmes, counseling, cross-cultural training, student advisors, etc.
Human resource development	– Recruitment and selection procedures which reorganize international and intercultural expertise – Reward and promotion policies to reinforce faculty and staff contribution to internationalization – Faculty and staff professional development activities – Support for international assignments and sabbaticals

© NIEPA

Sustaining the Quality in Higher Education

Assessing the quality of higher education is seen as enabling individuals to benefit from economic opportunities, thereby leading to expansion of income and economic means (Jean Dreze and Amartya Sen 1995).

The quality in higher education is associated with idea of excellence or outstanding performance. The quality assurance in higher education refers to the policies, attitudes, actions and procedure necessary to ensure that quality is being maintained and enhanced. It may include any one or more of the approaches described in the next section. Quality assurance is sometimes used in a more restricted sense, either to denote the achievement of a minimum standard or in reference to assuring stakeholders that quality is being achieved.

In order to maintain the quality in higher educational institutions External Quality Review (EQR) agencies have been established. These agencies are intended to hold higher education institutions accountable for the resources they enjoy, provide independent affirmation of the quality achieved by higher education institutions, and to assist higher education institutions to improve their quality. Different countries have used different methods to maintain quality in their educational institutions. Assessment is an evaluation that results in a grade, whether numeric, that is a percentage or a shorter scale of say 1 to 4, or literal, i.e. A to F, or descriptive, like good, satisfactory, unsatisfactory. The assessment of higher education can also be called an evaluation.

Conclusion

No doubt the internationalization of higher education has opened new horizons for present and coming generations to acquire higher education as well as absorb global culture from anywhere in the world. The students' mobility has been made possible due to the internationalization of higher education. New branches of universities of the West are being opened for the benefits of students. This trend got a substantial boost from the relentless onward march of the multiple communication revolutions. This has opened new options. First, the students need not go to Western countries to register themselves for higher education now. The second advantage of internationalization of higher education is that standard courses are planned to suit the students throughout the globe. This is due to the fact that students migrating to various destinations for education come from diverse national, cultural, linguistic, political and economic backgrounds. The syllabus is prepared in such a way that knowledge is acquired which may lead to job placement. Higher education is linked with employment. These are the greatest advantages of internationalization of higher education. The 1990s was a decade of turmoil in higher education and the government approach almost amounted to killing higher education (J.B.G. Tilak, 2003). The enrollment compared to the Western world was very negligible. Government did not bother about the higher education.

No doubt internationalization has advantages; however, it also has multiple disadvantages. The higher education has been commercialized and marketized. Bogus universities have come up in various Western countries. Two random examples of the same are the Tri-Valley University scandal in California in the USA and many sub-standard universities and polytechnics in Australia, which have created problems both for foreign students and host countries (The Indian Express-Nagpur, 2011).

Diplomatic hiccups and ripples have threatened to sour bilateral relationships, more so, when violence is unleashed on students, as in the case of Australia. Another consequence is that students and parents in their quest for foreign education and degrees bankrupt themselves through loans taken at exorbitant interest rates from money lenders or banks, or sell agricultural land at distress rate, or pawn family heirlooms and gold ornaments. Further, the poor developing countries spend a lot of money on training and educating students, who soon after acquiring professional degrees migrate to the West for lucrative jobs or for advanced specialization. This has been a veritable brain-drain for the nation and in a way it also subsidizes the Western economy. From national point of view, it is associated with brain-drain and loss of scarce resources - financial and human - from global point of view, India supplied highly skilled scientific and technical manpower to the world market produced at a relatively low cost (J B G Tilak, 2004).

And the cruelest cut and irony is that such migrating students speak in a derogatorily manner about their countries and culture. Education is considered to be a private good rather than a public good. The attempts are made to build and strengthen the relationship between education and economic performance. The university is becoming a profit-making enterprise. 'The withering of the state patronage in the wake of globalization process is compelling the university to adopt institutional technology strategy, in order to translate the mission and methods of the university into business and operational terms' (Pramod Talgeri, 1990).

Higher education and research are elements of cultural, social, economic and environmentally sustainable development of the State, institutions and individuals. The universities are at the cusp of the millennium and have to develop competitive edge by making higher education more flexible, innovative and productive with more emphasis on quality and efficiency.

The University is a primary and unique agent of change in the society. It encourages the development of personality, the enhancement of knowledge and culture, furthers the quest for humanism and peace and promotes the integration of culture and technology. The essential purpose of education is to prepare the students for acquisition of knowledge, encourage development of talents, to provide resources and prepare the youth for the task of nation building. Universities/colleges should come out with new fellowships for poor and deserving students so that they can avail the education anywhere in the world. Educational institutes should be for public good and need not become profit-making industries.

References

Frontline (Chennai), February 12-25, 2011, p.118

Jane Knight and Hans de Wit, (1997), Internationalization of Higher Education in Asia-Pacific Countries, European Association for International Education, Amsterdam, Netherlands

Jane Knight, (1999), '*Internationalization of Higher Education*,' Quality and Internationalization in Higher Education, IMHE,

Jane Knight, (1999): 'Internationalization of Higher Education,' Pp. 13-18, in *Quality and Internationalization in Higher Education*, edited by OECD. Paris: OECD. p. 14.

Jean Dreze and Amartya Sen (1995): 'Basic Education as a Political Issue, 9(1), *Journal of Educational Planning and Administration.*

Joseph Stiglitz (2006): Making Globalization Work, Penguin: Allen Lane, p. 7.

Joseph Stiglitz, (2002): Globalization and Its Discontents, England: Penguin. p. ix

Nick Clark and Robert Sedgwick (2005), 'International Students: It's a Buyer's Market', *World Education News and Reviews*, August 2005

Pramod Talgeri, (1990): Globalization and Farewell to Classical University, *Higher Education: Challenges and Visions,* Golden Jubilee Year, University of Pune, p. 57.

Ramdev Bhradwaj, (2006): 'Internationalization of Higher Education' *Third Concept* (New Delhi) p. 37.

Rangarajan C. (2003): "Globalization and its Impact" in Uma Kapila, (Ed.) '*Indian Economy since Independence*' New Delhi: Academic Foundation, p. 729.

The *Indian Express* (Nagpur Edition) February 3, 2011, also see, M. V. Kamat, 'Overhauling Education' *Hitavada* (Nagpur daily), February 15, 2011.

The *Outlook* (New Delhi) November 15, 2010, p. 32

The *Times of India* (Nagpur Edition), November 11, 2007.

Tilak, J.B. G. (2003): "A decade of turmoil in higher education in India: Faulty Assumptions, Questionable Approaches and Undesirable Outcomes" *Higher Education, Policy and Practices*. 1(1&2) July-Sept. 2003 pp.25-31

Tilak, J.B.G. (2004): 'Absence of Policy and Perspective in Higher Education'. *Economic and Political Weekly*, May 22, 2004 p. 2159

University News, 44(48), November 27-December 03, 2006, p. 163

World Bank (2000): 'Higher Education in Developing Countries: Peril and Promise,' The World Bank, Washington, D. C.

© NIEPA

JOURNAL OF INDIAN ASSOCIATION OF SOCIAL SCIENCE INSTITUTIONS
(IASSI)

IASSI Quarterly: Contributions to Indian Social Science

Vol. 30 No. 2 April - June 2011

ARTICLES

BOOK REVIEWS

SUBSCRIPTION RATES

For India and SAARC Countries, including postage: Rs. 400/- for one year, Single copy Rs. 100/-. For other countries: US$ 75 per year or equivalent, including postage by surface mail.

Enquiries and Correspondence should be addressed to Editor, IASSI Quarterly, Room No. 76, I.I.P.A. Hostel, Indian Institute of Public Administration, Indraprastha Estate, New Delhi-110 002.

Tel: 2332 4581/2331 5284/2335 6834, Fax No.: 011-2331 5284, Website: www.iassi.org/www.iassi-ssis.org
E-mails: stiassi@bol.net.in; iassi79@yahoo.com

© NIEPA

Journal of Educational Planning and Administration
Volume XXVI, No. 2, April 2012, pp. 331-341

Innovative Universities: When, Why and How?

Daniel P. Resnick*

Abstract

Even as investment in higher education grows across the world, America's top research universities continue to enjoy a special cachet. The very best are highly ranked and enjoy a vibrant culture of innovation. Their fundamental research has produced breakthroughs in products, processes, enterprises, career opportunities, and continuing scientific and technological advancement.

Each of the top U.S. universities is a global incubation center. Like magnets, these institutions pull in students and faculty from other countries. Other nations, despite some misgivings, do not see this temporary outflow as part of a zero-sum game. They expect that their own universities, laboratories, scientists, engineers, and enterprises will benefit from this investment in human capital.

It has taken America's top universities seventy-five or more years to reach their current pinnacle. In this paper, we will ask three questions. When did these institutions emerge? Why? And how are they sustained? Answers to these questions will be relevant to government policy-makers, leaders in higher education, the science and technology community, and those who play a role in the foundations and philanthropy.

What is required to create and sustain an innovative research university? Our paper offers answers to this question based on the American experience. Policy-makers and educational leaders in the U.S. and other nations should find our argument relevant. Both will want to learn from this examination of a significant experiment in institutional development and public policy.

* Director, Center for the History of the University, UTDC 417, Carnegie Mellon University, Pittsburgh, Pennsylvania. Email: Dr0q@andrew.cmu.edu

© National University of Educational Planning and Administration, 2012

Introduction

The current challenge that universities face is to think strategically and act boldly. Universities are making changes to culture, structures and outreach that maximize their impact on society. To do this, they re-design the way faculties work, leadership is exercised, and students are recruited and instructed. They work to re-think how industry engages with education, technology enhances learning, and institutions learn from one another. As they do so, they connect globally with governments, industry, faculty, and students. Some consider the strategic thinking behind these actions a managerial revolution; others see it as entrepreneurialism (Keller, 1983; Thorp and Goldstein, 2010). We view the change-making institutions as core innovators.

Which universities in the U.S. are leading this now global process of root-and-branch innovation? They are, in my view, the private research universities. Their circumstances have made them more resourceful than the public institutions. They are, on the whole, smaller than the flagship state universities, less dependent on state funding for day-to-day operations, and much less bureaucratic. They have had to sustain themselves and grow through their own leadership, management, patronage, faculties, and governance. It is a credit to the distribution of wealth and talent in the U.S., management skills, and strong regional loyalties, that some of the public institutions have also become centers of research excellence. They have, however, been more encumbered by the politics of state funding and regulation and have, because of that dependence and constraint, been less able to chart their own direction (Duderstadt and Womack, 2003). The private research universities have had to face the challenges of the market more directly; when they plan for the future it is with a much greater sense of agency. They remain the focus of this paper.

Figure 1

Innovation has been embraced as a strategy for smart growth in no university more than Carnegie Mellon, founded in 1900 (Resnick and Scott, 2005; Schaefer, 1992). With Stanford, founded in 1891, it is the youngest of the major research universities. In little more than a century, it has transformed itself from a local and then regional technical school and arts conservatory into a cosmopolitan center of research and learning with collaborative programs around the world. When faculty talk about how this was achieved, they refer to the university's clear taste for problem-solving, and its willingness to go beyond disciplinary boundaries and seek interdisciplinary collaboration. Herb Simon, Nobel Prize laureate, saw our innovation in the founding of new departments and centers and the radical commitment to quality and excellence. (Simon, 1996, 1991). Other faculty have noted the university's work ethic, curiosity about the world, and passion for technology. Universities, however, are complex organisms, and success requires a discipline that extends through every part of the system. Are there rules for innovative universities to follow? Based on Carnegie Mellon's example, we have listed three at the end of this paper.

European Models

How did the U.S. develop research universities? American higher education owes a great debt to Europe. Before independence in 1776, the American colonies had only nine chartered colleges, almost all of which prepared students for the clergy (Veysey, 1965; Rudolph, 1962, 1990). The exception was Benjamin Franklin Academy, the forerunner of the University of Pennsylvania. After independence was declared in 1776, this small nation, then with fewer than four million people, was pre-occupied with farming, building, mining, business, exploring the Western territories, and securing its borders. Those Americans who sought advanced educational opportunities went abroad to more developed societies for courses, degrees and directed touring. When they returned, the institutes and graduate programs they established were based on European models.

Great Britain provided the model for America's undergraduate residential colleges, but France and Germany provided the models for graduate education (Anderson, 2004). Americans turned to France, particularly, for knowledge about how to meet the needs of a developing nation in bridges, roads, mines and dams (Emmerson, 1973). Civil and military engineering drew on the practices of the Ecole Polytechnique and the schools of mining, bridges and roads. French programs heavily influenced the curriculum of West Point (founded in 1802), Rensselaer Polytechnic (founded in 1824), and other newly created institutes of technology (Seely, 1993). Those interested in public health, sanitation and urban planning traveled to France in the first half of the 19th century, in significant numbers (Bertier de Sauvigny, 1985).

American research universities were developed on the German model in the last quarter of the nineteenth century (Geiger, 1986, 2004; Clark, 2006). Americans who went abroad to do graduate work were impressed by the passion for basic research, the organization of laboratories and the seminar as an institution. When they returned, they became the first generation of graduate faculty in the research universities, organizing disciplinary research and recruiting other faculty and graduate students. The new research universities granted masters' and doctors' degrees, maintained strong undergraduate baccalaureate programs, guided doctoral research, set up science and engineering laboratories, built up libraries,

conducted graduate seminars, and founded scholarly journals. (Brown, 1995) After these schools were created, Americans no longer had to go abroad for advanced study.

Johns Hopkins was the first American research university, founded in 1876, a century after the new nation's independence. It was a private institution, created by the benefaction of a Quaker businessman. The gift was the largest by any donor at that point in American history. The German universities, not sharply distinguished one from another in American eyes, provided the model (Hawkins, 1960). American universities, however, modified the model in many ways, making administration much less autocratic, diminishing the control of research direction by chair holders and institute directors, empowering faculty and encouraging the foundation of professional schools in areas where they had not existed before. In this way, the underlying cultural values of the new nation shaped its research-oriented university institutions.

Private Research Universities

By 1900, there were nine private research universities, out of a total of fourteen. They founded a professional grouping of public and private institutions to promote their common interests – the Association of American Universities [AAU]. The nine private founding members still active within the association are Columbia, Chicago, Cornell, Harvard, Johns Hopkins, Penn, Princeton, Stanford, and Yale. The three public members, also still active within the association, are University of California, Berkeley; University of Michigan, Ann Arbor; and University of Wisconsin, Madison. Even though subsequent membership has been by invitation only and has required the support of three quarters of the members, the rolls of the association have grown in the course of the last 110 years to sixty-one. There are currently twenty-six private research universities in this group, along with 35 public. McGill and the University of Toronto joined as Canadian members in the 1920s (AAU, 2011). A comparable group of twenty leading universities with major research achievements in the United Kingdom, known as the Russell group, was founded in 1994. Unlike the American case, all of the UK group members are state-supported institutions (Russell, 2011).

American research universities innovated in creating schools, departments and disciplines, from chemistry and philosophy to engineering and education. Research required major investments, and they understood that the cost of this research in released time to staff and equipment for laboratories was their responsibility. They would, of course, assist faculty in finding additional funds from industrial or private sources. The federal government was not yet a significant provider of funding. Although the Merrill Act (1862), the Hatch Act (1887), the Smith-Lever Act (1914), and the Smith-Hughes Act (1917) opened up small streams of federal funding for agriculture and then vocational training, most of that would be directed to public land-grant institutions.

Knowledge and skills in America were also being developed on a separate track, outside the universities. The new nation was more preoccupied with invention, questions about how things worked, and practical technical training, than it was by formal learning (Hughes, 1989). The bulk of applied research was supported by industries and localities in industrial laboratories or the burgeoning technical institutes (Servos, 1994).

Thomas Edison founded Menlo Park, America's first industrial laboratory, in the same year that Johns Hopkins was established (Israel, 1998). More than twenty independent technical institutes and engineering colleges were founded from 1824 to 1900. Some—like

Massachusetts Institute of Technology (MIT, founded in 1861), California Institute of Technology (Caltech, founded in 1891 as Throop University), and Carnegie Institute of Technology (Carnegie Tech, founded in 1900, predecessor of Carnegie Mellon)—would later transform themselves into technological universities and form an association to advance their common interests in engineering and technology-based education. The AAU, however, remained the principal voice of America's research universities. Carnegie Mellon joined the association in 1982.

Growth after the Second World War

America's research universities did not grow very much in the interwar period, the second half of which was marked by the longest and deepest recession in U.S. history. The picture changed 1939-45, however, when university scientists and engineers began their ongoing collaboration on a very large scale with federal agencies. The main wartime effort, the Manhattan Project, came to federate many others (Groueff, 1967; Rhodes, 1986). An extraordinary feat of engineering—an American, British and Canadian research and development effort—with more than 100,000 people employed at more than thirty sites to develop an atomic bomb. Vannevar Bush (Zachary, 1997), who had been Dean of Engineering at MIT and an inventor in his own right, was a key figure in the policy-making that made this project possible. He served as President Roosevelt's unofficial scientific advisor and was Director of the Office of Scientific Research and Development, bringing some six thousand scientists into the war effort. The President asked him to develop a post-war plan for carrying forward into peacetime the wartime collaborative relationship of industry, universities, and the military.

Science, The Endless Frontier (Bush, 1945,1960), the title of the report that he submitted, has served as the blueprint for post-war development in areas that ranged from basic research funding to national security and public investment in the education and training of engineers and scientists. "Basic research," Bush argued, "leads to new knowledge. It provides scientific capital. It creates the fund from which the practical applications of knowledge must be drawn. New products and new processes do not appear full-grown. They are founded on new principles and new conceptions, which in turn are painstakingly developed by research in the purest realms of science." (Bush, 1945, p. 19)

Industry itself dominated the field of applied research, but basic research belonged to the universities and would make its own contribution to applications. Given the pragmatism of American culture and the unknown outcomes of research, basic research would yield technological advances. "Today," he wrote, "it is truer than ever that basic research is the pacemaker of technological progress. In the nineteenth century, Yankee mechanical ingenuity, building largely upon the basic discoveries of European scientists, could greatly advance the technical arts. Now the situation is different." (Bush, p. 19)

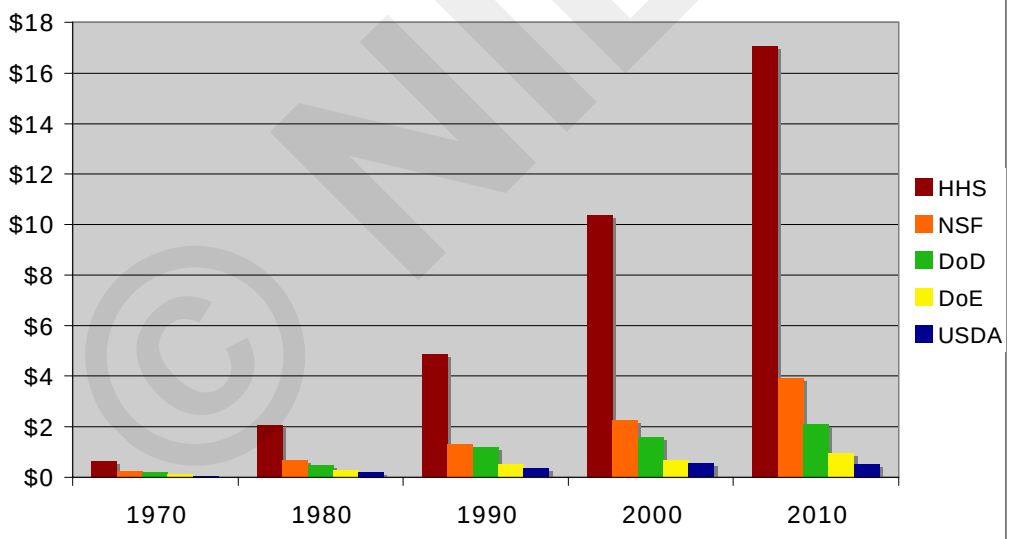
Bush, who had worked both in universities and industry, knew that industry rarely allowed investigators to push ahead on their own agendas. Freedom to investigate was lacking in the industrial laboratories but essential for progress: "Industry is generally inhibited," he wrote, "by preconceived goals, by its own clearly defined standards, and by the constant pressure of commercial necessity. Satisfactory progress in basic science seldom occurs under conditions prevailing in the normal industrial laboratory. There are some notable exceptions, it is true, but even in such cases it is rarely possible to match the

universities in respect to the freedom which is so important to scientific discovery." (Bush, p. 19)

Implementing the Vannevar Bush Plan

University spending for basic research between the two world wars had increased by only one-half, and work in the endowed research institutes had declined. Bush estimated that in 1940, industrial spending was about $250 million, internal government research spending $69 million, college and university spending $31 million, and research spending in endowed research institutes $4.5 million (Bush, 1945, pp. 6-7, 20). To change the research environment after the war ended in 1945, he proposed a federal expenditure that would rise to $50 million per year after a 5-year period and stay at that level (p. 22). The first appropriations by Congress, however, were below that level. The funding patterns did not change radically until the launching of Sputnik in 1957.

Figure 2
Federal Funding by Agency of University Research
1970-2010



Sources: NSF Federal Funds for Research and Development, Detailed Historical Tables: Fiscal Years 1951-2002, Table B and Table 11; Federal Funds for Research and Development, Fiscal Years 2007-2009, Table 10.

Bush's main agenda was three-fold: creation of a national research foundation, later called the National Science Foundation, to oversee investment in science and education; funding for medical research; and support for scientific research on military projects. Members of the AAU were the agents best equipped to carry forward this ambitious science and technology plan. They would provide the means for replacing research in a war-battered

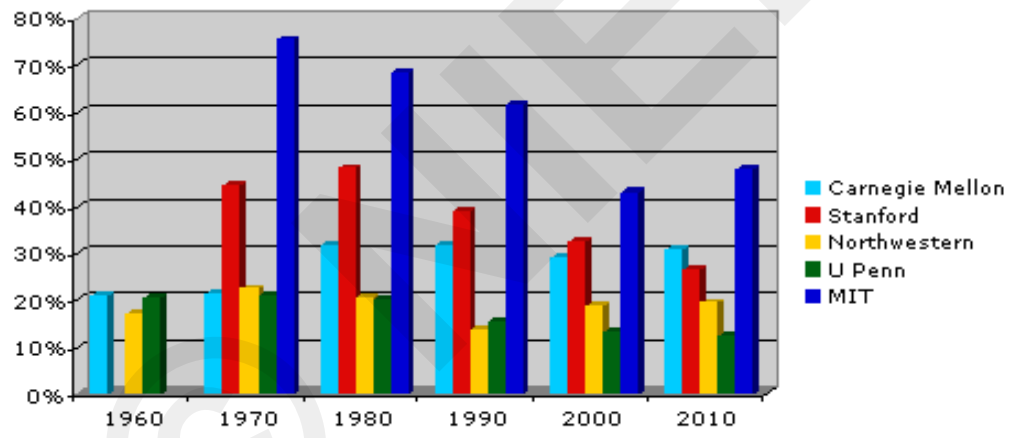
Europe with American knowledge. Their efforts would advance national goals in science, education, health and security.

This vision started to describe reality in key areas after the Soviet Union launched a satellite into space. An estimate $20B per year in 2000 constant dollars made its way to the universities from the late fifties to 2004. Medical research, the sciences, defense, and technology were the principal beneficiaries, as the attached figure showing funding by the major federal agencies indicates.

Federal research funding, in turn, came to account for a large share of research university budgets. In retrospect, we note that heavy support for basic research created a tight and dependent relationship between federal agencies and the strongest universities.

The attached figure, based on data collected by the author of this paper, illustrates this development for five front-running schools, 1970-2010.

Figure 3
Federal Grants and Contracts as a Portion of Total Operating Expenses for Five Selected Private Universities 1960-2010

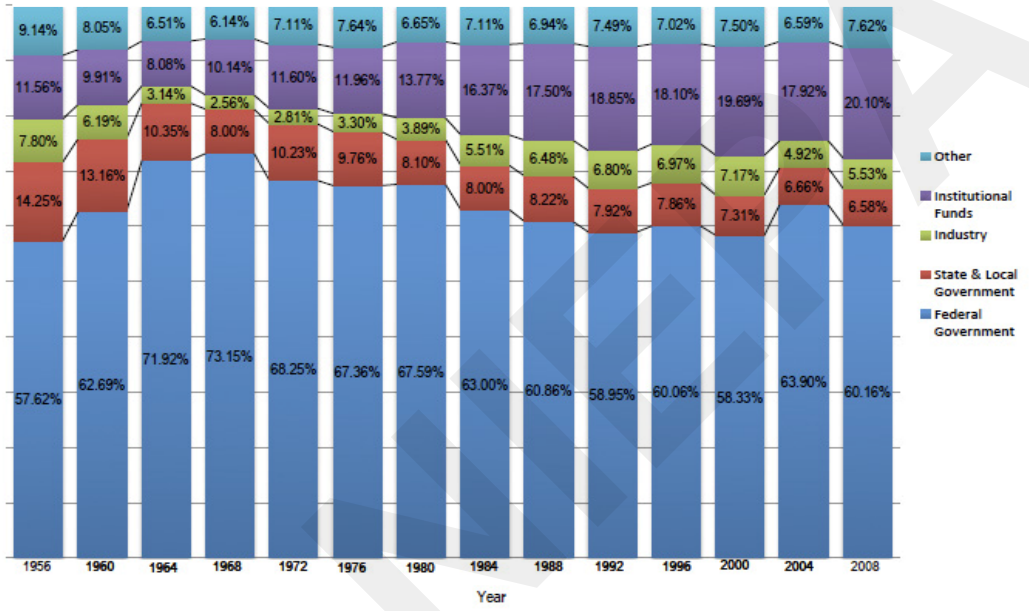


Spending rose and fell within agencies, uncoordinated by central oversight, creating problems of continuity, space and staffing for the universities. Federal grants did not pick up all indirect costs. Overhead recovery was capped below actual outlay, as universities found themselves responsible for an ever-increasing share of research expenditures. Robert Berdahl, President of the Association of American Universities, highlighted these and other problems in his 2009 report to the National Research Council Committee on Research Universities. The attached figure accompanied that report (Berdahl, 2009).

The leading research universities were innovative. They were able to incorporate new programs, compete for funding, modify faculty size, diversify, and sustain lively undergraduate programs in the face of both opportunity and uncertainty. They were well prepared for a partnership in which 70 federal agencies in all provided a total of 31.2 billion dollars to America's colleges and universities in 2010 (Berdahl, 2010). How did these

universities manage growth and further innovation? From the lessons of their experience, we can extract a few rules: plan strategically, benchmark performance and reward achievement. Carnegie Mellon embraces these precepts enthusiastically, even though they appear in no rulebook or manual.

Figure 4
Proportion of R&D funding at Colleges and Universities Over Time



Plan strategically

Universities move forward by seizing opportunities or creating them. Yet, the great distraction of innovative universities is opportunism. To stay on track, universities develop strategic plans. These plans establish priorities for investment in sites, programs and people, and a rationale for decision-making. At the beginning of the process, there may be disagreements; at the end there will be consensus.

The creation or renewal of a strategic plan is high on the agenda of an incoming president. In the planning process, the president shows his or her ability to engage with different university constituencies and mobilize them. The president will work with trustees, faculty, staff, alumni, and students to develop a mission statement, a set of priorities and an implementation strategy. As leadership teams are appointed in each area of concern, the president learns where investments need to be made and who can be the most effective leaders. Planning begins with a vision. Strategic plans need to be reviewed periodically, and Carnegie Mellon posts its plan and milestones in the planning process online (Carnegie Mellon Strategic Plan, 2008).

Benchmark Performance

Faculty members belong to departments, centers, schools and institutes. In an innovative university, the institution demands quality and excellence. Some areas will need to expand and others to shrink. The best way to validate internal judgments of quality and need is to invite assessments by external peers who have talked on-site with faculty and students, reviewed documentation, and discussed their impressions and judgments with advisory board colleagues before presenting them to the president and provost.

Through the advisory board visits, many goals are achieved. The units are led to review their own goals, priorities, successes and needs in preparing for the visit; the president and provost receive the best external assessment available on the strengths and needs of a unit; and individual members of the Board of Trustees gain the information they need as stewards through an in-depth, up-close view of an academic unit. Carnegie Mellon has posted a detailed description of its advisory board process online (Carnegie Mellon President's Advisory Boards, 2011).

Reward Achievement

Innovative private universities are corporate entities, but they are also communities—online and face-to-face. They share news of achievement, new arrivals, seasonal rituals, retirements and, inevitably, deaths. The campus media provide a rich information network to keep faculty, staff, students and alumni apprised of what is happening, and encourage them to celebrate the successes of others.

Faculty receives awards for research and teaching, students are acclaimed for receiving fellowships, and staff are elected to lead professional associations. All these happenings are noted, and many are followed by receptions, dinners and symposia. Although researchers may work in isolated settings, breakthroughs are immediately noted and widely heralded. In these celebrations, all receive the recognition and respect that they merit.

Undergraduate research at Carnegie Mellon is celebrated through an annual Meeting of the Minds symposium, with presentations and prizes. It is rare to find a university event that does not offer refreshments of some kind, and students on limited budgets with voracious appetites will congregate at these events. A Carnegie Mellon undergraduate this past year developed an application for mobile devices that machine reads university digital calendars to direct undergraduate users to on-campus meetings with free food. Needless to say, students at peer universities were very interested in this application. This was an unanticipated by-product of a campus that celebrates community achievement.

Conclusion

Visitors to the U.S. in the 1830s, like Alexis de Tocqueville, found it unlikely that Americans would have any reason to prize higher education and intellect. The cultivation of intellect was not a goal of American society, and its seemingly boundless resources seemed to require little schooling to exploit. The growth of science, technology and competition began to force changes in the kind of education that was valued, but the process moved slowly. Some Americans have not yet been convinced that the federal government needs to be the major investor in basic research and that this investment will benefit America and a larger world. The reminder of Vannevar Bush in 1945 is still timely. "Today it is truer than

ever that basic research is the pacemaker of technological progress. In the nineteenth century, Yankee mechanical ingenuity, building largely upon the basic discoveries of European scientists, could greatly advance the technical arts. Now the situation is different." (Bush, 1945, viii)

America's research universities, like its liberal arts colleges and technical institutes, are important contributors to the culture of America, its economic growth, and the know-how of its work force. The research universities, specifically, have produced inventions, processes, tools and innovations that seem innumerable. John Cole, former provost of Columbia, has done an excellent job of presenting them (Cole, 2009). Moreover, many research universities have provided links to assessments of their contributions on the AAU website, http://www.aau.edu/. The great universities, however, live with a paradox. The federal research support that has made so much of their achievement possible has also created a deep dependence.

There are signs that the interest of other nations in America's great research universities and their investment in their own national institutions will encourage continuing American government support for its university sites of excellence. Private and public research universities alike look forward to renewing, extending and enhancing their partnership with the federal government. With that kind of support, American research universities will continue their international outreach and the dynamic of innovation will be sustained.

References

Anderson, R.D. (2004): *European universities from the Enlightenment to 1914.* Oxford: Oxford University Press.

Berdahl, R. (2009): Renewing the Partnership: Thoughts On The Current Status Of American Research Universities. A Presentation to the National Academy's Board on Higher Education and Work Force. November 16, 2009. http://www.aau.edu/about/speeches.aspx Received April 14, 2011.

Berdahl, R., (2010): Maintaining America's Competitive Edge: Revitalizing the Nation's Research Universities. Submitted to the National Research Council Committee on Research Universities September 30, 2010. http://www.aau.edu/about/speeches.aspx Received April 14, 2011.

Brown, D.K. (1995): *Degrees of control: A sociology of educational expansion and occupational credentialism*. New York: Teachers College Press.

Bush, V. (1945, reprint 1960): *Science: The endless frontier*. Washington, D.C.: National Science Foundation.

Carnegie Mellon Strategic Plan, 2008: http://www.cmu.edu/strategic-plan/Adobe-Reader/index.html Accessed April 11, 2011.

Carnegie Mellon, President's Advisory Boards: http://www.cmu.edu/advisory-board/purpose-process.html Accessed April 11, 2011.

Clark, W. (2006): *Academic charisma and the origins of the research university.* Chicago: The University of Chicago Press.

Cole, J.R. (2009): *The great American university: Its rise to preeminence, its indispensable national role, why it must be protected*. New York: Public Affairs.

Duderstadt, J.J, & Womack, F.W. (2003): *Beyond the crossroads: The future of the public university in America*. Baltimore: The Johns Hopkins University Press.

Emmerson, G.S. (1973): *Engineering education: A social history*. New York: David and Charles (Holdings) Limited.

Geiger, R.L. (2004): *To advance knowledge: The growth of American research universities, 1900-1940*. New Brunswick: Transaction Publishers.

Goldstein, B., & Thorp, H. (2010): *Engines of innovation: The entrepreneurial university in the twenty-first century*. Chapel Hill: The University of North Carolina Press.
Groueff, Stefane (1967, 2000): *Manhattan Project: The Untold Story of the Making of the Atomic Bomb*. Boston: Little, Brown.
Hawkins, H. (1960), *Pioneer: A History of The Johns Hopkins University, 1874-1889*. Ithaca: Cornell U. Press.
Hughes, T.P. (1989): *American genesis: A century of invention and technological enthusiasm, 1870-1970*. Chicago: The University of Chicago Press.
Israel, P (1998): *Edison: A Life of Invention.* New York: John Wiley & Sons.
Keller, G. (1983): *Academic strategy: The management revolution in American higher education*. Baltimore: The Johns Hopkins University Press.
Resnick, D.P., & Scott, D.S., eds. (2004): *The Innovative University.* Pittsburgh: Carnegie Mellon University Press.
Rhodes, Richard (1986): *The Making of the Atomic Bomb*. New York: Touchstone.
Rothblatt, S., & Wittrock, B. (1993): *The European and American university since 1800*. Cambridge: Cambridge University Press.
Rudolph, F. (1962): *The American College and University – A History*. Athens, GA: The
Schaefer, L.F. (1992): *Evolution of a national research university: 1965-1990. The Stever administration and the Cyert years at Carnegie Mellon*. Pittsburgh: Carnegie Mellon University Press.
Seely, B. (1993): Research, engineering and science in American engineering colleges: 1900-1960. *Technology and Culture,* Vol 34 No 2, 344-386.
Servos, J.W. (1994): Changing partners: The Mellon Institute, private industry, and the federal patron. *Technology and Culture* Vol 35 No 2, 221-257.
Simon, H. (1996, 1991): *Models of My Life*. Boston, MIT Press.
Thorp, H. and B. Goldstein (2010): *Engines of Innovation: The Entrepreneurial University in the Twenty-First Century*. Chapel Hill: University of North Carolina Press.
Thorp. Holden and Buck Goldstein, *Engines of Innovation: The Entrepreneurial University in the Twenty-First Century*. Chapel Hill: University of North Carolina Press, 2010.
University of Georgia Press.
Vest, C.M. (2007): *The American Research University: From World War II to World Wide Web*. Berkeley: University of California Press.
Zachary, G.P. (1999): *Endless frontier: Vannevar Bush, engineer of the American century*. Cambridge: The MIT Press.

© INFPA

INDIAN JOURNAL OF AGRICULTURAL ECONOMICS
(Organ of the Indian Society of Agricultural Economics)

Vol. 67 | JANUARY-MARCH 2012 | No. 1

CONTENTS

Annual Subscription Rates

Individual Membership Fee : Rs. 500.00; £ 50.00; $ 100.00.
Life Membership Fee : Rs. 5,000.00; £ 500.00; $ 1000.00.
Institutional Subscription : Rs. 1000.00; £ 75.00; $ 200.00.

Please address correspondence to the Hon. Secretary and Treasurer, The Indian Society of Agricultural Economics, C-104, First Floor, Sadguru Complex I, Near Vagheshwari, Gen. A.K. Vaidya Marg, Goregaon (East), Mumbai - 400 063 (India).

Telephone : 022-28493723; Fax : 091-022-28493724; email : isae@bom7.vsnl.net.in;
website: www.isaeindia.org

© NIEPA

Journal of Educational Planning and Administration
Volume XXVI, No. 2, April 2012, pp. 343-364

Exploring Technical Efficiency of Rural and Urban Lower Secondary Schools in Uganda

James Wokadala*

Abstract

This study was set out to explore technical efficiencies of rural and urban lower secondary schools in Uganda. The study was motivated by the desire to establish effects of school and community socio-economic factors on schools' technical efficiencies. Using DEA and Tobit model analytical techniques and data collected from 283 schools in Uganda, the study established a little variation in efficiency between rural and urban schools with most of them operating below optimal. The factors responsible for inefficiency in schools are: wide differences in students' cognitive skills, student age, inadequate teacher accommodation, day schooling system and school USE status. However, factors with significant positive effect on efficiency are: school size, per student household expenditure and parent education. Most of the factors fundamental to school efficiency do not vary significantly across the rural-urban specifications. Therefore, possible interventions to improve student achievement and school performance could consider challenges facing rural and urban schools as similar.

* 657-0016, 11-9 Shinoharadai, Nada-Ku Hyogo-Kobe City, Okamoto Villa House R210 and Email: jwokadala@gmail.com

The author is grateful to the anonymous referee for constructive comments that have improved the contents of the article.

© National University of Educational Planning and Administration, 2012

Introduction

Exploration of technical efficiency of schools is important especially in an African developing economy like Uganda where most schools are financed by the central government budget. Understanding why these schools vary in the degree to which they efficiently utilize the available resources is vital to addressing concerns of public policy decision makers and improving quality of school outcomes necessary for economic growth. Education is necessary for improving peoples' lives through acquiring knowledge and skills. The improved human capital is to some extent associated with increased incomes, household wealth and general performance of the nation. Public investment in the sector is necessary and somewhat inevitable. The introduction of Universal Primary Education (UPE) in 1997 increased school enrolment from about 3 million in 1996 to about 7.5 million in 2007 (MoES, 2008). In effect, primary education experienced massive enrolment growth and signaled social demand for access to secondary schooling, as pupils completing the primary cycle transited to the next stage. This then called for government action to absorb the mass primary school graduates.

In 2007, Uganda government introduced Universal Secondary Education policy and this meant more investments into the sector. Expenditure per capita for secondary education increased (42 % increase) from US $ 97.6 in 2002 to US$ 138.9 in 2007. Consequently, one would expect to see a strong and vibrant education system vital for economic growth and prosperity, which may not be the case. The expenditure increase does not match with some internal efficiency indicators. For instance, from 2002 to 2007, transition rate to senior one increased from 56.1 percent to 68.6 percent, completion rate at senior four increased from 22 percent to 35 percent, and transition rate to senior five slightly increased from 41 percent to 44 percent (MoES, 2010). Two inefficiency concerns are identified from these trends. Firstly, there are high drop rates at lower secondary, as seen from low completion rates; secondly, the lower secondary graduates may not be prepared enough to transit to the next stage of secondary education, as depicted by relatively low transition to senior five. The inefficiency concerns are also emphasized in Uganda's National Development Plan (2010/11 – 2014/15, pp 213), which partly states that: *Efficiency and quality of secondary education remains very low due to poor management of school resources and poor implementation of efficiency enhancing policies.* The results of 2008 national standardized tests for senior two students indicate - 81.9 percent of the students reached a minimum proficiency[1] level in English, 69.4 percent in mathematics and 36.7 percent in biology, respectively. However, in 2009, proficiency levels declined in the three subjects, recording 76.0 percent in English, 58.8 percent in mathematics and 36.3 percent in Biology, and the proficiencies varied across geographical location and school ownership (MoES, 2010). The low performance raises the issue of wasteful operation below full capacity and the desire for optimum institutional size.

Several research works have explored efficiency of education systems in developed economies (e.g. Rassouli-Corrier, 2007; Kang and Greene, 2002). Other recent efficiency studies have focused on two-step algorithm to analyze school efficiency (e.g. Jeon and Shields, 2005). Most studies that examined efficiency of secondary schools have been limited to urban areas. Besides, other research works have focused on efficiency differences of

[1] This implies those students that acquired the competencies specified at that particular education level.

private and public schools (e.g. Jimenez et al., 1988 &1991). Few studies have attempted to explore efficiencies of urban and rural schools (e.g. Mancebon and Brandres, 1999; Kantabutra and Tang, 2006). The comparative analysis in developing economies like Uganda has not been examined. Besides, these studies were silent on the endogeneity problem attributed to school choice or location. Without taking the endogeneity problem into account, it may show that significant efficiency differences exist between rural schools and urban counterparts. In this study, the author tests if location is exogenous to school efficiency.

The literature that has emerged attempting to establish the link between education inputs and outcomes provides scanty evidence about school input resources and its effects on outcomes in Ugandan schools. Besides, there is little evidence of growth promoting externalities despite increased funding to the education sector. Specifically, the study is guided by the following research questions.

1. How do school factors affect its technical efficiency? More specifically, how do school size, school ownership, school boarding type, school USE[2] status, teacher-house ratio, availability of career guidance services, school use of electricity and heterogeneity of students correlate with school technical efficiency?
2. How do community socio-economic factors affect school technical efficiency? More specifically, to what extent do school location, student's average age, education level of household head, per student expenditure on education, and region status influence school technical efficiency?

Evaluation of performance of education institutions requires methods that address challenges of multidimensional setting. For instance, from the output side, a good performing school is regarded as one with high national matriculation examinations scores, assuming that inputs are indifferent across schools. Whereas from input side, a school that utilizes fewer resources is regarded as better performing, assuming outputs are similar across schools. This may not be the case given the different funding mechanisms among public and private institutions. Therefore, a suitable method is required to measure inputs and outputs relation in such setting. Using Data Envelopment Analysis (DEA) methodology at first stage, the study is set to measure technical efficiency of individual schools. This is an optimization technique that transforms inputs into outputs more exactly via an output oriented model. Second stage analysis employs tobit model to establish effects of school and community socio-economic factors on technical efficiency of rural and urban schools. Measuring efficiencies of schools has been on the increase in the recent past, in particular, when there are increased accountability systems.

The outline of the study is the following: the subsequent sections provide theories on efficiency in the context of education, a review of previous literature related to school efficiency and its measurement, review of school and community socio-economic factors that influence school efficiency, a framework for examining school technical efficiency, the methodology for measuring and exploring determinants of school technical efficiency, as well as remedies to endogeneity problem. The results for both stage 1 and stage 2 analysis, discussions and conclusions constitute the last sections.

[2] This literary imply schools implementing the Universal Secondary Education (USE) policy, of allowing students attend free education in lower secondary schools.

Efficiency in Context of Education

An education production system may be called efficient if it attains the maximum level of output for a just or minimum level of investment. Understanding education systems requires multifaceted theories that explain production processes and maximizing investment resources for development of human skills. The debate regarding efficiency theory revolves around the question of how efficient education institutions are using their resources to produce high level education outputs. This paper only considers commodity (output) description such as "value added" standardized tests of academic achievement, on which data is reliably available compared to other measures, Hanushek and Luque (2003).

A further analysis of this efficiency theory and treatment is provided by Fare, Grosskopf and Lovell (1994), who defined organizational efficiency to account for multiple inputs and outputs. They defined efficiency of an organization to comprise of two components that include *technical efficiency* and *allocative efficiency*. According to them *technical efficiency* reflects on the ability of an organization to obtain maximum outputs for a given set of inputs, which this study attempts to evaluate. In general sense, it implies productivity improvements associated with producing more outputs with less or same level of input, and/or producing the same outputs while consuming fewer resources. It is also regarded as pure relation between inputs and outputs taking the production possibility frontier into account (Bailey, 2002). On the other hand, *allocative efficiency* reflects on the ability of an organization to use inputs in optimal proportions given their prices. The two measures combined provide a general measure of *total economic efficiency*. Accordingly, the measurement of efficiency in the study is related to the relationship of internal effects and outputs of the education system (where the aim is to increase the efficiency of the resources).

Review of Previous Related Studies

The studies on school efficiency started with the works of Farrell (1957) that preceded the research by Debreu (1951) in trying to understand concepts of organizational efficiency and its measurements. These methods both accounted for multiple inputs and outputs. Another study was the famous Coleman report (Coleman et al., 1966) that systematically attempted to identify factors that explain the successful school performance at elementary and secondary schools. Since then, several research works followed suit to consider effects of family background, peer pressure, school resources, community and public functions on school achievement, as discussed in subsequent sections.

School factors and its technical efficiency

Most studies have identified school factors as critical in school academic achievement. Noulas and Ketkar (1998) argue that, it is apparent that entry grade points, enrolment rates, class attendance and reading time are important determinants of school performance. In other researches, school efficiency is affected by school size, library utilization, teacher-student ratio, proportion of internal teachers and sorting of students by their skills (e.g. Bradley et al., 2001; Oleksandr, 2004). Kantabutra and Tang (2006) established that school size contributes positively to efficiency in both rural and urban schools, while class size has a

positive effect on urban schools and a negative effect on rural schools. Kirjavainen (2008), while analyzing the views of the staff members of nine upper secondary schools in Finland that were in the upper and lower tails of the efficiency distribution, established that teachers in inefficient schools were more often frustrated by the low school achievement. Moreover, Kirjavainen and Loikkanen (1998), using Tobit model, found public schools as more efficient than private schools, a finding that is to be tested on Ugandan data. Heyneman & Jamison (1980) examined student learning in primary schools in Uganda focusing on textbook availability and other related school factors.

The study adopts several previously used variables, such as school size, teacher-student ratio, school ownership and number of certified teachers. However, additional variables that have been considered necessary and non-discretionary in nature are school boarding type, school USE status, and school use of electricity.

Community Socio-economic Factors and School Technical Efficiency

Some of the studies identify community factors as fundamental in influencing school efficiency. For instance, the "Coleman Report" (Coleman et al., 1966) noted that family background and the characteristics of students' peers were more important to student achievement, and Hanushek's (1986) came to much the same conclusion, that evidence linking the level of per-student expenditures to student achievement is extremely weak and disappears when differences in family background are taken into account. The socio-economic and family status, mostly measured by family income or education level, is regarded as one of most significant factors affecting school performance. For instance, low socio-economic status is associated with conditions that make learning more difficult and vice versa (e.g. Rutter et al., 1979; Jeon and Shields, 2005; Rassouli-Corrier, 2007). Moreover, Johnes et al. (2007), while investigating the level of efficiency of education service providers in England using a multivariate analysis, found that student-related variables, such as gender and age mix are more important correlates of school efficiency than staff-related variables.

Urban schools which tend to attract students from higher socioeconomic family status than their rural counterparts, often have more advantages in operations compared to rural schools. For instance, Mancebon and Brandres (1999), who evaluated the efficiency of 35 public-sector secondary schools in Spain, found urban schools as more efficient than rural counterparts. Similar results were noted on Thai secondary schools by Kantabutra and Tang (2006). Kantabutra (2009), while examining urban-rural effects on public upper-secondary school efficiency in northern Thailand using non-parametric technique, found that urban schools are more efficient and practice different production technologies than rural schools in absolute terms. In Sub-Saharan Africa, Cooksey, Balze, and Burian (1998) revealed that urban schools were more efficient than rural ones in Tanzania in terms of school access and performance. Besides, regional disparities are quite pronounced and gross enrolment varies quite considerably across regions. Soteriou et al. (1998) revealed insignificant efficiency differences between urban and rural secondary schools in Cyprus. On the other hand, several rural community characteristics benefit rural students given that rural communities often see their school providing cohesion and identity. The cohesiveness could generate sense of responsibility in the community and make schools perform to acceptable standards (Ruggiero and Vitaliano, 1999). Rural schools also usually serve close-knit communities in

which the school plays an important role and can be a vibrant gathering center and symbol of pride (Miller, 1995; Pritchard, 2003). Such schools thus benefit from closer ties between school and community and also provide local economic benefits, since closing rural schools may strangle rural communities (Bingler et al., 2002). These contradicting views, notwithstanding the country differences, stand to be tested using secondary educational data in Ugandan context.

Hoxby (2000) pays close attention to endogeneity and he found that more competition is associated with lower per student spending and may not necessarily imply improved school *economic* efficiency. Endogeneity is a general concern in the efficiency measurements. Efficiency differences between urban and rural schools may be due to exogenous circumstances, but not necessarily location. The establishment of schools in rural or urban areas may be attributed to demand for education, and costs both to service provider and recipient. In effect, Hoxby (2000) proposes an instrumental variable approach as remedy to this shortcoming, which has been employed by several authors (e.g. Staffan, 2006; Dee, 1998 and Sander, 1999). This study examines endogeneity that may be attributed to environmental factors outside the control of the school.

It is pertinent that various community factors have been identified that are critical to the study. Particularly, the student's demographics, such as age and availability of career guidance services, household expenditures on education and education of household head as measures of community socio-economic status, that have been tested on Ugandan schools' data.

Framework for Exploring School Technical Efficiency

Following the studies by Smith and Street (2006) and Mandl et al. (2008), a new framework for this study is developed (Figure 1). The framework is premised on the idea of production possibility frontier that indicates feasible output levels given the scale of school operations. The higher outputs registered in the given school for a given input set, or the lower the input for a given output, the more efficient the school.

The technical efficiency measurement of obtaining outputs from given set of physical input resources used in production could be linked to theory of learning from experience. The theory was based on a learning cycle hypothesis (March and Olsen, 1975), which posits that there is effect of organizational knowledge and the resulting efficiency frontier serves to operationalize competitiveness and organizational survival. As depicted in Figure 1, the theory postulates that managerial cognitions and preferences affect decisions. The managerial decisions affect organizational behaviours leading to environmental responses. March and Olsen (1975) further emphasize that decision-making process is related to maintenance of the organization as a social unit as well as collective action for substantial results. Such processes are sometimes influenced by the environmental factors both controllable and uncontrollable.

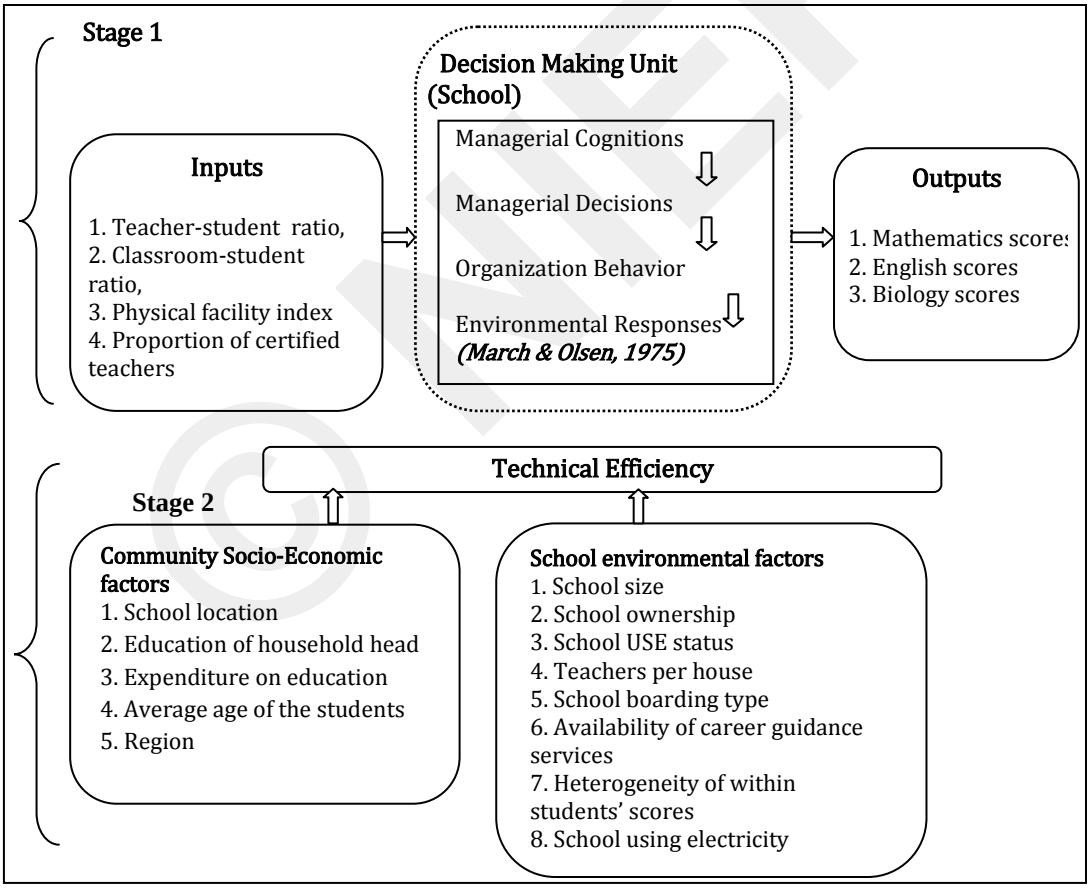
There are broadly two categories of decision variables that may affect school technical efficiency. The discretionary[3] factors that are under the control of the school and non-discretionary factors that are regarded uncontrollable external disturbances to the school.

[3] Discretionary inputs are those whose quantities are under the control of the school or the inputs that the school (DMU) can change at will (Afonso and Aubyn, 2005).

The decision variables in the school organization that may be manipulated by decision rules constitute stage one of the analysis and are further categorized into inputs and outputs as illustrated in Figure 1. The inputs are manipulated in a way that an increase in their value would equivalently increase outputs. Any school decision rule on the discretionary decision factors could affect or shift the state of the production frontier and the school family peers operating near or around the frontier. Stage two of the analysis constitutes factors that are regarded uncontrollable external disturbance to the school organization. A single or a combination of non- discretionary factors could change the state of the school efficiency system. The factors under this category are also indicated in the framework categorized under school environmental and community socio-economic factors. All these factors are expected to have varying impacts of different magnitudes and direction on school technical efficiency.

FIGURE 1

Framework for Exploring School Technical Efficiency



Source: By Author based on Smith and Street 2006 & Mandl et al. 2008

Methods for Measuring and Exploring Determinants of School Technical Efficiency

Various methods have been developed and the use of particular analytical techniques depends on study focus and the availability of data. Efficiency estimates are derived indirectly after taking into account the unlatent phenomenon, Coelli et al (1998). The study estimates the school technical efficiency using DEA, a method used to transform inputs into outputs more exactly via an output oriented BCC (Banker, Charnes, and Cooper) model, as developed by Banker, Charnes and Cooper (1984). The purpose of DEA is to construct a non-parametric piecewise envelopment frontier over the data points in such a way that all observed points lie on or below the production frontier. DEA is a data driven approach and the shape of the efficiency frontier is determined by the data. The efficiency frontier is constructed of linear segments that join up those observations with the highest ratios of output to input, and generate an 'envelope'.

The best way to introduce DEA techniques is via the optimization and ratio form using mathematical programming optimization problem. Farrell (1957); Charnes, Cooper and Rhodes (1978) proposed a model which had an input orientation and assumed constant returns to scale (CRS). However, subsequent authors, such as Banker, Charnes and Cooper (1984), also proposed variable returns to scale (VRS) model. The model by Charnes, Cooper and Rhodes (1978), based on CRS measures efficiency of Decision Making Unit (DMU), obtained as the maximum of a ratio of weighted outputs to weighted inputs subject to the condition that similar ratios for every DMU be less than or equal to unity (one). Assume each DMU uses M inputs to produce S outputs. For the j^{th} DMU, the input and output vectors can be represented as X_j and Y_j respectively, with M*N input matrix, X, and S*N output matrix Y representing the data of all N DMUs. For each DMU, a measure of the ratio of all weighted outputs over all weighted inputs is calculated. Precisely, to obtain the optimal weights that measure the efficiency, the following mathematical programming problem is formulated:

$$\max h_0 = \frac{\sum_{r=1}^{s} u_r y_{r0}}{\sum_{i=1}^{m} v_i x_{i0}} \qquad (1)$$

$$subject\ \ to: \quad = \frac{\sum_{r=1}^{s} u_r y_{rj}}{\sum_{i=1}^{m} v_i x_{ij}} \le 1 \qquad j = 1, 2, ..., n \ \& i = 1, 2, ..., m$$

$$u_r, v_i \ge 0 \ \& \ r = 1, 2, ..., s$$

where y_{rj} and x_{ij} (are >=0) are the known outputs and inputs of the j^{th} DMU, and U_r is of dimension M*1, V_i of dimension S*1 (all greater or equal to zero) called *optimizing solutions*

(or regarded as weights or multipliers) to be determined by all the data on all of the DMUs which are being used as reference sets. The efficiency technique as in equation 1 works so that the efficiency of one DMU member (school) of the reference set j=1,2,…,n DMU's is to be rated relative to the others. The solution to the technical efficiency involves finding the values for U and V, so that the efficiency measure of the jth DMU is maximized, subject to the constraint that all efficiency measures must be less than or equal to one. Previous research works have attempted to compare DEA results with efficiency scores obtained by using more conventional regression analysis, in which the efficiency scores are calculated from the residuals. For instance, Sengupta and Sfeir (1986) noted that the results obtained using DEA technique were robust.

Factors that Affect School Technical Efficiency

The DEA model, as described in equation 1, constitutes stage one of the analysis where only the discretionary inputs are considered and the presence of non-discretionary factors is not taken into account. In the second stage, the most often used technique for evaluating correlates of school efficiency is the Tobit model as employed by other authors in efficiency analysis (e.g. Kirjavainen & Loikkanen, 1998; Kantabutra & Tang, 2006; Oleksandr, 2004; Johnes et al., 2007). The tobit analytic technique is by and large similarly used by all authors and only differs in choice of the dependent variable. The former two authors transformed the efficiency scores (1-efficiency score) into inefficiency scores (dependent variable) with the objective to identify factors that explain inefficiency variations. Their studies also took into account inefficiency variations obtained under assumptions of both Constant and Variable Returns to Scale measurements. The latter two authors used efficiency scores in their analyses without any transformations. For estimation purposes, this study explores correlates of technical efficiency using the truncated tobit model because of the bounded nature of the DEA scores. A school lying at the upper bound (efficiency score=1) is regarded the best practice school. In general sense, the model analyzes the effect of school and community socio-economic factors on the school technical efficiency scores estimated using the DEA technique. The Tobit model used at the second stage can be represented by:

$$\hat{S}_i = constant + \sum_{j=1}^{n} \beta_j SXT_{ij} + \sum_{s=1}^{m} \alpha_s COM_{is} + \varepsilon_i \qquad where\ \varepsilon_i \sim N(0, \delta^2) \tag{2}$$

Where $\hat{s}_i$ lies between 0 and 1 inclusive and is the observable dependent variable representing efficiency score of school 'i'; SXT_{ij} is a vector of school environmental factors j (j=1, 2, 3…, n) and COM_{is} constitutes the community socio-economic factors s (s=1, 2, 3, …., m) for every school 'i' respectively. β_j and α_s are vectors of parameters to be estimated. The error term (ε_i) is assumed to follow classical linear regression assumptions of zero mean and minimum variance. Our sample is drawn from subset of a larger population and in effect $\hat{S}_i$ is incompletely observed value of latent variable S_i^*.

In effect, with truncation from below, we only observe $\hat{S}_i = S_i^*$ if S_i^* is larger than the truncation point and $\hat{S}_i = S_i^* \left\{ if\ S_i^* \le 1 \right\}$. The sample no longer has the original distribution but instead the truncated normal distribution which may require re-scaling

(Greene, 2003). Tobit modeling technique accounts for truncation from below and allows computing consistent estimates compared to other techniques, such as OLS regression. If the dependent variable is truncated normally distributed and OLS technique employed, then slope parameters converge to fraction times the true slope parameter and the explanatory variables become correlated with the disturbance term, leading to inconsistent estimates, Greene (2003).

Choice of the Variables

The measurement of technical efficiency must take into account discretionary factors that impact outputs and are relatively within school's control. In efficiency analysis, one should pay attention to the robustness of the results with respect to the input and output choices because the selection of variables is mainly based on data availability, Kirjavainen and Loikkanen (1998). The choice of variables at second stage entails variables that are non-discretionary in nature. The output indicators are measured by average school scores in mathematics, English and biology subjects standardized to 100 percent (Figure 1). The input indicators are "teacher-student ratio" measured by average number of teachers for 100 students in a school, "classroom-student ratio" measured as average number of classrooms occupied by 100 students in a school, "proportion of certified teachers" and "physical facility index" composed of availability of library, computer laboratory, staffroom, store room and workshop respectively.

The second stage of analysis comprises of technical efficiency scores treated as dependent variable. Among the independent variables are five binary outcome variables related to the school: ownership, location, USE status, boarding type and using electricity as main source of energy. Other variables included "school size" measured by number of students in school, number of teachers per house facility, average age of student in complete years, education level of the household heads (measured by average education level of household heads within and around school community), per student annual expenditure on education in the household, student heterogeneity measured as standard deviation of test scores within schools, and region as categorical variable. These variables are assumed to influence school efficiency at different magnitudes and directions.

Endogeneity Problem

A major challenge in the evaluation of school efficiencies, considering the non-discretionary nature of some factors such as location, is the possible endogeneity. Theoretically, one would expect urban schools to perform better than rural ones. The results may be distorted since starting up school in either rural or urban areas may largely depend on demand for education and the cost of offering the education services. For instance starting up a school in rural area can be attributed to high demand for mass secondary education and the cost of education may be low compared to urban schools. In effect, endogeneity problem may arise in empirical estimation. Hoxby (2000) addresses this shortcoming using the instrumental variable while analyzing effect of class size and competition of students' achievement based on natural population. However, these instruments cannot be applicable in this study because of homogeneous population. Instead, we use the wealth status of school community proxied by per capita household monthly

consumption expenditure and average distance from district education office as instruments for location. Starting up a school in either urban or rural area could be driven by demand for education in the guise to bring services closer to the recipients. In effect, average distance is related to location. In some instances, a decision to start up a school may be driven by the wealth status of the community, as it may reduce the education costs and lessen burden on parents within the community. Wealth status of households within school community and distance are related to location but assumed to be uncorrelated to overall school efficiency. For these instruments to be valid they should not have significant effect on efficiency of their own when included in the same model as the endogenous variable for which they serve as instruments. To facilitate further analysis, we take full test for endogeneity using Hausman test popularized by Smith and Blundell (1986) which follows two step algorithms. The first step entails regressing the endogenous variable on the exogenous variables of the Tobit model and the instruments: $E_1 = \alpha_e^{'} X_e + \alpha_i^{'} X_i + \varepsilon$ where E_1 is the endogenous variable, X_e - the exogenous variable, X_i - the instruments and ε is the residuals. In the second step, the predicted residuals are included as an explanatory variable in the Tobit regression, as defined in first step equation, so that $\hat{S}_i = \beta^{'} X_e + \varphi E_1 + (RESD)\hat{\varepsilon} + \nu$, where $\hat{S}_i$ is the dependent variable in the Tobit model (see Appendix I). Endogeneity is confirmed by testing if $\eta=0$.

Data and Sources

The study used data on secondary schools in Uganda routinely collected by Ministry of Education and Sports (MoES) on all schools, and Uganda National Examination Board (UNEB) data which cover representative sample of schools and their students in the country. With the UNEB data, the tests were administered to senior two students from 283 schools in 2009. The assessment comprised of written tests in Mathematics, English language and Biology based on the *Uganda School curriculum.* The households' specific data was obtained from Uganda National Household Survey IV, conducted by UBoS in 2009. Datasets were synchronizable because the information was collected during the same time period and under similar socio-economic conditions. A national sample consisted of 183 rural and 100 urban schools, defining 'urban' as being within town council, municipal or city areas and 'rural' as being outside such areas. All urban areas have some characteristics generally recognized as being so. Geographical zoning of rural-urban specifications is defined by Uganda Bureau of Statistics (UBoS) and other related departmental statistical offices like Statistics department under MoES. The sample is considered large and it is closer to the sample size used by Kirjavainen and Loikkanen (1998)[4] while examining inefficiency differences of Finnish senior secondary schools. Table 1 provides the descriptives of input and output indicators used at stage 1 and some variables used at stage 2 respectively.

[4] The authors used data on 291 senior secondary schools from all over Finland, cross-sectional and aggregated to school level.

TABLE 1

Descriptive Statistics

Variable		*N*	*Mean*	*Std. Dev.*	*Mini-mum*	*Maximum*
Outputs for Stage 1						
English score		283	62.4	11.8	34.0	92.0
Mathematics score		283	46.3	13.1	20.0	91.0
Biology score		283	38.7	7.6	22.0	61.0
Inputs for Stage 1						
Physical Facility Index		283	4.4	1.0	0.0	5.0
Teacher-Student Ratio		283	5.6	3.7	1.0	23.0
Classroom-Student Ratio		283	3.0	1.9	0.0	18.0
Proportion of Certified teachers		283	0.9	0.1	0.2	1.0
Continuous Variables used in Stage 2 of Analysis						
Technical efficiency scores	Rural	183	0.74	0.12	0.41	1.0
	Urban	100	0.78	0.12	0.52	1.0
School size	Rural	183	540	336	52	1678
	Urban	100	925	629	167	3175
Teacher-house ratio	Rural	183	3	5.2	0.5	56
	Urban	100	5	7.8	0.4	50
Students' average age	Rural	183	15.9	0.69	14.0	17.8
	Urban	100	15.7	0.65	14.2	17.4
Expenditure on education per year (in Ushs)	Rural	183	340,545	203,195	8,010	1,550,333
	Urban	100	393,382	277,258	8,500	1,210,000
Heterogeneity of students	Rural	183	12.0	1.58	5.10	17.26
	Urban	100	12.1	1.84	5.76	17.43

Descriptive results indicate that there are wide variations in scores in all the subjects. Specifically, English remains the best subject done, with mean score of 62.4 percent, compared to mathematics and biology. The wider variations observed could partly indicate the level of heterogeneity in schools. The inputs are considered in physical[5] terms, from which it is possible to assess school technical efficiency. There were about 6 teachers for 100 students in school, with standard deviation of 3.7, signaling towards a wide gap of school staffing from 1 to 23 teachers. Moreover, there are on average 3 classrooms for 100 students, with standard deviation of 1.9, and maximum of 18 classrooms. It is worth noting that, on average a school has nine certified teachers out of ten.

Table 1 also presents summary statistics for efficiency scores, school size, teacher-house ratio, students' age, household per student annual expenditure on education and student heterogeneity for rural and urban schools. The urban school efficiency score is slightly more than rural by 0.04 points but with a similar variation (std dev=0.12) from one school to another. Schools in urban areas on average registered 925 students compared to the rural

[5] Smith & Street (2006) point out that examining school efficiency based on capital inputs could have measurement challenges, but rather more feasible is the analytic focus on efficiency based on physical inputs and outputs.

based schools with 540 students. The wide variations are driven by several factors, some of which are related to socio-economic status of households and institution motives. Teacher-house ratio is averagely above unity, implying teacher accommodation is still a challenge in both rural and urban schools, and the student average age ranging between 14.0 to 17.0 years indicates that most students are enrolled in the correct youth age group. Heterogeneity of students measures levels of cognitive skills and knowledge among students and high standard deviation depicts greater variations in students' knowledge and understanding.

Results

Estimating Technical Efficiencies of Schools

This section presents and discuses the efficiency scores of schools as pooled sample, as well as rural and urban samples respectively. The efficiency scores presented are largely based on defining the 'distance' between an inefficient school and one that is much ahead of it. The results in Table 2 are mean efficiency scores for the pooled and separate samples. They indicate the number of schools per rural and urban specifications, the mean score and constituted proportion within a specification. Out of 283 schools, 19 (6.7 percent) of them are efficient, and the rest (93.3 percent) are far from the efficiency frontier. Overall mean efficiency scores range from 0.74 to 1.0, with small deviations within groups. There are 11 (6.0 percent) schools out of 183 reported efficient in rural compared to 8 (8.0 percent) of the 100 urban schools. In absolute numbers, there are more rural efficient schools than urban, but in proportionate terms, less rural schools are efficient compared to urban. That said, in both rural and urban areas, most schools are performing below optimal.

TABLE 2
Distribution of Efficient and Inefficient Scores

	Efficient schools (n=19)			Inefficient schools (n=264)			All (n=283)		
	No. of schools	*% of the group*	*Mean efficiency score*	*No. of schools*	*% of the group*	*Mean score*	*No. of schools*	*%*	*Mean efficiency score*
Location									
Urban	8	8.0	1.0(0.0)	92	92.0	0.76(0.10)	100	100	0.78(0.12)
Rural	11	6.0	1.0(0.0)	172	94.0	0.73(0.11)	183	100	0.74(0.13)
All	19	6.7	1.0(0.0)	264	93.3	0.74(0.11)	283	100	0.76(0.13)

Standard errors are presented in brackets

Factors Affecting School Technical Efficiency

The second stage presents a set of explanatory factors without Instrumental variable specification as observed from the Hausman test as described in the previous section. Considering the model results in Appendix I, the *RESD* coefficient (i.e. 0.019) is subjected to t-test statistic under the null hypothesis $RESD = 0$. The test statistic (0.008) with p-value

(0.892) indicates that predicted residuals are insignificant at the second stage of analysis. The Hausman test does indicate that school location should be exogenous and the estimates obtained have minimum variance (i.e. consistent), thus no need for Instrumental variable specification. In effect, the tobit model results are presented for the pooled, rural and urban specifications respectively as shown in Table 3. The Likelihood Chi-square statistic (153.0) for the pooled model with probability value (0.000) largely indicate that the model is well specified and that the parameter estimates thus obtained can as well be adopted for making inference. The R-squared (42.3 percent) for pooled model point to reasonably better predictive power of the independent factors on school technical efficiencies. The urban model predict well at 80.9 percent more than rural model at 36.6 percent. The models' coefficients so obtained depict real life situation in Ugandan context and the results could be considered reliable.

TABLE 3
Tobit Results for Pooled, Urban and Rural Specifications
Dependent Variable: Technical Efficiency Scores

	Pooled Model		Urban Model		Rural Model	
	Coefficient	*S.E*	*Coefficient*	*S.E*	*Coefficient*	*S.E*
School size	0.124***	0.016	0.099***	0.016	0.016***	0.029
Teacher-house ratio	-0.002***	0.001	-0.004*	0.001	-0.002***	0.001
Ownership (Public=1)	0.037**	0.016	0.025	0.023	0.029	0.021
Location (Urban=1)	-0.008	0.014				
USE status (USE=1)	-0.036**	0.017	-0.024	0.021	-0.057**	0.023
School boarding type (Day=1)	-0.030**	0.015	-0.043*	0.022	-0.018	0.021
Heterogeneity of students	-0.009***	0.004	-0.008*	0.004	-0.013**	0.005
Availability of Career guidance services	0.007	0.019	0.009	0.026	0.012	0.022
School using electricity (yes=1)	-0.018	0.013	-0.008	0.016	-0.034*	0.018
School type (co-education=1)	0.004	0.015	-0.009	0.030	0.006	0.017
Student average age	-0.052***	0.013	-0.074***	0.018	-0.037**	0.018
Secondary education of Household head	0.056*	0.101	0.004	0.077	0.011	0.016
Post secondary education Household head	0.034	0.102	0.044	0.078	0.066	0.010
Per student household Expenditure on education	0.018**	0.011	0.007	0.011	0.024*	0.013
Eastern region	0.014	0.017	-0.068***	0.023	0.035	0.022
Northern region	0.064***	0.021	-0.036	0.029	0.103***	0.027
Western region	0.052***	0.019	-0.043*	0.087	0.082***	0.025
Central region (Reference Category)						
Constant	1.368***	.0271	2.178***	0.340	1.107***	0.332
N	283		100		183	
LR chi2	153.0		110.4		84.9	
P-value of F-statistic	0.000		0.000		0.000	
R-squared	42.3%		80.9%		36.6 %	

Note: Asterisk denote significance level, *** = 1 percent, **= 5 percent and *= 10 percent

Effects of School Factors on its Technical Efficiency

The effect of increase in school size on its efficiency is positive and significant (at 1 percent) for the pooled and separate specifications. For instance in pooled specification, an increase in the school size by say one thousand students, with other factors equal, would result in increase in school efficiency by 12.4 percent. Similar effect is noticed in rural and

urban models respectively. This would probably imply that increases in school size bring economies of scale in school operations, though, sometimes large schools are difficult to manage given the scarce resources. The effect of economies of scale could outweigh the other factors. Moreover, the effect of teacher-house ratio on school technical efficiency reveals significant negative relationship, at 1 percent level of significance for pooled and rural specifications, but 10 percent for urban respectively. Other things being equal, increasing the teacher-house ratio would decrease school technical efficiency across three specifications. Put it differently, constructing more houses for teachers significantly improves school efficiency.

School ownership was treated as control variable and its impact on school technical efficiency is evaluated. In the pooled specification, results reveal that public schools are significantly (at 5 percent) more efficient than private schools (3.7 percent). However, the significance vanishes in rural and urban specifications. With respect to school location in pooled specification, urban schools are less efficient (0.8 percent) than the rural schools, though the effect is insignificant. Observations from previous section reveal that, it was the majority (11 out of 19 schools) of rural schools that were efficient. Besides, it partly implies that most of the rural schools are closer to the frontier than the urban, though no significance level could be attached to this conclusion. The rural-urban specifications partly indicate that the factors affecting school efficiency are similar in rural and urban areas and this could have implication on the interventions.

Moreover, the effect of USE status on school technical efficiency is negative and significant (5 percent) for pooled and rural specifications. For instance, pooled model results indicate that USE schools are less efficient (3.6 percent) than Non-USE. This could be partly because most of the Non-USE schools, besides being more efficient, could be near the frontier than USE schools. Rural schools implementing government USE policy are also less efficient (5.7 percent) than Non-USE. However, the insignificance among the urban USE schools could be attributed to the few schools in urban as compared to rural, moreover, the aspect of closeness to the efficient frontier also matters. Besides, schools operating on day schooling system are significantly less efficient, by 3.0 and 4.3 percent, than schools that have boarding schooling type system under pooled and urban specifications, and the impact of student heterogeneity measured as the average standard deviation of the mean performance scores is rather negative and significant under all specifications. The negative effect demonstrates the low levels of homogeneity within students' performance implying significant differences in cognitive skills among the learners.

Effects of Community Socio-economic Factors on School Technical Efficiency

The age at which student can enroll for schooling is regarded important factor in almost all education stages, more specifically at secondary level. The effect of age of student on school technical efficiency is negative and significant for pooled and separate specifications. This implies all other factors equal, increasing student age would reduce school technical efficiency and vice versa. Education of the household head is an important measure of family socio-economic status as well as school community. The effect is more positive for secondary and post secondary levels compared to primary under the three specifications. For instance, in pooled model, with other factors equal, a household where the head has secondary education, is more likely to increase school efficiency by 5.6 percent, compared to household

head with primary education. This could partly be because educated parents would always want their children to receive adequate level of instruction. In general sense, educated parents are more likely to prepare a more cultivated environment or better conditions for student learning and achievement, hence improving school efficiency. Besides, per student expenditures on education could be treated as financial mark-up to the schools and also facilitate students to acquire scholastic materials. The impact of household per student expenditure on education is positive and significant for pooled and rural specifications. This implies that, with other factors equal, an increase in the per student education expenditure by 1 percent increases technical efficiency by 1.8 and 2.4 percent in schools under pooled and rural specifications. The level of school funding in some way reflects the quality of services in all schools irrespective of location and ownership.

Regional influence on school efficiency is also evaluated and central region is considered as the reference category. Schools in eastern region are more likely to be more efficient (1.4 percent) than central region schools (in pooled model), though the difference is insignificant. Compared to central region schools, northern and western regions schools are significantly more efficient, by 6.4 and 5.2 percent. Moreover, urban-rural specifications, the results depict urban schools in central region as more efficient than in other regions, and the reverse is evident for rural schools respectively (Table 3).

Discussion and Conclusions

The discussion is made in light of the existing education policy stance and supported by relevant previous works on education production function and school efficiency. The flow of the discussion follows the thematic way results that have been presented in previous sections.

Technical Efficiencies of Schools

The study was partly set out to examine the extent to which teacher-student ratio, classroom-student ratio, physical facility index, as well as proportion of certified teachers (treated as inputs), and English, mathematics as well as biology subjects' scores (treated as outputs) measure the technical efficiency of lower secondary schools. A popular non-parametric linear programming technique called "Data Envelopment Analysis" technique was employed at the 1st stage, followed by Tobit model at the 2nd stage of analysis. A sample of 283 schools drawn from various geographical locations of the country with different operating principles and funding sources was studied.

The study found that of the 283 schools only 19 operate on the production frontier with mean efficiency score of unity (1). The average efficiency score ranges from 0.74 to 1.0 with overall mean efficiency of 0.76. This suggests that inefficient schools on average could increase the education outputs by 26 percent without requiring additional inputs. Any increase in inputs for efficient schools would not increase output levels, since they were operating on the production frontier. This demonstrates that most Ugandan lower secondary schools operate on scales below optimal. This could partly lead to waste of already meager resources and production of ill prepared workforce. There are slightly more efficient schools in rural than urban areas. Besides, tobit model estimations reveal less efficiency (though insignificant) in urban schools compared to rural, as discussed in the results section. This is

contrary to some previous research works, for instance Kantabutra (2009) found more efficient schools in urban areas than rural. This could be due to more rural schools lying closer to efficiency frontier than urban. The urban-rural efficiencies can also be explained by differences in community socioeconomic status (SES) as related to school achievement.

School, Community Socio-economic Factors and Technical Efficiency

The tobit model results indicate that the effect of school size on its efficiency was positive and significant. School size effect is mixed when compared to previous studies. Inefficiency could be associated with larger or smaller school sizes than the optimal. A study by Kantabutra and Tang (2006) established that school size contributes positively to school efficiency in rural and urban areas of Thailand. However, Bradley et al. (2001) found significant negative effect on secondary schools' efficiency in England. The education policies should emphasize improving school efficiency while reducing class size. Moreover, the study established that increasing the ratio of teachers to houses would lower school academic achievement. This could imply that increasing teacher accommodation would motivate them to concentrate on teaching and mentoring students. This would also increase the level of interaction between the students and the teachers, hence improved school achievement.

The revelation that public schools are more efficient than private is surprising, as the reverse is the common phenomenon. One plausible explanation could be that most public schools in general utilize the available resources for greater achievement, thus operating closer to the production frontier than private ones. The previous research works that support this finding were, among others, carried out by Oleksandr (2004) and Kirjavainen and Loikkanen (1998), who found less efficiency in private secondary schools of Czech Republic and Finland than in public schools. Moreover, results also reveal that urban schools are slightly less efficient (though insignificantly) than rural schools, which is equally surprising, and there is mixed literature that refers to this finding. It could be argued that rural communities often see their school as a valuable asset of the area which can be source of economic benefits. In some cases the rural schools provide cohesion and identity to stakeholders within communities. As referred to by Pritchard (2003), rural schools usually serve close-knit communities in which the school plays an important role and can be a vibrant gathering center and symbol of pride.

The finding that USE schools were found less efficient than Non-USE is expected. There may not be any literature available to support or negate these findings, since USE is a new concept and it is a policy currently being implemented in Uganda. However, plausible explanations can be given to the effect. The introduction of USE policy implied increases in schools' enrolments that constrained resources creating harsh conditions for schools to operate. Besides, given that USE schools are more than double than the Non-USE in number, the effect of accumulated distances far from the frontier could negate the number of efficient schools, thus making the impact of USE status less compared to Non-USE. The negative effect of day schooling system on school technical efficiency is not surprising. This could be attributed to the fact that schools operating day shifts to some extent are characterized by management inefficiencies, especially, optimally using the limited time for productive gain. Some (especially public) schools operate daily a double shift system, as a way of offering learning opportunities to more students, thus constraining on the available resources. This

could be associated with minimum time of classroom instruction and less interaction between students and teachers leading to low school academic achievement.

The average age of the students is related to school efficiency negatively and linearly. There is an optimal age when the students should enroll, beyond which the effect becomes negative. Enrolling students at the rightful age encourages them to study with their peers with ease. However, students past the right age group could sometimes find it difficult to cope in classes with younger peers. This could in a way affect their learning effort. Noulas and Ketkar (1998) established that students' age brackets influence the school efficiency in either way depending on the school environment and management practices.

The education of parents contributes positively to performance of the students for several reasons. For instance, better educated adults could lead to community increased human capital, thus in a way lead to increased community participation in school activities (i.e. School Management Committees, local chiefs and councilors, parent-teacher associations). Besides, parents would be more able to help their children attend school. In effect, the community may feel a responsibility to achieve certain acceptable performance standards, Ruggiero and Vitaliano (1999). Moreover, the effect of per student expenditure on school efficiency is positive. Expenditures on education reflect increased investment in students' human capital, thus leading to higher rate of educational achievement and school efficiency. In other previous studies, evidence linking the level of student achievement to per student expenditure becomes insignificant when family background and innate factors are taken into account, Hanushek (1986). Heterogeneity of student was found to have significantly negative effect on school efficiency. This study focuses at heterogeneity in the spirit of students' cognitive skills, though it could be explained by the level of competition among students, Hoxby (2000).

In Ugandan schools, students' learning as well as school management practices can be judged from the geographical context. The descriptive results reveal, on average, the efficiency scores for eastern area are below the national average partly justifying the insignificancy. Though the efficiencies recorded from other regions are above the national average, it could be that most schools operate close to the production frontier justifying the more likely effects. The central region is more urbanized than others, thus, it was necessary to isolate rural-urban effects to understand better the source of these inefficiencies. Results of rural and urban specifications demonstrate the degree of urbanization in central region where urban schools were more efficient than in other regions and the reverse is true for rural specification. The central region schools are generally regarded to have a more developed infrastructure. Besides, the parents in urban areas have relatively high socio-economic status and can ably support their children in better schools compared to parents from country side.

Conclusion

In conclusion, stage one analysis reveals that most schools are operating below optimal level, while stage two estimations indicate that the challenges affecting rural and urban schools are universal. This indicates that the factors that are critical to school performance do not vary significantly across the rural and urban specifications. The efforts to improve school efficiency may be undertaken considering rural and urban schools as similar. This

would also necessitate further analysis of inter-school management competencies considering school size, school type and ownership among other factors.

In this study, some caveats have to be pointed out when measuring efficiency of the public sub-sector like a school. Though the applications of presented techniques are rooted from available literature, the extent of the analysis is limited to data availability. One could observe that inefficiencies in education system may be attributed to student level and other environmental factors (e.g. pupil peer group factors, policy change or cultural factors, etc.) that have not been easily captured due to resource constraints. Applying a combination of techniques on multidimensional data to further reflect a real life situation of school institutional efficiency could be encouraged in future studies.

References

Afonso, A. & St. Aubyn (2005): "Non-parametric Approaches to Education and Health Efficiency in OECD Countries", *Journal of Applied Economics*, 8 (2), pp.227-246.

Bailey, S. J. (2002): *Public Sector Economics: Theory, Policy and Practice.* London: Palgrave Macmillan.

Banker, R. D., Charnes, A. & Cooper, W. (1984): "Some models for estimating technical and scale inefficiencies in data envelopment analysis", *Management Science*, 30(9), pp.1078-1092.

Bingler, S., Diamond, Lawrence, B. K., B. M., Hoffman, J. L., Howley, C. B., Mitchell, S., et al. (2002): *Dollars and sense: The cost effectiveness of small schools.* Cincinnati, OH: Knowledge Works Foundation.

Bradley S., Johnes G., Millington J. (2001): "Effect of Competition on the Efficiency of Secondary School in England", *European Journal of Operation Research*, 135, pp.545-568.

Charnes, A., Cooper, W. W. & Rhodes, E. (1978): "Measuring the efficiency of Decision-Making units", *European Journal of Operational Research*, 2, pp.429–444.

Coelli, Tim, D. S. Prasada Rao, and George E. Battese (1998), *An Introduction to Efficiency and Productivity Analysis*, Boston, Kluwer.

Coleman, J.S., Campbell, E.Q., Hobson, C.F., McPartland, J., Mood, A.M., Weifeld, F.D. & York, R. L., (1966): *Equality of Educational Opportunity:* Washington: US. Government Printing Office.

Cooksey, B.; P. Balze and B. Burian (1998): *"Education Sector Development Programme and Poverty Alleviation Strategies*". Background Paper prepared for the Tanzania Development Research Group (TADREG), Dares Salaam.

Debreu, G. (1951): "The Coefficient of Resource Utilization", *Econometrica*, 19, pp.273-292.

Dee, T. (1998): "Competition and the quality of public schools", *Economics of Education Review* **17**, pp 419-427.

Färe, R., Grosskopf, S. & Lovell, K. (1994): *Production Frontiers.* Cambridge University Press.

Farrell, M. (1957): "The Measurement of Productive Efficiency", *Journal of the Royal Statistical Society Series,* 120 (3), pp.253-281.

Government of Uganda (2010): *National Development Plan* (2010/11-2014/15).

Greene, William. (2003): *Econometric Analysis*. New Jersey: Prentice Hall.

Hanushek, E. A. (1986): "The economics of schooling: production and efficiency in public schools", *Journal of Economics Literature*, 26, pp.1141-1177.

Hanushek, E. A and Javier A. Luque (2003): "Efficiency and Equity in Schools around the World", *Economics of Education Review 22*, 481-502

Heyneman, S.P. and D.T. Jamison (1980): "Student Learning in Uganda: Textbook Availability and other Factors", *Comparative Education Review*, 24, 206-220.

Hoxby, C.M. (2000): "The Effects of Class size and Competition of Students' Achievement: New Evidence from Natural Population Variation", *Quarterly Journal of Economics,* 115, pp.1239-1285

Jeon, Yongil and Micheal P. Shields (2005): "*Integration and Utilization of Public Education Resources in Remote and Homogeneous Areas*: A Case study of the Upper Peninsula of Michigan" Contemporary Economic Policy, Vol. 23 (4), 601-614.

Jimenez, E., M.E. Lockheed and V. Paqueo (1991): "The Relative Efficiency of Private and Public Schools in Developing Countries", *World Bank Research Observer*, 6, 205-218.

Jimenez, E., M.E. Lockheed and N. Wattanawaha (1988): "The Relative Efficiency of Private and Public Schools: The Case of Thailand", *World Bank Economic Review*, 1, 139-164.

Jill Johnes & Steve Bradley & Alan Little (2007*):"Efficiency in the further education sector in England: a subject level analysis," Working Papers 004584,* Lancaster University Management School, Economics Department

Kang, Byung-Goo and Kenneth V. Greene (2002): "The Effects of Monitoring and Competition on Public Education Outputs: A Stochastic Frontier Approach" *Public Finance Review*, 30 (3), 3-26.

Kantabutra, S. & Tang, J. C. S. (2006): "Urban-rural and size effects on school efficiency: The case of Northern Thailand", *Leadership and Policy in Schools*, 5(4), pp.355–377.

Kantabutra, S. (2009): "Using a DEA Management Tool through a Non-Parametric Approach: An Examination of Urban-Rural Effects on Thai School Efficiency", *International Journal of Education Policy and Leadership*, 4 (2).

Kirjavainen, T. & Loikkanen, H. A. (1998): "Efficiency Differences of Finnish Senior Secondary Schools: An Application of DEA and Tobit Analysis", *Economics of Education Review*, 17(4), pp.377-394.

Kiryavainen, T. (2008): "Understanding Efficiency Difference of Schools: Practitioners' Views on Students, Staff Relations, School Management and the Curriculum", *VATT Discussion Papers 450*. Helsinki: Government Institute of Economic Research .

Mancebón, M. J. & Bandrés, E. (1999): "Efficiency evaluation in secondary schools: The key role of model specification and of ex post analysis of results"' *Education Economics*, 7(2), 131–152.

Mandl, U., Dierx, A. & Ilzkovitz, F. (2008): *The effectiveness and efficiency of public spending*. European Commission, Economic Papers 31, February. http://ec.europa.eu/economy_finance/ publications/publication11902_en.pdf

March, J. G. & Olsen, J.P. (1975): *"The Uncertainty of the Past: Organizational Learning Under Ambiguity", European Journal of Political Research*, 3, pp.147-171.

Miller, B. A. (1995): "The role of rural schools in community development: Policy issues and implications", *Journal of Research in Rural Education*, 11(3), pp.163-172.

Ministry of Education and Sports (2008): *Education Statistical Abstract*. Kampala: Ministry of Education and Sports.

Ministry of Education and Sports (2010): *The Annual Performance Report*. Kampala: Ministry of Education and Sports.

Noulas, A. and Ketkar, K. (1998): "Efficient Utilization of Resources in Public Schools: A Case Study of New Jersey", *Applied Economics*, 30, pp. 1299-1306.

Oleksandr, S. (2004): "*Secondary schools efficiency in the Czech Republic",* Center for Economic Research and Graduate Education, Prague, Czech Republic. http://iweb.cerge-ei.cz/pdf/gdn/RRCIII_33_paper_01.pdf

Pritchard, Alwyn (2003): "Understanding government output and productivity", *Economic Trends,* 596: pp.27-39.

Rassouli-Currier, Susanne (2007): "Assessing the Efficiency of Oklahoma Public Schools: A Data Envelopment Analysis" *SouthWestern Economic Review*, Vol. 34, 131-144.

Rugiero, J. and Vitaliano, D. (1999): "Assessing the Efficiency of Public Schools Using Data Envelopment Analysis and Frontier Regression", *Contemporary economic policy*, 17(3), pp.321-331

Rutter, M., Maughan, B., Mortimore, P. & Ouston, J., (1979): *Fifteen Thousand Hours: Secondary Schools and Their Effects on Children*. Boston: Harvard University Press

Sander. W. (1999): 'Private schools and public school achievement'. *The Journal of Human Resources* 34, pp 697-709.

Sengupta, J. K. & Sfeir, R. (1986): "Production frontier estimates of scale in public schools in California", *Economics of Education Review,* 5, pp.297-307.

Smith R. and Blundell R. (1986): "Notes and comments – An exogeneity test for a simultaneous equation Tobit model with an application to labor supply"' *Econometrica* **54**, pp 679-685.

Smith, P.C. & Street, A. (2006): *Analysis of Secondary School Efficiency*. Department for Education and Skills, Research Report N0. 788. https://www.education.gov.uk/publications/eOrdering Download/RR788.pdf

Staffan, W. (2006): Competition and Public School Efficiency in Sweden – An Empirical Evaluation of Second Stage Regression Results for Different Models of Non-discretionary Inputs in Data Envelopment Analysis (DEA). Department of Economics Lund University, http://www.nek.lu.se/ publications/workpap/Papers/WP06_7.pdf

Soteriou, A.C., Karahanna, E., Papanastasiou, C. & Diakourakis, M.S. (1998): "Using DEA to Evaluate the Efficiency of Secondary schools: The Case of Cyprus", *International Journal of Education Management,* 12(2), pp.65-73.

© NIEPA

APPENDIX I

Tobit Regression Results for Testing Endogeneity

Dependent Variable: Technical Efficiency Scores

	Pooled Specification	
	Coefficient	*S.E*
School size	0.125***	0.016
Teacher-house ratio	-0.002***	0.001
Ownership (Public=1)	0.038**	0.017
Location (Urban=1)	-0.013	0.016
USE status (USE=1)	-0.037**	0.017
School boarding type (Day=1)	-0.031*	0.016
Heterogeneity of students	-0.01**	0.003
Availability of Career guidance services	0.007	0.018
School using electricity (yes=1)	-0.017	0.013
School type (co-education=1)	0.005	0.016
Student average age	-0.053***	0.023
Secondary education of Household head	0.055	0.100
Post secondary education Household head	0.033	0.101
Per student household Expenditure on education	0.019**	0.011
Eastern region	0.013	0.018
Northern region	0.065***	0.022
Western region	0.053***	0.018
Central region (Reference Category)		
RESD	0.019	0.007
Constant	0.368***	.0271
N	283	
LR chi2	153.5	
P-value of F-statistic	0.000	
R-squared	42.4%	

*Note: Asterisk denote significance level, *** = 1 percent, **= 5 percent and *= 10 percent*

© NIEPA

Journal of Educational Planning and Administration
Volume XXVI, No. 2, April 2012, pp. 365-379

UGC's Sixth Pay Commission Regulations for Degree College Teachers

— A Measure for Maintenance of Standards in Higher Education Institutions

Snehal S. Donde*

Abstract

The demands on the educational system have grown incredibly with anticipated challenge due to introduction of Foreign University Bill by HRD ministry. With increasing competition, the need to reconcile the new global emphasis on sustainable development with an adequate level of quality of life, demands a whole range of skills from teachers of various disciplines. As a measure for maintenance of standards in Higher education, UGC specified in its Sixth pay regulations the responsibilities of teachers and introduced detailed appendices of different proforma with scoring pattern for performance evaluation/ increments/incentives. Present study is an attempt to understand how the degree college teachers perceive UGC's sixth Pay Commission regulations (2006) with respect to 'Teachers appointments' (Asst Prof/Associate Prof/Professor), 'In service training programmes' (refresher/courses/training), 'Work duration' (min 5hr per day and 40 hrs a week), 'Promotion conditions' (AGP/CAS), 'Retirement age' (62 and 65 respectively for lecturer and Principal), 'Research and publications' (International/National/state level Projects/books/paper/chapter) and 'Overall Benefits' (Pay bands with AGP and merit cum seniority).

Perception of Degree College teachers was studied in terms of percentage analysis of gender-wise, experience-wise and discipline-wise perceptions. The findings revealed overall view point that UGC's sixth pay regulations are systematically formulated to achieve the best. One of the plausible reasons may be due to the understanding that resistance to reforms is inescapable. However, 'Recruitment conditions' and 'Contractual appointment' related regulations show low level of perception. The respondents feel that teaching is a skill and quality of teaching cannot be achieved by enforcing an entrance exam or degree in research.

* Principal, Public Night Degree College, Santacruz (E), Mumbai- 400 055
Email: dsnehal67@yahoo.co.in

© National University of Educational Planning and Administration, 2012

Introduction

Education is a big service industry and it is growing at phenomenal rate. General Agreement of Trade in Services (GATS) has opened up Indian education sector to foreign universities. World's perception of India is that it is driven by younger population with English Language skills. It is fast moving from identity of Snake charmers to mouse movers. World leaders acknowledge India's potential. Wealthier nations see India as a country with enormous potential. India has one of the world's largest higher education systems (Stella, 2002). Over the years education has been viewed in India as an activity that leads to broadening of the mind, inculcation of values and building of character and now it is all about skill and knowledge development for global economic growth. However, the quality of education imparted in many institutions is mediocre and is a matter of concern. The impact of globalization in India is visibly seen in the form of step-by-step implementation of performance enhancement regulations for teachers and curtailment of uniform incentives by the state government, as the transition in education calls for drastic quality improvement in Higher education. We can no longer continue to follow the same model of general education as we have been doing till now for a large bulk of the student population. Rather, it requires a major contribution by the teachers to make this large human resource productive by having adequate field based experience to enhance knowledge with skills and develop correct approach.

The quality is the defining element of all activities in this knowledge society of the 21st century. The quality learning-teaching and research is the need of the hour. The earlier Education Commission (1964-66) has observed, "If the pace of national development is to be accelerated, there is need for a well-defined, bold and imaginative educational policy and for determined and vigorous action to vitalize, improve and expand education "(Aggarwal, 1993).

To meet the changes, challenges, expectations and competencies of a 'knowledge society', a full-fledged teacher resource development is aimed at, through the University Grants Commissions regulations and pay- revisions. The implementation of regulations plays a major role in the effectiveness of the institution and individual teacher performance. Ever since its inception the UGC has devised steps to promote quality and excellence in higher education in a focused manner. The phenomenon of low paid teachers in the institutions of higher learning had been a chronic feature all over the country at the time when the UGC appeared on the educational horizon. Improving the lot of the teachers was to be recognized as a necessary condition if the quality of teacher and his teaching was to be improved in future. With this objective of its policy, the University Grants Commission recommended revised pay scales for various categories of teachers in the Colleges and Universities of India (Chaturvedi, 1989). Revision of pay scales of the University and College teachers has made the teacher's job in the colleges and Universities more attractive. Another goal followed by the UGC by making the pay scales more attractive, was to to attract teacher talent to the academic profession and make them dedicate themselves to the cause of higher learning. As a measure of quality upgradation, the UGC focused on raising the quality of teachers and in view of that had developed the 5th pay regulations in 2001 for educators and higher authorities to meet the challenges of transition. Recently, with the general feeling that security of tenure breeds complacency and inertia, and in order to raise the standard of

higher education, in the sixth pay regulations in 2006 the UGC had introduced performance based Academic Grade Pay with a scoring system.

It is very often observed that education has proved resistant to reform and it is possible that the educational system militates against certain sorts of reforms from being successfully adopted. As suggested by Covaleskie, (1994), in his study on "The Education system and resistance to reforms", to explore the limits of policy that are inescapable as recognition of these limits may allow us to attend to those policy areas where success may be more likely. The Researcher also believes that the regulation related policies need to be studied for their effective implementation and that teachers should be involved in the study. The quality of teaching and the quality of teacher overlap and cannot be easily distinguished. The teaching quality generally represents institutional performance, whereas, the teacher quality is a measure of an individual's effectiveness and commitment. If teacher's needs are taken care of with every new plan then along with the other "inputs" (resources and technology) the "output" will be obvious. This perception study has been undertaken to generate opinion of the Degree college teachers towards newly implemented sixth pay regulations and to provide feedback to the UGC for assistance in effective implementation. It will also help to ensure maintenance of standard in HE institutions for competitiveness in the global market.

Human resource development, at all levels, needs to be given priority and made a part of the nation's overall development strategy. For similar reasons, the researcher believes that teachers' view in terms of perception study can help in reviewing, monitoring and evaluation of the regulations, which is essential for efficiency and effectiveness of education system as a whole.

Main Highlights of UGC's Sixth Pay Regulations

Measure for Maintenance of Standards in Recruitment and Qualifications

As a measure for raising the standard, three designations for the teaching staff of the Universities and Colleges have been created in the new regulations of the UGC, i.e. Assistant Professor, Associate Professor and Professor, instead of Lecturer, Lecturer in Senior Scale, and Lecturer in Selection Grade, which existed in previous regulations. There is no change in the designation of Librarian and Director of Physical Education. Only those teachers with Ph.D. and the ones who satisfy other academic conditions can be promoted, designated or appointed as Professor. Two Pay bands, i.e. Rs. 15,600 – Rs. 39,100 and Rs. 37,400 – Rs. 67,000, are given with the appropriate Academic Grade Pay (A.G.P.). Each pay band has different stages of AGP to enable multiple opportunities for upward movement during the career. Posts of Professor is created at the Under Graduate level (10% of the number of posts of Associate professor) and in the Post Graduate Colleges (as many posts as the number of PG department in the college).

The eligibility criteria for promotion from Associate Professor to Professor is a Ph.D. Degree in the relevant subject and completion of 3 years of service as Associate Professor with AGP of Rs. 9000. The post of the Senior Most Associate Professor of the Department will exist till the Appointed staff is in service. On superannuation or otherwise the post will revert to Associate Professor. Resultant vacancy to be filled as per merit promotion of the senior most Associate Professor in the same or different department. It is also specified in

the guidelines that there shall not be more than one post of Professor per department and 25% of appointment to this post will be by direct appointment and 75% by promotion.

For principal appointment assessment of following dimensions with given weightage:

- Aptitude for teaching, research admin (20%)
- Ability to communicate clearly & effectively (10%)
- Ability to plan institutional programme, analyze and discuss curriculum development & delivery, research support and college development (20%)
- Ability to deliver lecture and encourage participation (10%)
- Merits and credentials (40% of total API)

Workload

As given in regulations, the workload of teachers in full time employment should not be less than 40 hours a week for 30 working weeks, i.e. 180 working days. The teacher should be available in the college for at least 5 hours daily. Direct teaching-learning process hours should be as follows:

a) Assistant Professor: 16 hours
b) Associate Professor/Professor: 14 Hours.

Relaxation of two hours may be given to Professors who are actively involved in the extension activities and administration. A minimum of 6 hours per week may be allocated for research activities of a teacher.

Overall Selection Procedure

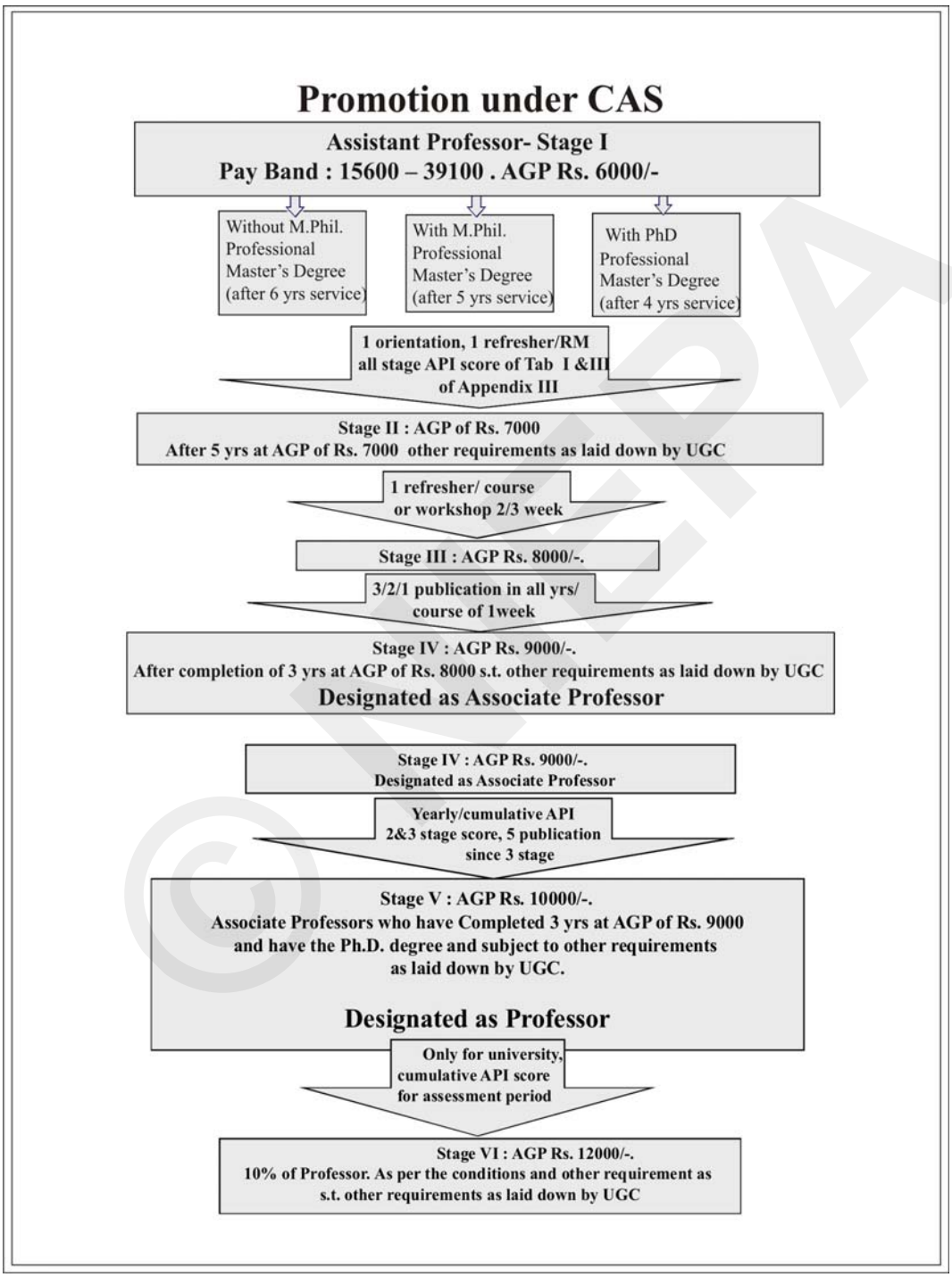
Academic Performance Indicator (API) system with scoring point and Weightage Points (WP) tables is provided in the UGC guideline. Performance Appraisal Scoring System (PASS) is outlined for Analysis of the merits and credentials of the candidates. There is a provision for direct recruitment with requirements that are different from the internal promotion by means of Career Advancement Scheme (CAS).

API involves assessment of aptitude for teaching, research and administration, ability to communicate clearly and effectively, ability to plan, analyse and discuss curriculum development, research problems and college development/administration; ability to deliver lecture programmes are to be assessed by making the candidate participate in a group discussion or by his exposure to a classroom situation on the basis of the guidelines developed by the affiliating University.

Academic Grade Pay (AGP)

For the first time in history of UGC regulations the Career Advancement of Lecturers has been restricted by introduction of certain conditions. For claiming the Annual Grade Pay or any promotion it is necessary to score 50% of the overall scores given in the Performance Based Scoring system (PASS). Assistant Professors who move from one AGP level to the other AGP will have to remain on the same AGP until they become eligible for promotion to Associate Professor.

CAS promotion of Assistant Professors from one AGP to the higher AGP is to be conducted by a "Screening cum Evaluation Committee" adhering to the norms laid out as API/WP and PASS


Promotion under CAS
Assistant Professor- Stage I
Pay Band : 15600 – 39100 . AGP Rs. 6000/-
Without M.Phil. Professional Master's Degree (after 6 yrs service)
With M.Phil. Professional Master's Degree (after 5 yrs service)
With PhD Professional Master's Degree (after 4 yrs service)
1 orientation, 1 refresher/RM all stage API score of Tab I &III of Appendix III
Stage II : AGP of Rs. 7000
After 5 yrs at AGP of Rs. 7000 other requirements as laid down by UGC
1 refresher/ course or workshop 2/3 week
Stage III : AGP Rs. 8000/-.
3/2/1 publication in all yrs/ course of 1week
Stage IV : AGP Rs. 9000/-.
After completion of 3 yrs at AGP of Rs. 8000 s.t. other requirements as laid down by UGC
Designated as Associate Professor
Stage IV : AGP Rs. 9000/-.
Designated as Associate Professor
Yearly/cumulative API 2&3 stage score, 5 publication since 3 stage
Stage V : AGP Rs. 10000/-.
Associate Professors who have Completed 3 yrs at AGP of Rs. 9000 and have the Ph.D. degree and subject to other requirements as laid down by UGC.
Designated as Professor
Only for university, cumulative API score for assessment period
Stage VI : AGP Rs. 12000/-.
10% of Professor. As per the conditions and other requirement as s.t. other requirements as laid down by UGC

Recommended Selection Process

CAS promotions from one AGP to the higher AGP shall be conducted by a " Screening cum Evaluation Committee" adhering to the norms laid out as API/WP and PASS in Table I to III of Appendix-III of UGC Regulations 2010 of 30.06.2010. Gazette dated 18-24th September 2010.

- Committee for promotion of Assistant professors from one AGP to the other higher AGP shall consist of - The Chairman of the Governing Body (GB), Principal, HOD, two VC nominee (1 subject expert), 2 subject expert approved by statutory body (5 quorum)
- Associate Professor and Professors in Colleges- Chairperson GB; Principal, HOD, Two VC nominee, one Dean or equivalent position in the University and the other must be expert in the concerned subject; 2 subject expert
- Principal Selection panel- 3GB, 3 experts of principal and a professor, 1 VC nominee HE expert

As per the new system, to start the process of promotion a teacher who becomes eligible for promotion under CAS must claim for same at least three months in advance. Faculty have to initiate the process by submitting the Performance Appraisal form duly supported by all credentials, as per the API and WP guidelines given in sixth pay regulations.

Direct recruitment as well as Career Advancement Promotions ratio/percentage of minimum requirement of category-wise credit points to each of the cadres vary. The Screening-cum-Evaluation Committee on verification/evaluation of AGP score secured by the candidate through the 'PASS' methodology, will recommend or reject the proposal. Candidates who do not fulfill the score required under API scoring system or who obtain less than 50% in the expert assessment of the selection process can be re-assessed only after a minimum period of 1 year. For each post of Assistant Professor/Associate Professor/Professor, recommendation shall be made to the Executive Council of the University about the suitability of the promotion of the candidate(s) under CAS.

The principal goal of this work is to evaluate the teachers' perception towards the policies adopted by the state government to reform the university system, keeping sixth Pay Commission in view. Out of the various sixth pay regulations, which are being implemented starting from 1-1-2006, only '8' key areas that directly or indirectly influence teachers' functioning were considered, namely NET/SET/Ph.D. appointment conditions, clock hour basis appointment (CHB), work duration, in-service training programme, promotion condition, retirement age, research and benefits. Researcher, who is a head of an institution in the University of Mumbai affiliated degree college, strongly believes that the system of education cannot be strengthened without eliciting the co-operation of teachers. The regulations play a major role in teachers' effectiveness in teaching. It is, therefore, necessary to continue efforts to find out the implications and perception of teachers towards the new regulations which are periodically formulated to bring reforms.

Aim and Objectives of Study

The main aim of the research was to study the perception of degree college teachers in and around Mumbai, with respect to UGC's sixth Pay Commission regulations.

The study was conducted with the following specific objectives:

(1) To create general awareness among all faculties of higher education regarding relevance of periodic regulations formulated by UGC with special reference to Sixth pay regulations.
(2) To study the perception of degree college teachers towards eight areas of sixth pay commission with special reference to (i) Recruitment condition and procedure (NET/SET/MPhil/Phd), (ii) Contractual appointment, (iii) Work duration (min. 5 hrs per day and 40 hrs a week), (iv) In-service training programmes (refresher/short term courses/FDP), (v) Promotion condition (AGP/CAS), (vi) Retirement age (62 & 65 respectively for Lecturer and Principal), (vii) Research and publications and (viii) overall Benefits (Pay band with AGP), keeping in view:
   (a) Gender (Male/Female), (b) Experience (Junior (5-10 years)/Senior (>10 years), (c) Discipline (Science/Non science, i.e. commerce and arts).
(3) To compare the gender-wise, discipline-wise and experience-wise perception of degree college teachers on the basis of the eight areas considered for the study.
(4) To rank the perception of teachers with respect to the areas outlined for the study (based on percentage).
(5) To identify the gaps (if any) and give suggestions on the basis of outcomes of the study.

Methodology of Study

Methodology - Descriptive Survey Sample: 160 teachers from 25 colleges in and around Mumbai were randomly selected. Tool administered was a four-point rating scale including 34 items and an informal interview schedule. Content validity was done by 5 experts in the field and for item analysis the discrimination index of each item was computed using the following formula:

$$\text{Discrimination Index} = \frac{U_L - L_L}{1/2\ N}$$

Where,

U_L = the number of respondent in the in the upper 27% having high scores on an item.
L_L = the number of respondent in the in the lower 27% having high scores on an item.
N = total number of respondent (upper 27% of the sample + lower 27% of the sample)

The items with discrimination index of 0.20 or more were retained.

The split-half method was used in ascertaining the internal consistency of a tool. The reliability of the entire scale was obtained by the following formula:

$$r_{11} = \frac{2\ r_{1/2}}{1 + r_{1/2}}$$

Where, r_{11}= reliability coefficient of the whole test

$r_{1/2}$ = reliability coefficient of the half test

The reliability coefficient of the Teachers Perception Scale was 0.96. It may be said on the basis of the pilot study that TPS is internally consistent and possesses content validity as well as item validity.

Technique of analysis: Descriptive analysis by Percentage analysis and graphical techniques. The statistical technique used for inferential analysis in order to test the hypothesis was the 't-test'. The comparison of perceptions towards the UGC regulations was studied in terms of percentage value. The values obtained for each study were distributed into various groups in order to explain the perception level on the basis of the following range arrived at in consultation with the experts who were involved in validation of the perception tool:

1. 70% and above : High perception
2. 60%- 69% : Moderately high perception
3. 51%- 59% : Moderate perception
4. 60% -100% : Positively perceived
5. Below 50% : Low/Negatively perceived

Major Findings of the Study

The findings revealed that all the groups of teachers (gender-wise, experience-wise and discipline-wise) of degree college have positively perceived (above 65%) the regulations of sixth Pay commission, except for contractual appointment regulation (perception level below 30%). Perception level of degree college teachers (gender-wise, experience-wise and discipline-wise) was highest towards the regulations of 'Research and publications' and overall 'Benefits' of UGC' sixth Pay commission. Benefits of sixth Pay commission have been perceived as highly positive (above 70%) by all the groups of teachers (gender-wise, experience-wise and discipline-wise). Perception levels with respect to 'Research and publications' and 'In service training programme' are found to be from 68% to 70%. The perception by junior teachers of regulation towards 'Research and publications' was low (63.27%) among teacher groups considered for the study. All the groups of teachers (gender-wise, experience-wise and discipline-wise) exhibited highly negative perception (26.65%) towards Contractual appointment regulation. Regulations of 'Recruitment qualification and procedure' regulation and 'Promotion conditions' scored overall between 58 to 60%. 'Work duration' (40 hours/week and minimum 5 hours/day), 'In service training' and 'Retirement age' regulations have been perceived moderately high (60%-65%) by all the groups of teachers (gender-wise, experience-wise and discipline-wise), as compared to other areas of study. Regulations with respect to 'Retirement Age', have been perceived equally (64.97%) by gender-wise and experience-wise teachers. Discipline-wise teachers perception level towards 'Retirement Age' is slightly higher (65.27%) in comparison to other group. The comparison between male and female teachers perception towards all the '8' areas (considered together), revealed that female teachers perceived the regulations better than the male counterparts. The comparison between junior and senior teachers perception towards all the '8' areas (considered together) of study, revealed that senior teachers perceived the regulations better than the junior counterparts. Discipline-wise perception study revealed almost similar level of perception between science and non-science teachers.

'Benefits' of the sixth Pay regulation have been ranked first by all groups of teachers (gender-wise, experience-wise and discipline-wise). Teachers have highly ranked regulations with respect to 'Research and publications' (ranked IInd). Regulations regarding 'Work duration' (40 hours/week and 5 hours/day), 'In service training programmes' and 'Retirement age' have been ranked IIIrd by all groups of teachers. Next in overall ranking order were the regulations towards 'Recruitment conditions and procedure' and 'Promotion conditions (AGP/CAS)'. Furthermore, 'Contractual appointment' regulation has been ranked last among all the eight areas of UGC's sixth Pay commission regulations considered for the present study.

Table 1 shows comparison of degree college male and female teachers perception towards all 'eight' areas of UGC's sixth Pay regulations together. It also exhibits ranking order of each regulation on the basis of perception level.

TABLE 1
Gender-wise Perception of Degree College Teachers Towards UGC's Sixth Pay Regulations

(Values in terms of percentage)

UGC's Sixth Pay Regulations	*GENDER-WISE*		*Average*	*Ranking Pattern*	*Perception level*
	Male (N=87)	*Female (N=73)*			
Recruitment qualification and procedure	56.51	62.46	59.48	VII	Moderately perceived
Contractual Appointment	*70.97 (29.03)	*71.12 (28.88)	*71.04 (28.95)	VIII	Negatively perceived
Work Duration	68.92	65.58	67.25	III	Moderately high
In-service training	66.57	64.31	65.44	IV	Moderately high
Promotion condition	62.83	60.68	61.75	VI	Moderately high
Retirement Age	65.99	63.96	64.97	V	Moderately high
Research & publication	74.01	69.01	71.51	II	High perception
Benefits of pay scale	72.91	74.91	73.91	I	High perception
Average Perception	62.59	61.22	61.90	Positively perceived	

* Perception level is considered highly negative as the items under this regulation were worded negatively and thus values in parentheses was considered for computing average data.

Table 2 shows comparison of degree college junior and senior teachers perception towards all '8' UGC's sixth Pay regulations together. It also exhibits ranking order of each regulation on the basis of perception level.

© NIEPA

TABLE 2

Experience-wise Perception of Degree College Teachers Towards UGC's Sixth Pay Regulations

(Values in terms of percentage)

UGC's sixth Pay Regulation	*Experience-Wise*		*Average*	*Ranking pattern*	*Perception level*
	Junior (N=64)	*Senior (N=96)*			
Recruitment qualification and procedure	59.44	61.07	59.92	VI	Moderate
Contractual Appointment	*66.66 (33.34)	*72.89 (27.11)	*69.77 (30.22)	VII	Negatively perceived
Work Duration	66.22	65.08	65.45	III	Moderately high
In-service training	67.02	64.03	65.07	III	Moderately high
Promotion condition	64.18	60.88	62.53	V	Moderately high
Retirement Age	64.71	65.24	64.97	IV	Moderately high
Research & publication	64.24	74.94	69.59	II	Moderately high
Benefits of pay scale	72.47	74.38	73.42	I	Highly perceived
Average Perception	61.49	61.87	61.68	Positively perceived	

* Perception level is considered highly negative as the items under this regulation were worded negatively and, thus, values in parentheses were considered for computing average data.

Table 3 shows comparison of degree college Science and non-Science teachers perception towards all '8' UGC's sixth Pay regulations together. It also exhibits ranking order of each regulation on the basis of perception level.

TABLE 3

Discipline-wise Perception of Degree College Teachers Towards UGC's Sixth Pay Regulations

(Values in terms of percentage)

UGC's Sixth Pay Regulation	*Discipline-Wise*		*Average*	*Ranking Pattern*	*Perception level*
	Science (N=97)	*Non-science (N=63)*			
Recruitment qualification and procedure	60.57	58.96	59.76	V	Moderately perceived
Contractual Appointment	*71.39 (28.61)	*70.37 (29.63)	*70.88 (29.12)	VI	Negatively perceived
Work Duration	66.34	64.46	65.40	III	Moderately high
In-service training	65.70	65.27	65.48	III	Moderately high
Promotion condition	61.37	62.80	62.08	IV	Moderately high
Retirement Age	64.66	65.89	65.27	III	Moderately high
Research & publication	71.36	72.53	71.94	II	Highly perceived
Benefits of pay scale	74.63	72.22	73.42	I	Highly perceived
Average Perception	61.65	61.97	61.80	Positively perceived	

* Perception level is considered highly negative as the items under this regulation were worded negatively and thus values in parentheses was considered for computing average data.

The overall findings regarding '8' regulations are represented graphically in Fig. 1

Figure 1 shows graphical representation of overall average perception of teachers (gender-wise, experience-wise and discipline-wise) towards '8' regulations of UGC's sixth Pay commission.

FIGURE 1
Overall Perception of Teachers towards UGC Regulations

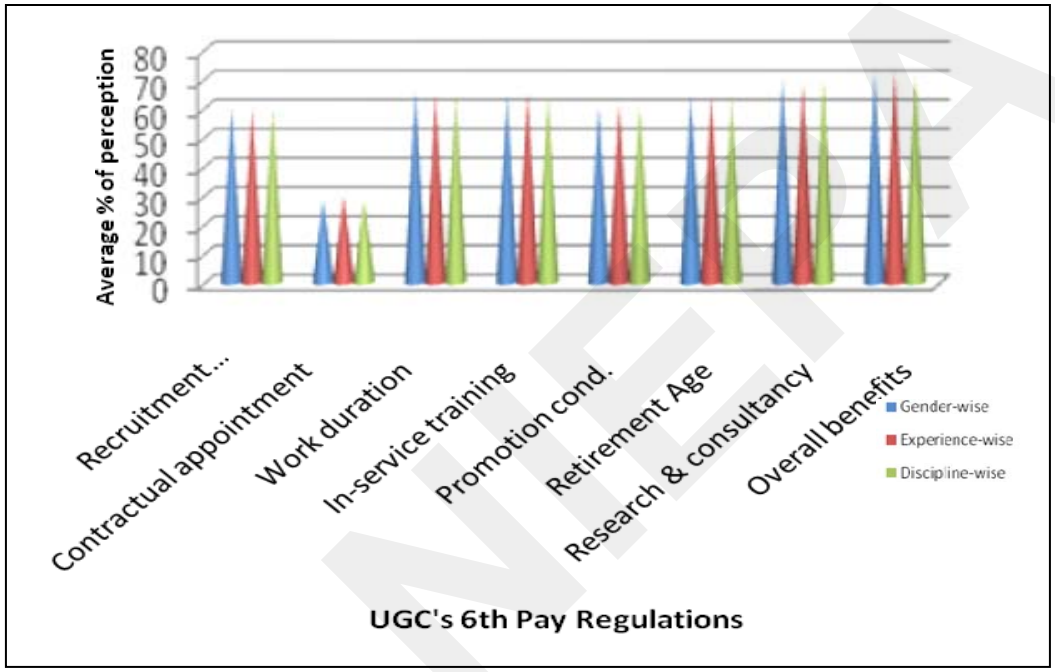


Fig. 1 shows graphical representation of overall average perception of teachers (gender-wise, experience-wise and discipline-wise) towards '8' regulations of UGC's sixth Pay commission. More or less uniform level of perception is obtained irrespective of gender-wise, experience-wise or discipline-wise.

All the groups exhibited high level of negative perception towards Contractual regulation. The overall quality degradation in teaching-learning is tremendously felt by the Senior faculties who perceived this regulations highly negative (Donde, 2004). The reason, as explained to the researcher during informal interview, is that they believe quality deterioration in higher education is due to the fact that teachers on Contractual appointment do not concentrate on one college work and simultaneously work in more than one college as they are not paid at par (consolidated/CHB) with the regular faculties. Commitment, dedication and sincerity towards work are low among such candidates as they use these opportunities to obtain experience certificate. Many remain associated to a college when they are connected to some coaching classes. Often Management of affiliated colleges prefers untrained/ineligible CHB candidates so as to pay less in comparison to the eligible candidates. Another reason is a low passing percentage of NET/SET candidates, and unavailability of qualified candidates, which has forced recruitment of ineligible candidates.

Recruitment qualification and procedure regulation has been found to be perceived moderately low among all the UGC regulations outlined for the study. This could probably be because many teachers (without NET/SET/M.Phil/PhD) are still temporary even after 10 to 11 years of service, whereas others, those who have passed NET/SET or acquired MPhil/PhD (after many years of service), are not being given any benefit for the services prior to clearance of NET/SET/M.Phil/PhD. Also there is a feeling of insecurity in the job. Other UGC regulations related to Work duration, In-service training, Promotion condition and Retirement Age, have been found to be moderately perceived by the teachers. In-service training, such as orientation and two/four week short term courses – the conditions laid down for scoring for AGP grade pay in the sixth pay regulations, has been perceived moderately high, probably because teachers feel that such training programmes will enrich them and enhance their teaching learning quality, which is essential for sustenance in the scenario of internationalization and privatization of Higher education. Also they believe that successful completion of the programmes will ensure AGP and CAS promotions. Even though there was slight apprehension noticed towards the PASS third category scoring system which is exclusively dedicated to research and academic contributions, it was felt necessary by many, hence positively perceived. The results of the informal interviews about 'Working hours' and 'Retirement age' regulations suggest that there is dissatisfaction about the conditions of 40 hours per week working hour and the medical test report, followed by the advertisement of the post for extension of Retirement age, including the condition of PhD requirement.

The perception study of teachers (gender-wise, experience-wise and discipline-wise), concerning all the '8' regulations, exhibits ranking order of each regulation on the basis of perception level. The comparison between male and female teachers' perception towards all the '8' regulations (considered together), revealed that female teachers perceived the regulations better than the male counterparts. Similarly, the comparison between junior and senior teachers' perception towards all the '8' regulations (considered together), revealed that senior teachers perceived the regulations better than the junior counterparts. Discipline-wise study revealed similar level of perception between science and non-science teachers.

The area of study towards 'Research' reveals that they have been perceived highly positive; the reason may be that the new impetus given to research has ensured their progress.

Response towards 'contractual appointment' is that this kind of regulation brings down the quality of education, as commitment and dedication of such teachers towards work are low, since the remuneration paid is meager in comparison to the scale given to their counterparts in regular appointments. Moreover, contractual appointees (aided optional subject, unaided courses and divisions) feel that even though they are qualified, their services are not considered at par with their counterparts. Contractual appointment is adding an element of impermanence to the appointments. Senior teachers feel that a 'Quick-fix' solution has in fact complicated the problem manifold and has gravely affected the teaching-learning process. Contractual appointees use this opportunity as a stop gap arrangement (or for getting experience certificate) before getting a more promising one. Moreover, senior teachers are feeling the pinch of quality deterioration due to such appointments.

Further, it is a general feeling that the entrance test introduced (NET/SET/PET) is alienating the best brains from teaching jobs and research, bringing the standards further down. Also, general opinion about such entrance examinations is that it can only judge the intellectual capacity of a candidate but cannot propely identify the teaching skills. Common view is that we need to urgently adopt corporate culture as there is lack of planning and training/orientation, accountability and spirit of professionalism. Efficiency and effectiveness in a teaching job is reduced; very few can argue with the proposition that our higher education institutions need a new infusion of dynamic and committed faculty. Industry participation through collaborative endeavors needs to be encouraged to gain experience for professional course and inculcate employable skills.

With regards to the overall benefits of the sixth pay regulations, teachers feel that the sixth pay commission regulations are very encouraging and it is time for all to give their best.

Conclusion

Dynamic faculty is pre-requisite to attract students. Evolved code of conduct (service conditions given in sixth pay regulations) with a higher salary package (performance based AGP) and strict monitoring rules (PBAS/PASS) is adequately formulated. The Performance Based Appraisal System is adequately modified to facilitate the recognition of talent and merit and create healthy competitive spirit. It is imperative to allow teachers to be part of the decision making and implementing machinery of the system. Moreover, lack of commitment and dedication is spoiling the noble profession. Perhaps, recognising the same there is a special mention of Code of Professional Ethics by UGC in the sixth pay regulations explaining the teachers' responsibilities. Pay scales and career advancement schemes regulations are very well supported by systematic PBAS and API with proposed scores. It is true that unless some regulatory changes take place, it will not be possible to improve the quality and standard of education and, moreover, it will also not be possible to sustain and survive in this competitive world. Hence, it is necessary that the proposed change (regulations) is properly implemented and measures are adopted that will make education attractive to others.

A thorough study of the Sixth Pay regulations reveals that the regulations developed by the UGC are, for the first time, formulated very specifically and are highly structured. The duties and responsibilities, as outlined in the regulations, confirm the need for upgradation of quality and overall performance of teachers. Moreover, it is also observed by all respondents that Selection procedure is outlined very systematically with Weightage Points and PASS. The condition, presented in the regulation, that the teacher has to claim for CAS three months in advance, that it is not automatic and that the actual date of promotion shall be the date of successful assessment, will keep the faculties alert towards fulfillment of norms, which will automatically take care of the staff development and improvement in teaching learning process. The challenge that arises from the above norm is that the candidates who do not fulfill the minimum score on the date of assessment will be reassessed after one year only, and the Associate Professors can also apply for selection as Professors by the Direct Recruitment.

It is essential to explore the limits of any policy, as recognition of limits may allow us to attend to those policy areas where success may be more likely. Many seminars conducted by the researcher for creating awareness about regulations of sixth pay and timely preparation

for fulfilling conditions to ensure benefits of promotions, with Faculties and Principals of Mumbai and SNDT university affiliated colleges of Mumbai, revealed several anomalies in the regulations during interactive sessions and interview schedule. They are summarized as follows.

First, no workload shown against the Principal of Degree College, in comparison to previous regulations of minimum six lectures, has caused commotion as there is a general feeling that it may deprive them of several opportunities on the apex academic boards. Second, in the new regulations for recruitment of Principals the five year fixed term has caused turbulence in the system, which is already in turmoil due to lack of regular principals in affiliated colleges of SNDT and Mumbai University. Eligible candidates are apprehensive to apply for the post as there are no clear guidelines about the Principal's services after five years. Hence there is a general feeling that the services will be in jeopardy as: a) Principal who may not be selected for second term in the same college or any other college may be forced for VRS, b) Associate professor who may be selected as Principal may be demoted. Third, it is observed that Govt. nominee is not recommended on selection panel; however, it is being advised to invite the Govt. Nominee on selection panel for Govt. aided colleges. Fourth, only 2 post of Professor (10% of number of Associate professors) are being created on an average in a UG college, by virtue of the norms recommended in the regulations. In case there are more than one Associate Professors complying with all requirements of professorial position and they claim for the post, it is unclear that on what grounds such claims can be rejected. There is a common view of the respondents that the criteria applied of Seniority for this regulation is unjustified. Fifth, keeping in view the above norms of percentage of Professorial designations, based on the number of Associate professors, B.Ed college faculties are demotivated as they will be deprived of Professorial designation/grade promotion in their institutions. Sixth, there is no clarity regarding the length of period that a faculty can remain on the same AGP, remaining unchanged and not upgraded to fulfill the conditions laid down in the regulations.

Furthermore, as per the perception generated by the Senior faculties, it can be suggested that if the above given anomalies are handled effectively by policy makers and the faculties focus on proper planning, orientation/training and resource management, the sixth pay regulations can bring radical changes in the higher education system.

Moreover, the following change in terms of the attitude factor was prominently observed in faculties with introduction of regulations:

	Attitude factor during Fifth Pay		Attitude factor during Sixth Pay
a)	Refused to work for 5hrs	a)	Least resistance
b)	Behavior outburst-assessment by student		Almost no behavior problems
c)	Strong Opposition to NET/SET/PhD	b)	No apposition
d)	Least interest in research and publications	c)	Enrolment in PhD high and participation in research projects
e)	Poor documentation and record maintenance	d)	Better awareness
f)	Ignorance towards many college activities	e)	Participation and involvement better

Researcher believes that thorough understanding of the relevance of the sixth pay regulations and a positive mindset of an individual faculty can help extensively for ensuring timely promotions. Further, they will have to remain alert and systematized to grab the benefits of the newly introduced regulations by timely fulfilling the norms laid down by UGC for AGP or CAS promotion.

Implications of the Study

This type of study gives insight into the teachers' perception towards the implementation of the sixth pay UGC regulations and its strength and weaknesses. It also helps to clearly identify major gap areas, as well as strategies and activities that appear to have a good potential for upgrading teaching profession. For the professional development of teachers it is necessary to review the regulations that govern the educational system. Reviewing of the regulations can help in preparing perspective plan and formulating appropriate strategies to improve it. Study of such a nature would motivate and encourage teachers (awareness of regulations and its strategy) to meet the challenges by proving their skill in teaching, as well as in research projects and publications, and seeking higher position in educational institutes.

References

Aggarwal, J.C. (1993): "Teachers Status and Service Conditions". *In* Development and Planning of Modern Education, Fourth ed. pp. 307-315

Chaturvedi, R.N. (1989): University Grants Commission in Operation. *In* The Administration of Higher Education in India. Printwell Publishers, Jaipur. pp. 102-103, and 147-190.

Cibulka, James G. (2000): "Contests over Governance of Educational Policy – Prospects for the New Century." *In* Educational Leadership: Policy Dimensions in the 21st Century, edited by Bruce Anthony Jones. Stamford, CT: Ablex Publishing. pp 3-20.

Covaleskie, J. F. (1994): The Educational System and Resistance to Reform – The Limits of Policy. *Education Policy Analysis Archives*. Vol. 2(4), ISSN 1068-2341

Dhawan, R. (2000): Impact of Academic Staff Colleges Programmes on Teachers and Students. *University News*, 38(16) pp. 14-20

Donde, S. (2004): A Perception Study of Degree College Teachers towards UGC's Fifth Pay Regulations. Dissertation submitted to University of SNDT, Mumbai as a part fulfillment of PGDEM course.

Naik, J. P. (1997): "Implementation and Evaluation". In: The Education Commission and After. A.P.H. Publication, New Delhi, pp. 54-73

Paul, J and A. Ramanathan, (2001): UGC-NET- A Valid Test. *University News*, 39(4), pp. 5-9.

Stella, A. (2002): Quality Assessment in Indian Higher Education – Issues of Impact and Future Perspectives. New Delhi, Allied Publishers. 236 p., ISBN 81-7764-182-4.

The Gazette of India, September 18, 2010 (Bhadra 27, 1932) Part III section 4

G.O. No.F.1-22/97-U.1 dated 27th July, 1998. [Revision of pay scales of teachers in Universities and colleges following the revision of pay scales of Central Government employees on the recommendations of Fifth Central Pay Commission.]

UGC Regulations 2010 of 30.06.2010. Gazette dated 18-24th September 2010

Circular no. Sankirna-2011/(25/11)-Vishi-1 dated 15.02.2010

Circular no. CONCOL/ 119 / of 2011 dated 7th June 2011.

GR no. NGC-2010/(415/10)-Uni-1 dated 30th July 2010

GR no. NGC-2009/(243/09)-Uni-1 dated 12th August 2009

Circular No. JDHEMUMBAI/Office-5/2010-2011/5 dated 04.01.2011.

Journal of Educational Planning and Administration
Volume XXVI, No. 2, April 2012, pp. 381-387

RESEARCH ABSTRACT

Socio-Economic Status and Academic Performance of Urdu Medium Students of Secondary Schools in Hyderabad

Md. Afroz Alam*

Title	Socio-Economic Status and Academic Performance of Urdu Medium Students of Secondary Schools in Hyderabad
Research Scholar	Md. Afroz Alam
Supervisor	P.H. Mohammad
Department	Centre for the Study of Social Exclusion and Inclusive Policy (CSSEIP) Maulana Azad National Urdu University (MANUU), Gachibowli, Hyderabad-500032, Andhra Pradesh.
Degree Awarded	M. Phil
Date of Award of Degree	June 2011
Number of Pages	153
Availability of Thesis	Library CSSEIP & Central Library, MANUU, Hyderabad

* Department of Education & Training, Maulana Azad National Urdu University, Gachibowli, Hyderabad-500032. E-mail: mdafrozalam86@hotmail.com

© National University of Educational Planning and Administration, 2012

Abstract

The present study examines the level of Socio-Economic Status (SES) of Urdu medium Secondary school students in relation to gender, age, sex difference and their Academic Performance (AP). A sample consisted 221 students of class 10th selected randomly from 16 Urdu medium secondary schools in Hyderabad. The study sample responded to a valid and reliable inventory instrument: Socio-Economic Status Scale (SESS) of Rajeev Lochan Bharadwaj. Data analysis involved the use of Pearson's product moment coefficient of correlation to measure the relationship between the Socio-Economic Status and Academic Performance along with t-test to measure the significance of difference between these variables. The results revealed that the Socio-Economic Status and Academic Performance of most of the Urdu medium secondary school students are poor. There is a high positive correlation between Socio-Economic Status and Academic performance of Urdu medium secondary school students. There is a significant mean difference between the Socio-Economic Status and Academic performance of govt. and private school students.

Introduction

As education is the means for bringing socio-economic transformation in society, various measures are being taken to enhance the access of education to the marginalized sections of the society. One such measure is the introduction of the reservation system in the institutes of higher education. Under the present law, 7.5% seats in the higher educational institutes are reserved for the scheduled tribes, 15% for scheduled castes and 27% for the non-creamy layers of the Other Backward Classes (OBCs). Under the Indian Constitution, various minority groups can also set up their own educational institutes. Efforts are also being taken to improve the access to higher education among the women of India by setting up various educational institutes exclusively for them or reserving seats in the already existing institutes. The growing acceptance of distance learning courses and expansion of the Open University system is also contributing a lot in the democratization of education in India.

Universal education with special emphasis on the minority education is crucial to the universalization of school education and to the improvement of socio-economic status of its community. Level of education is directly associated with gross domestic product, indirectly with poverty, population growth, health and crime rate. Despite its importance, education continues to be a neglected area at the policy level. After sixty-five years of planning, enormous funding and promises, total literacy continues to remain to be a distant dream. Apart from overall low levels of literacy at the national level, disparities across regions, genders, social groups, etc., are of serious concern. Interestingly, some of the so-called developed states like Andhra Pradesh seem to be doing badly as far as education is concerned. With a population of about 75.7 millions in 2001 (Census 2001), Andhra Pradesh is the fifth most populous state situated in the southern region of India. The literacy rate in Andhra Pradesh has always been lower than the All India average, so much so that the

results of the 2001 Census do not show a happy picture. Andhra Pradesh is among the three least literate States.

Due to socio-cultural and historical reasons, Urdu is identified as the medium of instruction, education and communication as it is the mother tongue of the Muslims, largely. In fact, the Urdu language is working as a link language in India. Given the need of surviving, the Urdu language needs strengthening. The Urdu medium education is considered to be an important measure. There are however, several problems associated with the Urdu medium education. The foremost among them is that students have to join regular schools without going through a pre-school education experience because of lack of using Urdu language Anganwadis. The Sachar Committee report (2006) stated that pre-school education means a facilitation process for children which is thus absent for the Muslim children who opt for Urdu medium and thus lack of it affects their preparedness for schooling. It further stated that the students completing primary education in the Urdu medium are faced with a problem in pursuing higher education as there are only few secondary and higher secondary education institutions in the Urdu medium. This means that any child who wishes to continue his/her education beyond class five has to access the Hindi/English/regional medium school. Not being well conversant in these languages of the state schools, the performance of the Urdu medium students is adversely affected. This makes it difficult for many to continue in school. Those who continue, do have to face repeated failure and the likelihood of their dropping from the school becomes higher.

The problems of Urdu medium education and their effect on quality of education needed to be urgently studied and analyzed. Promotion of Urdu medium education and study of the various schemes implemented by educational institutions to improve the quality of Urdu medium education is very essential. It is equally important to suggest the measures to improve the quality of education in Urdu medium education.

Objectives of the Study were:

- To determine the relationship between Socio-economic status and academic performance of Urdu medium secondary school students.
- To explore the relationship between Socio-economic status and academic performance of male and female Urdu medium secondary school students.
- To measure the relationship between socio-economic status and academic performance of Govt. and Private Urdu medium secondary school students.
- To determine the significance of difference in the academic performance of Urdu medium secondary school students with reference to high and low levels of socio-economic status.
- To explore the significance of difference in the academic performance of male and female Urdu medium secondary school students at different levels of socio-economic status.
- To investigate the significance of difference in academic performance of Govt. and Private Urdu medium secondary school students in relation to high and low levels of socio-economic status.

- To determine the significance of difference on the measure of socio-economic status and academic performance between male and female Urdu medium secondary school students.
- To investigate the significance of difference between Govt. and Private Urdu medium secondary school students in relation to their socio-economic status and academic performance.

Population and Sampling Methodology

Looking at the nature of the study and variables, descriptive survey method was adopted in this study. As per objective of the study, a list of secondary schools of Hyderabad was obtained from the office of District Education Officer. Out of all the schools, only 16 Urdu medium secondary schools including eight government and eight private schools were selected through stratified random sampling method for the purpose of enlisting the population of secondary school students. The sample comprised 221 students of class 10th selected randomly. Out of which 117 Male (78 from government and 39 from Private) and 104 Female (52 from government and 52 from Private) were selected for the study.

Tools Used

- Rajeev Lochan Bharadwaj, Socio-Economic Status Scale (SESS), Published by National Psychological Corporation, Agra.
- Academic Performance: The percentage of annual examination marks was considered as academic performance.

Procedure for Data Collection

For collection of data, the researcher sought the help of Principals and Teachers of the concerned schools and the students were encouraged and persuaded to give their honest and frank responses, ensuring that the data will only be used for research purposes. Test was administered by the investigator himself adhering strictly to the instructions given in the manual of the author of the test.

Analysis

The scoring of all variables i.e. Socio-economic status and academic performance was done strictly according to the guidelines and instructions provided by the author in the manual using the keys of respective test. The scores obtained from test were analyzed statistically. The main statistical techniques used for the data analysis were the Pearson Product Moment Coefficient of Correlation to see the inter-correlation among the involved variables. T-test was used for knowing the significance of difference between variables. Mean, Standard Deviation and Degree of Freedom were also used.

© NIEPA

Major Findings of the Study

On the basis of hypotheses testing the results and analysis of result discussion, the study revealed the following major findings:

- The first hypothesis, which is, that "there would be no significant relationship between Socio-Economic Status and Academic Performance of Urdu medium secondary school students" stood rejected indicating that there has been found to be a potential significant relationship between these variables. It revealed that correlation between Socio-Economic Status and Academic Performance is highly positive and significant.
- There is found to be a highly significant relationship existing between Socio-Economic Status and Academic Performance of Male and Female Urdu medium secondary school students. Thus, the second hypothesis was also fully rejected. It revealed that among male students, the relationship between Socio-Economic Status and Academic Performance is very positive and statistically significant. So also the results revealed that female students too had a positive and significant relationship existing between them in terms of their Socio-Economic Status and Academic Performance.
- The results obtained from Pearson Product Moment Correlation Coefficient also indicated that there is a significant relationship between Socio-Economic Status and Academic Performance of Govt. and Private Urdu medium secondary school students. Thus, the third null hypothesis was rejected, indicating that the relationship among Govt. school Students vis-a-vis their Socio-Economic Status and Academic Performance is positive and statistically significant. It shows further that among the Private school students too, this relationship on Socio-Economic Status and Academic Performance is also positive and significant.
- The results obtained from t-value exhibited that significant difference is found to be there along the Academic Performance of High Socio-Economic Status and Low Socio-Economic Status students. So, this hypothesis was also rejected. Socio-Economic Status plays a dominant role in deciding Academic Performance of students as the obtained t-value clearly indicates that there is a significant difference between High Socio-Economic Status and Low Socio-Economic Status students on the measures of Academic Performance.
- The results confirmed that Male students of High Socio-Economic Status perform academically better than the Male students of Low Socio-Economic Status as the mean scores of High and Low Socio-Economic Status were 55.81 and 49.75 respectively. It also indicated that the obtained t-value was found to be .800 in case of girls which means that there is no significant difference between High and Low Socio-Economic Status on the measures of Academic Performance among Female students. So, it can be concluded that there is found to be a difference between Male and Female on the measure of Academic Performance at High and Low Level of socio-Economic Status.
- It has no significant role play in influencing the Academic Performance of Govt. school students as the t-value shows, but in case of Private school students Socio-Economic Status does play a significant role in effecting their Academic Performance

as the obtained t-value shows. This clearly indicates that there is a significant difference between High Socio-Economic Status and Low Socio-Economic Status on the measures of Academic Performance. So, it can be inferred that there is a significant difference between Govt. and Private school students on the measure of Academic Performance at High and Low levels of Socio-Economic Status.

- So far as Socio-Economic Status is concerned, both male and female students belong to same status. Irrespective of Gender differences, both Male and Female students perform academically in the same way. So, the hypothesis is accepted, indicating that no significant difference exists between them by gender in terms of their socio-economic status.
- It is revealed from the obtained data that there is no significant difference between Govt. and Private school students on the measure of Socio-Economic Status while statistically there has been found to be a significant difference at 0.01 levels on the measure of their Academic Performance.

Educational Implications

On the basis of analysis and findings of the study, following implications of the study results are suggested.

- There is an urgent need to introduce the provision of a Guidance and Counselling Centre in each and every school, so that proper guidance and relevant information can be provided to the students.
- Orientation and refresher courses should be made compulsory for Urdu medium school teachers like College teachers, so that they can update their knowledge in concerned subjects.
- Information campaign should be started to make the Urdu medium students aware about the developments in the field of education; it will also help them know the problems of education and their role in solving these problems.
- Scholarship is a must for Urdu medium poor students and also to meritorious students to sustain it.
- The study has also revealed that students belonging to lower Socio-Economic Status groups are low in Academic Performance; probably the deprivation leads to drop-out and educational exclusion that occurs in that group. What these students need is special attention from Govt. of India and Govt. of Andhra Pradesh, particularly from MHRD to provide all facilities to the Urdu medium students belonging to the lower Socio-Economic Strata of the society.
- A Central Govt. Urdu medium Model Secondary School is successfully functioning in Falaknuma, Hyderabad, under the Maulana Azad National Urdu University. There is an urgent need to establish of many Schools like this in the Urdu knowing area of Hyderabad.

© NIEPA

Conclusion

The study revealed that the educational priorities of the Urdu medium students are influenced by the factors like income levels, educational background and other measures related to their socio-economic status and family background. Low level income group parents prefer to study at home or send their children to Urdu medium schools as these schools are available for them in their neighbouring vicinity. Having studied Urdu medium education prior to their joining a particular school or having acquired it at their home, these students feel it easy and convenient to get education in their mother tongue language which they know already. The following observation made in the Sachar Committee report assumes significance in the context of the present study: "It has to be noted that the future of the Urdu medium instruction at the secondary level and beyond may be counter-productive. Absence of good books and the employability of the students studying through the Urdu medium would create more problems than it would solve." The findings of the study do reveal some of the factors that determine the level of performance of these students and the impact that their socio-economic status has on their achievement. It also reveals that Urdu medium education students find it difficult to adjust and cope up with studies at post-primary stages in the normal rung of schools due to Urdu having been the medium of instruction. It suggests opening of a good number of Urdu medium schools at secondary and senior secondary level arrest their stagnation, wastage and drop-out from schooling.

© NIEPA

Journal of Educational Planning and Administration
Volume XXVI, No. 2, April 2012, pp. 389-392

RESEARCH ABSTRACT

A Study of Factors affecting Use of Computers by School Teachers in Teaching-Learning Process

Jyoti Bhalla*

Title	A Study of Factors affecting Use of Computers by School Teachers in Teaching-Learning Process
Name of the Research Scholar	Jyoti Bhalla
Supervisor	Prof. Najma Amin
Department	Department of Educational Studies, Faculty of Education
University	Jamia Millia Islamia
Year of Submission	June 2011
Year of Completion	November 2011
Number of Pages	430
Availability of Thesis	Library - Faculty of Education, Jamia Millia Islamia Central Library, Jamia Millia Islamia

* 322, Pragati Apartments, Punjabi Bagh Club Road, Paschim Vihar, New Delhi – 110063.
Email: jyoti1507@hotmail.com

© National University of Educational Planning and Administration, 2012

Abstract

The present study was conducted to systematically investigate various factors, and corresponding relevance thereof, affecting use of computers by school teachers in teaching-learning process such as to aid effective policy and strategy formulation in this direction.

In this study, the use of computers was studied in terms of the following components: computer aided learning (CAL), computer managed instruction (CMI), and computer assisted instruction (CAI). The manner and degree of computer use by teachers in teaching-learning process were found to be dependent on a number of factors. Some of the key factors included attitude of teachers towards use of computers (cognitive, affective, and behavioral domains), access to computer resources, support to teachers provided by the school, training of teachers in use of computers in teaching-learning process, and competence of teachers in computer use. The study also investigated the relationship between computer use (as a dependent variable) and various key factors (as independent variables).

Introduction

Due to recent advancements in information technology, computer usage has made inroads in myriad walks of life. Not surprisingly, the potential of computers usage towards enhancing teaching-learning process has also received considerable attention in recent times. It is imperative that the teaching-learning community and academicians gain competence in seamlessly integrating computer-based technologies in various learning paradigms such as constructivist, collaborative, and inquiry-based learning process.

Need for the Study

Various initiatives, mandates, and recommendations such as those put forth in National Curriculum Framework for School Education (NCERT 2000); Curriculum Guide Syllabus for Information Technology in Schools (NCERT 2001); 11th Five Year Plan National Mission in Education through ICT, and National Policy on ICT; in School Education (2009) have definitely served as catalysts to motivate teachers in this direction. However, statistical data based on some previous studies in recent past indicate that computer usage in teaching-learning process is much less than satisfactory. It seems that there is a general unwillingness among teachers towards imbibing use of computer-based technologies in their teaching-learning process. In light of the foregoing, it was strongly desirable to understand various factors affecting the use of computers by school teachers in teaching-learning process.

Sampling

With a view to providing a nation-wide perspective, 20 Kendriya Vidyalayas within NCT of Delhi run by Kendriya Vidyalaya Sangathan were randomly selected and from each selected schools, 15 teachers were randomly selected (excluding computer teachers). Thus,

a total of 300 Kendriya Vidyalayas teachers of NCT Delhi constituted the sample population of the present study.

Preparation of Questionnaire

A self-designed survey questionnaire was used as an instrument for data collection. The questionnaire was divided into two sections:

- The first section of the survey questionnaire was intended to gather information related to the five factors affecting use of computers by school teachers in teaching-learning process. With regard to computer attitude (Factor 1), an attitude-scale was constructed which included 34 Likert-type (1: strongly disagree – 5: strongly agree) items designed to measure cognitive domain, affective domain, behavioural domain of computer attitude. With regard to computer access (Factor 2), the teachers were asked to rate their level of computer access in the context of five sub-categories of computer access: hardware availability, software availability, computer location, provision of requisite computer resources and home computers by checking all that apply (1 = checked; 0 = not checked). With regard to school support (Factor 3), the teachers were asked to rate their level of school support for computer use on a 3 point scale: (1 = never, 2 = sometimes and 3 = always). With regard to computer training (Factor 4), the teachers were asked to rate their level of computer training received, on a three point scale: (1 = never, 2 = occasionally and 3 = regularly). With regard to competence in computer use (Factor 5), the teachers were asked to indicate their competence in use of computers on a three point scale: (1 = can't do, 2 = with difficulty and 3 = comfortably).
- The second section of the survey questionnaire was intended to seek inputs from the teachers with regard to respective extent of computer use in Computer Aided Learning, Computer Managed Instruction, and Computer Assisted Instruction on a 5-point scale: (1 = never, 2 = rarely, 3 = sometimes, 4 = often, 5 = always).

The initial draft of the survey questionnaire was evaluated by a panel of experts for content and face validity. Based on the feedback thus received, a quasi-final draft was prepared. The Cronbach's Alpha reliability coefficients were also calculated for various categories in the questionnaire namely, (1) attitude of teachers towards use of computers; (2) teachers' access to computers; (3) school support to teachers in use of computers; (4) training of teachers in use of computers; (5) competence of teachers in use of computers; and (6) use of computers by teachers in teaching-learning process, on the try-out sample based on the quasi-final draft. These coefficients indicated adequate to high level of reliability.

Data Analysis

Various statistical techniques were used to study the selected factors affecting use of computers. Amongst the CAL, CMI, and CAI components of computer use, CAL is the most popular while CAI is the least popular. Although the teachers were found to have a positive attitude towards use of computers, the overall computer access, provision of support for use of computers, training of teachers in computer use, and competence in use of computers still

require significant attention to foster greater use of computer by school teachers. The product moment correlation coefficients indicated a significant positive relationship between computer use and factors affecting computer use, except in the case of CMI, in which the relationships between cognitive and affective domains of attitude and CMI were found to be 'not significant'. The regression analyses revealed that the use of computers by school teachers was predicted by training of teachers, competence of teachers, and computer access in a decreasing order of predictive values. The use of CMI was predicted by attitude of teachers also, but unexpectedly, attitude of teachers negatively influenced use of CMI. Out of these independent variables, training of teachers in computer use had the greatest predictive value for teachers' use of computers (CAL, CMI, CAI and overall) in the teaching-learning process.

Significant Findings

According to the findings of the study, it was found that in general, there is a need for improvement with regard to various key factors that were studied. While teachers were found to have a favourable attitude towards use of computers in teaching-learning process, distinct improvement needs exist with regard to other factors such as, access, support, training and competence. Based on the study, it may be concluded that training of school teachers needs foremost attention. Various steps required for training of teachers in basic computer operation, social and ethical issues, integration of software in curriculum, and so on, should be taken up with paramount priority and importance in education policy and strategy framework over the next few years. The study also reveals that it is desirable that teachers gain more competence in distinct facets namely, technology, pedagogy, and integration of technology and pedagogy. In addition, the study indicates that various steps towards improving teachers' access to computers with regard to availability, location and provision; and school support with regard to maintenance, technical assistance, sufficient time for planning, and so on, will also go a long way in enhanced integration of computer use in teaching-learning process.

Conclusion

The present study facilitates an understanding of various factors that influence the use of computer by school teachers. The study provides a list of strategies and recommendations regarding the modes of improving computer access, practices to enhance school support, kinds of computer training needed by teachers and ways to improve competence of teachers in use of computers. Therefore, it is believed that the present study would empower stakeholders responsible for policy and strategy formulation with vital information and aid implementation of suitable measures for effecting widespread adoption of computer use in teaching-learning process.

Journal of Educational Planning and Administration
Volume XXVI, No. 2, April 2012, pp. 393-411

Book Reviews

MADAN, V.D. (2007): **Quality Assurance in Higher Education — An Omni-Systemic Approach.** Three Volumes. I, II & III. New Delhi: Authors Press. ISBN: 81-7273-373-9. Pages: 544 (in all) (Hardbound), Price: ₹ 1500/- (3 Volume set)

History echoes the incessant human effort to make this world a better place to inhabit. Collective efforts have been invested to discover viable ideas in the form of science, technology and society at the institutional level.

In the struggle to exist, whether of a species (life sciences) or of an idea to manifest (society), it would depend on the two criteria, viz., discretion to select from among the available alternatives and the ability to evolve sustainable steps to remain relevant to the context. In short, in times when access to information becomes available, the probability of exercising discretion and sustainability would largely depend on the identification of measures to improve the credibility.

In the 21st Century Education as a social enterprise has increasingly become a fertile area for research and innovation. Expansion through diversification of knowledge domain has resulted in the coming up of institutions at different levels; Higher Education represents one of these. Institutional credibility can be built through the assurance of Quality in the programmes.

Quality assurance in Higher Education has always been the deep concern of apex educational institutions and agencies all over the globe. In the present time, it has become a mission statement of every institution. However, the achievement of the set target in quality graph is reciprocal to the perspective about Quality per se.

The book titled *Quality Assurance in Higher Education-An Omni- Systemic Approach* has attempted to respond to various issues and challenges that beset developing and developed countries to attain quality measures at the institutional level in Higher Education.

In the foreword, Prof. R. P. Sharma precisely contextualises the mega dimensional parameters attempted by the author to auger management in higher education institutions, spanning the immediate to the sublime, simultaneously. The prologue and the epilogue are informative and ensuring as the author deftly handles the Omni tech perspective.

The three-volume books present a comparative analysis of the themes, perceptions and facts related to Quality concerns in Higher Education. Documentary analysis is used to highlight the systemic evolution of Higher Education or University System. In volume I, it overviews the existing role of distance education institutes.

Quite in phase with the turmoil to address quality vs. quantity perspective, the book skillfully introduces the Omni Tech Paradigm in Higher Education Institutions. The frame of reference earmarked is international agencies like UNESCO and COL (Commonwealth of Learning) in the context of countries such as France, Australia, Canada, and the United States and its sporadic linkage with the Indian scenario as well.

© National University of Educational Planning and Administration, 2012

In Volume II, the book discusses the advent of Massification and Explosion in Technology along with globalisation of knowledge. It apprises the reader of the paradox to handle quality with quantity only to strategically compel the reader to rethink oft quoted captions such as 'Small Is Beautiful' (Schumacher) on one side, and 'more the merrier' (hedonism), on the other.

The reader is frequently exposed to repetitive statements. This could be to allow fermentation and sedimentation of ideas. However, even if tangentially connected, it could be omitted as well for fear of redundancy and deviance from the issue. The book acknowledges the commercial interests that have taken over as prime movers in educational initiatives. The contentious issue of commercialisation vs. idealism in practical terms is discussed at length and a case made to use the Omni Tech Paradigm to sort out the ineffective deliberation in Higher Education.

In the present epoch, the contours of the University have moved from being a mere centre of learning, a trainer of the young mind, creator of knowledge and a transmitter of culture, to a major agent of professional growth and the social development of an information society.

The book highlights a quantum escalation in the emerging role of Open University in the global age. The Omni Tech Paradigm alludes to education and technology where bits and bytes of effort are discounted. It examines the non conventional education offered through distance mode, catering to the number of people with the quality assurance in the delivery system and the content. A rational case is built to centralise the canonical role of Open University in decentralising education. With equal firmness and humility, Prof. Madan discusses the short comings of present technological application, limited to access of hardware so far. He offers the inclusion of study of Axionoetics as mandatory for any transformation in technology which connects to the society.

To respond to the different understanding of intelligible ideas & quality, freedom and life styles deeply ingrained in assumption connected to it, the book picks up debatable issues of democracy, mediocrity and meritocracy and translates them as phenomena of coexistence in the form of opportunities, access and accountability

In education the challenge of expansion and differentiation -- call it diversification -- is considered as an explosion in knowledge. The dynamics of 'access and assess' need to be consolidated through a Systemic Approach, for education to strive for excellence and quality benchmarks. The statement, 'Education is 'a two-way communication process between teacher and student' is dimensionally limiting and outdated. In the age of probability as against certainty, communication, at least, is among three components: the teacher, the student and the environment or the medium in which they transact. The environment canopies a host of variables as persons, objects or events.

The style of employing case studies to facilitate understanding of the concepts in operation is duly justified from the reader's point of view. The statistical data lends credibility to the author's contentions.

Even as the book takes up the pedagogical content to formulate or implement the Omni Tech paradigm for Quality Assurance in Higher Education, it leaves room for theoretical disputations. It offers a paradigm in response to insurmountable challenges that beset higher education. It shows a connect between the 'Aspiration, Expectation and the Process' to achieve it through sustainable credibility, systemically. Collation of a large data at one place makes the book a source of ready reference for future study of Higher Education and

Quality Management. The presentation of the Bibliography and the index facilitate reader motivation.

The claims to Quality perception cannot be exclusive to a section; it has to be an integral part of the whole existence. Quality is a continuous, comprehensive and a collaborative process of proficiency in performance. The author calls for 'a proactive stance' to make it a reality. It appears to be an autobiographical, professional return to Open University system where he invested his life. It enunciates dynamics of quality assurance as transformation, evaluation and functioning, affecting the educational system where collaboration and technological resourcefulness, credibility and co-existence, flexibility and functionality, are the bottom-line message for educators. It suggests education beyond the bounds of time, space and distance. It is a resource for many stakeholders of educational management engaged in policy framing to the policy implementation.

Prof. Madan's attempt is a fine example of the perseverance of purpose. To my mind, the author has succeeded in exploring an alternative construction of quality in higher education at the institutional level. The review evokes the observation: Quality (assurance) is the way to Credibility.

Central Board of Secondary Education (CBSE), Shiksha Sadan,
17, Rouse Avenue, Industrial Area, New Delhi-110002

Rashmi Sethi
synapsecbse@gmail.com

GOVINDA, R. ed. (2011): **Who Goes to School? Exploring Exclusion in Indian Education.** Oxford University Press, New Delhi. Pages: xxvi + 421. ₹ 795/- (Hardbound).

This edited volume of work, as the title suggests, focuses on exclusion of children from schooling in the Indian context. It attempts at easy conceptualisation of exclusion often relying on quantitative categories indicating only access/non-access to schooling of children. In this attempt, the tone of most of the essays in this volume aligns with what the editor rightly sums up in his concluding observations, that 'exclusion from schooling, where going to school is the norm, is not merely an event…but a complex process involving a range of factors in the personal lives of children and households, as well as schooling contexts available to them' (pp. 405-406).

The introductory chapter occupies almost a fifth of the entire volume and provides not only a broad overview of the status of elementary education in India but a summative analysis of factors, both demand-side and supply-side, upon which participation of children in the education process is actually dependent. In this chapter, the authors, R. Govinda and Madhumita Bandyopadhyay, also elaborate upon an adapted framework–'zones of exclusion' – that helps to disaggregate the analysis of exclusion based on stages of education and the corresponding status of participation of children. Most of the other chapters in the volume reinforce this call for a disaggregated analysis of exclusion while pursuing their own analysis of the phenomenon along various axes: social, gender, rules and norms of education administration, diversity of school experiences, decentralisation of education governance, issues pertaining to teaching as a vocation, migration, and nutritional status of children.

Mona Sedwal and Sangeeta Kamat, in the next chapter, deal with the issue of exclusion among socially disadvantaged groups. In tracing the history of marginalisation of the

scheduled castes and scheduled tribes and the role of education in the specific conditions of disadvantages these groups are inscribed by, the authors draw out both commonalities and differences that mark this history, and the place of education in this history. The chapter then elaborates on the progress made in the access of education for these disadvantaged groups and the problems that still persist in a more provision-rich environment of recent years. After reviewing the policy initiatives which have served to alleviate the situation of the marginalised groups, Sedwal and Kamat point out the need for a broader approach to social equity, and thus policy, which can address the diverse factors reinforcing exclusion at both the end of the home and the school.

The next chapter by Madhumita Bandyopadhyay and Ramya Subrahmanian, though approaching exclusion through the primary lens of gender, rightly contextualises gender equity within broader social and institutional dimensions that overlap with and reinforce gender-based inequalities in the Indian context. After reviewing recent trends on gender parity in education and persisting problems, the essay provides a detailed overview of different institutional efforts that have tried to address gender equity in education. One of the important points that emerge from this overview, as a possible policy direction, is the effectiveness of women's collectives and mobilisational movements such as the Shiksha Karmi, Lok Jumbish, and Mahila Samakhya, which have built stakeholder groups involved in a broad spectrum of interventions surrounding education at the grassroots.

In a vein contrary to extant research, which has looked at factors such as parents' literacy and a variety of school quality indicators as influencing school dropouts, the chapter by Shanta Sinha and Anugula N. Reddy posits how the rules and norms of education administration have potentially militated against access to schools by underprivileged groups. Some of these rules and norms include inflexible admission schedules and documentation requirements (for example, caste/income/transfer certificates). The authors cite an example of a more flexible and responsive education governance process in Andhra Pradesh that came about through a layered and iterative interaction between the community and school administration, and facilitated by a civil society institution. However, as the authors themselves point out on one aspect of this 'experiment', scaling-up such initiatives remains a problem and so the question still remains of how more widespread systemic changes can be fostered or sustained.

A number of recent studies have indicated the worrying trends of growth in low-fee paying schools (or private, unrecognised, budget schools). These schools have also been observed to be linked to a demand for education in English, reflecting a drive for socio-economic mobility from disadvantaged groups. Nalini Juneja's chapter, on one hand, refocuses our attention to some of these trends. On the other hand, it also provides a more nuanced view of both existing and emergent forms of government and private schools and the spectrum of sub-categories these display. Such an analysis shows how state policy is implicated, both explicitly (through newer categories of schools and discriminatory resource allocation that government policy itself propagates) and implicitly (through weak and ineffectual regulatory mechanisms), in creating an hierarchy of schools. This hierarchy then serves as a conduit for further reproduction of socio-economic inequalities by channelising schooling possibilities differentially to different population groups.

The subsequent chapter by R. Govinda and Madhumita Bandyopadhyay turns to the issue of decentralisation of education governance as a means of promoting access to education. Outlining the unevenness of the progress of such decentralisation, mainly due to

political factors, the authors do try to make four trends of decentralised governance visible even amongst this unevenness. These four trends are: decentralisation through state legislation; a more cautious and gradual approach of combining devolution of powers and responsibilities to local bodies with legislative measures; creating and empowering local bodies supplementary to the extant statutory bodies; and, grassroots engagement in actual processes. The authors also rightly emphasise that efforts towards decentralised education governance, whether initiated by the state or civil society groups, would require convergence and legitimisation for their long-term sustenance.

Issues pertaining to the teaching profession undoubtedly have an effect, both direct and indirect, on the participation of children in education. Mona Sedwal deals with a range of such issues in the next chapter. On one hand she touches upon broader structural issues such as social distanciation between teachers and students. On the other hand, she elaborates on a number of systemic and institutional issues, which include: unevenness of supply of teachers and widespread variations in teacher deployment both between states and within states; high incidence of teacher absenteeism; employment of para-teachers under the rationale of constrained state finances; and, woefully inadequate nature of teacher training.

Touching upon yet another issue affecting exclusion, Smita, in her chapter, observes how, given that distress seasonal migration has increased in recent years and that population groups undertaking such migration broadly overlap marginalised groups, there is a surprising lack of efforts to consolidate data on such migration and initiate targeted schemes towards this issue. The author juxtaposes an overview of the phenomenon of distress seasonal migration with case studies from specific geographies to underline both the complexity and disturbing nature of the problem. The inability of static datasets to adequately capture migration-related information and the need to decentralise such data-gathering process to the village and school level is rightly underscored. Examining different intervention models that have tried to deal with the issue of education of children of migrant populations, Smita emphasises the need for attention in policy interventions to provide for diverse schooling options at both sending and receiving areas of such populations. Though mention is made of the flexible schooling options that have come into being with the Sarva Shiksha Abhiyan, the focus of the chapter appears to be more on civil society interventions, rather than the former. It would have been useful to know to what extent state initiatives, especially those of recent years, have fared in addressing the issue of education of migrant children, maybe in comparison to the NGO interventions that the author refers to.

In the penultimate chapter of the edited volume, Neelam Sood provides a review of global research on the links between malnutrition and cognitive development of children; this is expectedly seen to be negatively related. Analyses of the extent of malnutrition in India also reveal a grim picture, where not only the health of children continues to be a neglected issue, but also the incidence of burden is seen to be more severe on marginalised groups, and in rural areas. A review of research across a wide range of countries in both Africa and Asia establishes that malnutrition does have a negative impact on school participation of children, however defined. Finally, as Sood shows, analyses of the two large programmes targeted to address issues of child development and nutrition – the Integrated Child Development Services (ICDS) and the Mid-day Meal (MDM) programme – reveal disturbing findings. For the former programme, poorer states that are likely to have proportionately higher figures of malnutrition among children show lesser coverage of

children under the scheme. On the contrary, the MDM seems to indicate more positive outcomes in the form of child enrolment, especially of girls and from marginalised social groups, though, as rightly indicated by the author, some of these findings need to be further researched in terms of strength of predictors and the effects over a longer time period.

The concluding chapter by the editor of the volume rightly points out that in the Indian context, while there are a number of factors such as gender inequity, social inequity, locational disadvantage, and poverty that have a bearing on exclusion, these factors do not have singular impacts. The appropriate approach in treating these factors, therefore, would be to see them as interrelated, creating a 'complex nexus of exclusion' (p. 407). The chapter also summarises the new research areas that the studies in the volume point towards: estimation and studies of other severely marginalised groups of children (for example, street or homeless children) besides migrant children; assessment of the contributions of temporary statal provisions to improve access, and to what extent and in what forms can they be viable in the long run; and, studies to understand the domains in which civil society initiatives can supplement the role of the state;

The richness of the volume lies in its extensive review of extant research on most of the specific areas of inquiry that each of the contributors delves into, as also the macro-analysis of large-scale survey data that is juxtaposed with such a review. Such an approach, across the chapters, reinforce the urgency to take up more grounded and disaggregated empirical research to understand the variability of contexts and complexity of influencing factors that prevail in the Indian context. However, given this common refrain, the contribution of this volume to current understandings of exclusion in education would have been greatly enhanced if there were a number of such studies juxtaposed with the mostly macro-analytical approaches pursued by the authors contributing to the volume. The call for micro-level studies, preferably adopting mixed-methods, is also implicit in the revelation of many of the studies that the quality of macro-level data pertaining to different aspects of school education is both inadequate and suspect. Across the chapters in the volume there is also recognition of the fact that a high variability prevails among states on a range of factors, such as, for example, distribution of private schools, which do have a bearing on access to education. Though such variation is sometimes explicitly noted, and often indicated to be related to policies at the State level, this line of inquiry seems inadequately addressed in the essays.

A number of immediate policy directions that many of the chapters suggest, either explicitly or implicitly, is also a significant contribution of this volume. To name a few: decentralisation of data collection and utilisation to the school level; and, disaggregation of policy and programme initiatives, which may need to acknowledge even intra-group diversities, for different population groups. Finally, the strength of the volume lies in the problematisation of exclusion, whereby both structural factors and recent trends such as increasing informality of the work force and growing diversity of schooling systems are recognised as important factors that need to be included in any analysis of school-related exclusion in the Indian context. However, the question that remains to be addressed is: 'How can then "exclusion" be re-conceptualised theoretically to further such analyses?'

Azim Premji University, Bangalore-560 100

Rahul Mukhopadhyay
rahul.mukhopadhyay@gmail.com

GUPTA, B.L. (2011): **Academic Audit.** Concept Publishing Company Pvt. Ltd. New Delhi. ISBN: 978-81-8069-737-1, Pages: xvii+218, Price: ₹ 600/- (Hardbound).

The book under notice deals in essence with quality assurance, sustenance, improvement and innovation through academic audit. In nine chapters, the book covers an overview of academic audit, and audit of the vision of the institution, the organizational structure, the institutional plans, the curriculum, the case method, the industrial training, the learning resources and the performance appraisal system. A Case Study on introducing Academic Audit in Technical Institutions deals with the problems and difficulties in academic audit. In appendix 30, formats are given to audit educational processes and outcomes. The author urges readers to use the formats and diagnose the strengths and weaknesses of the educational programmes.

There is a natural concern about the quality of education imparted in educational institutions, especially at a time when there is a move to expand educational facilities. The objective of the 11th plan is expansion, inclusion, rapid improvement in quality throughout the higher and technical education system by enhancing public spending, encouraging private initiative, and instituting long overdue major institutional and policy reforms as the core of the plan efforts (India 2011). Next, to ensure quality, the National Knowledge Commission has called for reform of existing universities to ensure frequent curriculum revisions, introduction of course credit system, enhancing reliance on internal assessment, encouraging research and reforming governance of institutions (Indian Journal of Public Administration–July-September 2010). In the same context, Narayan Ramaswamy (2010) observed that while there has been substantial increase in the number of educational institutions in recent years, quality of education provided has been an area of concern. Today, the role of universities in quality control (self governance and periodic reporting is limited. Here the efforts of the government and regulator will not be adequate. Universities and educational institutions have a responsibility to set norms internally. With increasing clamour for independence and autonomy, this should be made mandatory criteria for university status (The Hindu Survey of Indian Industry, 2010). This book addresses the concerns of improving quality internally through academic audit.

Academic audit is a systematic and scientific process of designing, implementing, monitoring and reviewing the quality of the academic system through inputs, processes and outputs. It is a system for assuring quality of products and services of the institution. It builds a quality culture around the core academic processes of the institution. It helps the institutions to align the quality of efforts with the vision of the institution. It is not a review or assessment or academic monitoring or evaluation of the institution by a statutory body against set national standards. The significance and benefits of internal audit are: refinement and perfection of competencies of all members; continuous improvement in performance; corrective action at the right time without intervention of management or external efforts; sense of achievement and satisfaction; positive and constructive feedback; greater ownership for quality, building quality culture and enjoyment of the fruits of quality. The academic audit conducted by experts reveals the gaps in the system. They provide the latest inputs to academic system design. The academic audit is designed along with the strategic plan of the institutions.

The vision acts as a guiding base for taking major decisions for the institution. It indicates the future intent of the institution, say, after ten years or so, what it wants to achieve in terms of customer satisfaction. It provides a clear picture about the destination of the institution. Generally the vision of the institution is constant that forces the institution to design a strategy to achieve it. The vision audit is a powerful tool to achieve the processes of visioning the quality of the vision of the institution. It may help the institution to revise, refine, modify and even recraft the vision statement which is relevant to time and context and beneficial to the institutions. The author urges that the technical institutions should evolve organizational structures that facilitate human resource development. The organizational structure is audited on criteria like decentralization, delegation, empowerment of people etc. (Format 3.1, pp. 56-57).

Institutional plans indicate the aspirations of the promoters of the institutions and guide the actions of all members of the institution. The vision, missions, goals and objectives guide the administrators to take policy decisions about the future growth, development and quality of business of the institution. This also helps in preparing strategic, perspective, annual and project plans of the institutions. Faculty and staff members implement the plans in collaboration with external stakeholders to achieve the objectives and goals. The audit is a useful process for assuring and improving quality of institutional planning process. Next, the curriculum management is the core academic business of the institution. The quality of graduates is assured through scientifically designed, implemented and evaluated curriculum processes. The curriculum audit is a systematic review of the aims, competencies, learning processes, learning methods, learning resources and assessment methods to compare the curriculum standards with the quality of implementation.

The case study method is used for developing higher level of cognitive competencies. To assure the quality of learning of the students, the case method should be formally as well as informally audited. Learning from the audit is used to refine the case studies, and method for use of case studies. On the basis of the results and experiences of case methods, training programmes are designed for teachers to refine their skills of using case method. Next, the industrial training is organized to develop and refine threshold technical, managerial, social and professional competencies in students. They integrate all the information, skills and attitudes to perform the task in real life situation. All new models of curriculum development emphasises developing competencies using a hands-on experience approach. The audit of industrial training will ensure the quality of learning on threshold competencies of students so they become employable at the right position at the right time.

The learning resources (LRs) are designed to enrich teaching-learning processes, and save time and efforts of teachers and students in the learning process. Change stimulus involves students in the learning process, and gradually shift the responsibility of learning on students. LRs are used considering the requirements of the curriculum, learning style, availability of time and other resources. The LRs are audited on process of development, quality of LRs and their use by teachers and students using objective criteria. Next, institutions design the performance appraisal instruments based on the strategic plans of the institution, core areas of performance, curricular and co-curricular requirements, statutory requirements, present as well as future expected roles and responsibilities of the faculty and staff members, expectations of internal as well as external stakeholders, personal aspirations and ambitions of individuals. The audit of performance appraisal system is conducted to assess the effectiveness of the current performance appraisal system, refine it

in the light of current and future requirements, and educate the faculty and staff members to implement the refined performance appraisal system. A study of interest is of B.K. Punia and Renu Siwatch (2010). "Performance appraisal of university faculty in India. Present status and futuristic model." They reported that self appraisal only without comments of HOD has emerged as the most common faculty evaluation practice in the university system. However, in futuristic terms, classroom environment factor which is a blend of class-teaching and student evaluation of faculty need to dominate in faculty appraisal matters, and it should be followed by the research contribution factor. As a whole, approximately two-thirds of the total rating score must constitute from the above-mentioned factors and the rest of the factors, i.e., extension activities, self review and development and third party ratings, should constitute approximately one-third of the total rating score in matters of faculty progress and performance pay matters. The implementation of the model in letter and spirit will be ultimately beneficial for the entire education and social system, as it will encourage the faculty to be more autonomous, responsive and accountable (Journal of Educational Planning and Administration, April 2010).

In sum, the book is based on the experience of the author in the field of technical education and is the outcome of many precedent training experiences, workshops and seminars on quality education and research studies conducted in the past. It will serve as a manual for academic audit and induce principals and faculty of engineering institutions to undertake studies on academic audit to improve the quality of technical education. It will also be useful to administrators and faculty of higher education and school education. They can modify the formats of the book to their requirements. The book will be of interest to all those who are desirous to raise the standard of education. Prof. B.L. Gupta deserves the gratitude of the readers for his endeavour.

A useful contribution.

B-58, Inderpuri
New Delhi-110012

P.C. Bansal

GERTLER Paul J. (2011): **Impact Evaluation in Practice** . Washington DC: The World Bank. ISBN: 978-0-8213-8514-8, eISBN: 978-0-8213-8593-7, Pages: xvi+244. Paperback.

Many public policies, programmes and projects aimed at improving the welfare are formulated, designed and implemented with the hope that they are relevant and benefit the targeted populations. However, many programmes are not easily amenable for quantifying the accrued benefits and it is simply impossible to conclude whether they have succeeded or failed. Understanding, identifying and measuring the lasting changes (both intended and unintended) that are brought about in people's lives as a result of a development intervention or a policy – that is the impact of the policy, programme or project – is a fascinating and challenging task. The central problem concerns with the evaluation of the effect of exposure of a set of units to a programme or treatment on some outcomes. The object of interest is a comparison of the two outcomes for the same unit when exposed, and when not exposed, to the treatment. The problem is that we can at most observe only one of these outcomes as the unit is observed in only one of these states. Conventionally, impact

evaluations are conducted using quantitative methods like survey data collection or simulations. It is customary among evaluators and researchers to compare the outcomes of a programme 'participant group' with the outcome of a 'control/comparison group' (sometimes experimental group) and depending on the 'gains' of the participants relative to non-participants/controls, before proceed to conclude that the programme has benefited or has been successful.

Unfortunately, the control/experimental group is not the exact counterpart of the programme participants. The fact that they are not a part of the programme indicates that either they are not eligible or not willing to join the programme. Those who choose to enroll (participate) in a programme are by definition different from those who choose not to enroll (not participate). These two differences introduce the self-selection and endogeneity issues respectively. This means that there are differences between the backgrounds of the control group and the participant group. Even if the control group is selected with proper matching of the backgrounds, necessarily there is bound to be (both observed and unobserved) heterogeneity among the sample, and it is simply impossible to ascribe the differences in the outcomes between the two groups to the treatment effect of the programme. The control group may experience a similar outcome simply because of some other factor, even without the spillovers from the programme. Therefore, if the differential backgrounds influence the response, then they may invalidate causal comparisons of outcomes by treatment status, even after adjusting for observed covariates. What one needs to find out is the pairs of outcomes defined for the same unit given different levels of exposure to the treatment (with and without participation in the programme). But, the sample unit is observed in only one of these states, unless the same sample unit is observed in the pre-programme implementation part. This is what the modern methods of impact evaluation attempts to do: construction of outcomes with and without programme participation for the (same post-programme) observed sample unit. The latter is known as counterfactual and the challenge lies in indentifying appropriate counterpart (data) and the methods of evaluation.

The biggest challenge in any programme evaluation then is to find a good counterfactual or the potential outcome — the 'gold standard of impact evaluation' – what would be the situation if the programme was not implemented or if this participant had not participated in the programme. The question is: whether there would be any change in the parameter (outcome) of interest in population even without this programme implemented? That is to say, one needs to find out the difference between the outcomes under this programme and the outcome had this participant not participated in the programme. Hence, the impact evaluation should focus on the same observation unit with and without participation in order to gauge the extent of the benefits of the programme. To overcome this challenge – what would have happened to the targeted population, had they not participated in this programme – the available programme evaluation literature has devised important methods like randomisation, propensity score matching, double difference, instrumental variable estimation, and regression discontinuity method. All these techniques try to identify the counterfactual and provide a valid sample of the 'comparison group'.

In this respect, any attempt to give a systematic and comprehensive analysis of the approaches to impact evaluation, that too to the practitioners, is very welcome. This is what the World Bank team attempts to do. This World Bank produced book '*Impact Evaluation in Practice*' presents an easily accessible, comprehensive and clear guide to the evaluation of the causal impact of programmes on the targets and its practice in development and is

available as an interactive textbook available at http://www.worldbank.org/pdt for users with an additional ancillary material available http://www.worldbank.org/ieinpractice. The book comprises three parts, consisting of 14 chapters, along with one line key concepts, glossary and index. The book also contains 26 boxes, 32 figures and 29 tables. Each chapter also contains notes and references. The World Bank note itself points out that '*Impact Evaluation in Practice*' presents a non-technical overview of how to design and use impact evaluation to build more effective programs to alleviate poverty and improve people's lives. The goal is to further the ability of policymakers and practitioners to use impact evaluations to help make policy decisions based on evidence of what works the most effectively'. True to its objectives the book is geared principally towards development practitioners and policymakers designing prospective impact evaluations with an easily accessible methodology with lot of examples. At the same time, the book is also useful for the academics and researchers for designing evaluation methodologies and evaluating programme impacts. As it has been built on the teaching materials for training in workshops, the book is also useful for training impact evaluators and students who are interested in programme evaluation. Combined with monitoring and control of programmes, impact evaluation is a logical framework that clearly sets out the causal pathways by which the program works to produce outputs and influence final outcomes to gain a full picture of performance of the programmes.

The book opens with the need for evaluations and the questions concerning evaluations in part I, comprising 2 chapters. In part II, consisting of 7 chapters, the different methods of evaluation are discussed. Part III contains 5 chapters that deal with the implementation of an impact evaluation design. The Health Insurance Subsidy Programme of UK has been used to demonstrate the impact evaluation, with occasional reference to other relevant programmes like Progresa, cash transfer, school attendance, school vouchers, family planning, nutrition, health insurance, labour market, training, subsidies, social assistance, microfinance, HIV/AIDS prevention, and monitoring corruption programmes. The emphasis is on the methodology of obtaining causal effect of the programmes. All the evaluation methods are described with their advantages and disadvantages. Each chapter contains results, uses, working, limitations, notes and references, and occasionally, questions. The estimates of the impact under each evaluation method as applied to the Health Insurance Subsidy Programme are produced that are comparable estimates (like mean or OLS estimates) of the casual effect of the programme on the outcome of interest. The preface itself sets the tone and targets of the book clearly spelling out the approach and novel features of this book's pragmatic approach to impact evaluation.

Chapter 1 presents the case for impact evaluation. It starts with what is impact evaluation and why to evaluate, contrasting the evidence based evaluations with the common practices like efficacy studies, monitoring and process evaluation. Chapter 2 deals with the types of evaluation questions, along with the roadmap to the subsequent treatments. Chapter 3 examines the problem of casual inference in evaluation of programmes. Any impact evaluation should identify the pure impact of the programme – the causal effect – in order for evidence-based policy making. The "the casual impact of a programme on an outcome is the difference between the outcome with the programme and the same outcome without the programme". For the latter part, as observational data is not available, construction of 'counterfactual – 'what the outcome would have been in the absence of the programme' – forms the crux of the impact evaluation techniques. The key

challenge is to identify the valid comparison group that has the same characteristics as the treatment (programme participant) group. The typical counterfeit methods of counterfactual estimates, the before-and-after (programme) comparison and the enrolled-nonenrolled (participant vs nonparticipant), together with their pitfalls are discussed.

Chapter 4 discusses the randomised selection methods as a way to control the risk of biases in counterfeit approaches. Randomised selection methods allow for drawing the comparison group from equally deserving populations by the randomised assignment of the treatment over a large eligible population. This randomised assignment (RA) produces statistically equivalent averages for all the characteristics of the two groups (participant and non-participant), except the outcomes, and this treatment outcome generates a robust estimate of the counterfactual. Merits, methods, validity and variants randomisation along with the 'when', 'how' and 'what' level of randomised assignment and the procedures for estimating impacts are examined. Chapter 5 takes up the regression discontinuity design (RDD) and elaborates the conditions under which it should be applied. This technique is applicable to a programme that has a continuous eligibility condition and there is a clear cutoff score to determine the participation eligibility so that two groups can be identified within the eligible population. The strategy is to exploit the discontinuity around this eligibility cutoff to estimate the counterfactual in the regression.

While the randomised assignment and regression discontinuity methods need some knowledge of the programme design on the part of the evaluator, the difference-in-difference (DID) and the matching methods do not require any prior knowledge of the programme design. Chapter 6 looks into the DID method of impact evaluation. The DID method simply compares the changes in outcomes overtime between the treatment group and the comparison group. That is, in the DID, the counterfactual is the change in outcomes of the comparison group only and the programme impact on the treated group is the difference between the changes in the outcomes between the two groups. Chapter 7 ponders over the matching technique. As the name sounds, the matching method constructs an artificial comparison group by indentifying for every possible treatment unit a nontreatment unit that has the most similar characteristics. Identifying a good match in all respects is a daunting task. Fortunately, the statistical technique – the propensity score matching – solves this 'curse of dimensionality' by computing the probability that a unit in the treatment enrollees and nonenrollees will enroll in the programme based on the observed characteristics. Then the 'closest unit' becomes the comparison group and then the counterfactual and the programme impact are estimated.

Chapter 8 tries to combine all the evaluation techniques with a check list of verification tests for all the methods and a guide to planning for impact evaluation. Examples discussed are the matched difference-in-differences (MDD) and difference-in-differences regression discontinuity design (DDRDD), with imperfect compliance and spillovers. Chapter 9 attempts to spell out the evaluation design for multifaceted programmes – multiple levels of the same treatment and multiple treatments (crossover design) – under randomised assignment.

Chapter 10 outlines the basic issues in operationalising the impact evaluation design. The motive of this part of the book is to identify the appropriate method for impact evaluation. The observation is simple: the rules of the programme operation – targeting, identifying beneficiaries, comparison groups and scale of intervention – should determine the method. An interesting discussion on ethics of evaluation is then followed. As evaluation

is a partnership process, the guidelines for setting up and composition of the evaluation team, partners for evaluation, timing of evaluation, and budgeting and funding for evaluation with worksheet are provided.

Chapter 11 cautions the strategic elements in choosing the right sample for impact evaluation. Discussions revolve around the kind of data, sample size and sampling frame. The sample size should allow for estimating and comparing the average outcomes of the two groups sufficiently. The authors suggest power calculations – the probability of detecting the impact – when using existing data, noting the level at which the benefits are assigned and outcome is measured. Having discussed the relevant evaluation design, the type of data and sample size needed for impact evaluation, Chapter 12 ponders over the steps in the collection of data for impact evaluation. It is suggested that an independent agency that can work closely with the programme implementing agency may be preferred for data collection. Given the objectives of the programme and the outcome expected, it is required that measurable indicators need to be developed and clearly structured in the questionnaire with field testing before actually conducting the field work.

Chapter 13 demonstrates the results of the evaluation outcomes and their dissemination. The product of the evaluation may be baseline report, impact evaluation report or policy briefs. The structure of each of these is discussed in detail. If at all the output of impact evaluation is useful for informed policy decisions, it needs to be widely disseminated. Finally, chapter 14 summarises the study along with conclusions, highlighting the increasing number of impact evaluations around the world.

Methodologically, the book is pragmatic in that it does not recommend any particular evaluation method, rather it allows for a consensus among key stakeholders and identifying an evaluation design that fits the operational context. The section on glossary is a welcome addition to the practitioners of impact evaluation who are not familiar with technical jargon. The novelty of the book lies in its 'approach to applying impact evaluation tools to real-world development work'. Perhaps the real merit of the book is its approach to the empirical design for impact evaluation. Personally, a search for any pitfalls in the book has proved to be a futile exercise.

More and better impact evaluation along the lines proposed in this book will help strengthen the evidence base for development policies and programs implemented throughout the world. If only such methodological evaluations are conducted, the question on the credibility of empirical work – "Hardly anyone takes data analysis seriously. Or perhaps more accurately, hardly anyone takes anyone else's data analysis seriously" – can be allayed. Such scientific evaluations can place policy decisions on sound empirical evidence, and this will lead to allocation of development resources to be spent more effectively and, ultimately, have a greater impact on the well-being of societies. The materials presented, ranging from motivating impact evaluation, to the advantages of different methodologies, to power calculations and costs, is explained very clearly and the coverage is impressive.

Paul Gertler is a very senior academician with a long standing experience in the evaluation of many programmes and the co-authors are also talented and have marked their impression on the methods and approach to impact evaluation. Surely, their experience is reflected in this valuable book. On the whole, this book is excellent and unique.

Throughout the book, the presentation is kept to minimal technical level. Yet the book has enough rigour and motivating force to make it a necessary read for any impact evaluation team, while remaining relevant and educating for researchers. The fact that the

book is available freely for downloads along with its attendants should motivate many to access the book and disseminate to others. The lucid and simplistic discussion of the issues and the methods enthuse the reader to inquire what comes next and takes him step-by-step through a journey of evaluation, answering all the 'unasked' questions, while imparting knowledge. This motivating approach allows for continuous reading of the book to the very last. The book has come out at the right time when researchers, practitioners and policy makers have started questioning the utility of the conventional impact evaluation methods and looking forward towards the broader evidence-based policy making. This book will become a much consulted and used guide and will affect policy making for years to come.

Department of Econometrics
University of Madras, Chennai-600 005

T. Lakshmanasamy
tlsamy@unom.ac.in

DICKSON, Janet R., HUGHES, Barry B. and Mohammod T. IRFAN: **Advancing Global Education – Patterns of Potential Human Progress (Volume 2).**

Advancing Global Education, the second volume in the series: "Patterns of Potential Human Progress", is a thought provoking research work which explores and analyses the prospects of a brighter and better life on our home planet, Earth, through enhanced global educational opportunities. The first volume in the series applied itself to the issue of global poverty reduction. The series, conceptualized by Frederick S. Pardee, explores prospects for human development and improvement of the global human condition. Fredrick S. Pardee has also taken up the special responsibility of providing the impressive array of Forecast Tables, given in 132 pages, at the end of this volume. The volumes in the series "Patterns of Potential Human Progress" are contributions from the Frederick S. Pardee Center for International Futures at the University of Denver's Josef Korbel School of International Studies. Each volume is designed to consider one key aspect of global development.

The present Volume-2 Advancing Global Education (published 2010 by Paradigm Publishers, Boulder, USA) explores the transitions that are taking place in global education patterns. It analyses the various factors that interact with education and the various benefits that accrue from educational advancements both at the individual level and at the broader national and international levels; i.e., the intrinsic value and collective instrumental value of education are discussed. Basing on comprehensive explorative analysis of the global educational scenario, spanning a period of 100 years, beginning with 1960 to 2060, a base case forecast of education as it will be in 2060, given its current transition rate and path, has been developed. For each category, computated forecast values are given for 2010, 2030 and 2060. Sources and notes of initial conditions are provided to facilitate interpretation of the tables. These Forecasts (simulation results) form well-structured contextual descriptions of the possible futures under alternative specifications and policies and, as such, are useful for thinking about and exploring possible futures by policy makers and others concerned with education. It enhances their understanding and enables them to make wise choices, based on the insight gained from the study of these Forecasts. The study of transitions in enrollment patterns at various levels of education will also assist them to explore the possibility of accelerating the ongoing educational process, and to reflect on ways and means to add

quality to education across all levels and all regions, so that the world can look forward to a better global future. Hopefully, like all studies, the aim is to usher in a better, brighter, more peaceful and happy co-existence.

The volume is divided into 9 chapters. The introductory chapter enhances awareness and understanding of where we are now in the global educational context. In 1948, United Nations Universal Declaration of Human Rights first formally proclaimed the concept of free and compulsory Universal Primary Education [UPE] as a basic right of every individual, at least in the elementary and the fundamental stages. Since then, all countries of the world have come a long way in implementing this vision. Yet, due to various differences and constraints like gender, socio-cultural, political, economic, demographical, there still remain serious shortfalls and disparities. The present volume has described the attainments of all regions of the world, across four continents: Africa, the Americas, Asia with Oceania and Europe, covering 183 countries in all. The regional groupings are defined by UNESCO though, taking into account some marked differences on various measures, some adjustments have been made in groupings and sub-groupings. The complexity of educational analysis is explored briefly. Besides primary, other levels of education i.e. secondary lower and upper, and tertiary are also important.

Tools that enhance understanding of patterns in education participation and expansion are needed to help policy makers in their planning for the future. *International Futures,* IF, is a computer software tool or modeling system. The unique strength of IF is that it facilitates exploration of possible global futures through the creation and analysis of alternative scenarios: it includes extensive database going back to 1960, and has dynamic forecasting capabilities taking into account variables like economic, demographic (ethnic and other groupings), socio-political, environmental pressures etc., that interact with education. Forecasting by IF has some limitations, which are also pointed out. The Forecast Tables titled 'Multination Regional Analysis' included at the end of the volume provide base case forecasts of measures of poverty, health, education, infrastructure, and governance across the 183 countries. Education variables (enrollment rates, gender parity ratio, literacy and education attainments) are also included.

Relevant features and some key characteristics of various models, like educational, economic, population, etc., and some features of models developed by others are also briefly summarized in this volume. The volume is enriched with figures and tables, throughout. The main points made in each discussion and explanation, summarized and highlighted alongside the main text to facilitate comprehension, are valuable aids to memory and quick review. As ready reference, notes are provided in boxes at the end of each chapter. Lists of Boxes, Figures, Tables, Abbreviations, Maps of continents and sub-regions, Glossary, Bibliography and Index are given. The systematic structure of the volume makes it a highly efficient source of a vast collection of data and statistics, which can be easily accessed by the reader.

The second chapter, 'Understanding the Education Transition and its Context' identifies and clarifies the many conceptual and analytic dimensions that have to be taken into account, in thinking and planning long-term dynamics of global education transitions. Subsequent chapters elaborate on demographic changes (advances in health raising life expectancy, lower fertility rate; sociopolitical forces); urbanization (changes in poverty rate and per capita income); the rationale for education and its consequences (economic growth and expansion of human capabilities); education participation and attainments across all

levels(student flow patterns, enrollment rate, survival rate, completion rate, transition rate to next levels and across various categories like age, gender, groups, ethnic, minorities, etc, regions, countries, details of different levels, Primary, Secondary, Tertiary and the extent to which education is compulsory, at least nominally, and attainment across the world. All these are discussed and variations pointed out. The waxing and waning effects of various forces, including financial, budgeting (public education funding and others) are elaborated. The sources of data and its scarcity are also noted. The volume also presents educational modeling and forecasting approaches and studies published by others such as McMahon, UNICEF, Bruns, Mingat and Rakotomalala, Clemens and several others for deepening the policy-makers' understanding.

As an alternative to a universal, fixed, single level quantitative goal, the authors have chosen to strive towards a normative global education scenario that advances quantity and quality in a realistic manner across multiple levels of education, keeping feasibility in view: i.e., fundamental factors like parental support, basic supporting systems such as transportation, school fees, teachers' salaries, classroom sizes, employment prospects etc. The authors feel that quality in education is a complex issue which requires attention on the one hand, to such details like well-prepared teachers, curriculum, delivery, intake/transition and survival rates, and on the other hand, from their wider and extensive geographical perspective, quality requires focusing on higher and wider issues such as resources, aggregate expenditure per student etc.

As 'quality in education' is difficult to define, measure or forecast, specific targets for the normative scenario are not specified, but they are already accounted for in the forecasts in relation to the key variable - survival rates (surviving in education), and progress to next levels. In today's knowledge-based economy, upper secondary level and tertiary education are important. The present volume has extended its search for patterns and targets that are sustainable on an integrated basis, across all education levels. Aiming towards universal primary enrollment without building a significant secondary and tertiary system is inefficient in the long run. Participation of developing countries, developed countries, low-income countries, middle-income countries, in International Learning Assessment Tests shows that there are substantial differences, which necessitate further attention. Exploring them helps in identifying some of the markers of *quality in education* around the world: like parental education especially mothers', higher/lower income-goups, spending level per student, teacher quality, and other infrastructures, which affect student survival rates.

International Futures (Ifs) has made full use of its potential to explore the normative scenario relative to the base case. The seventh chapter explores the accelerated education futuresand its implications, including budgetary constraints. In the eighth chapter, the authors conclude that cost-benefit analysis suggests that the incremental investment of the normative scenario would pay for itself in terms of higher GDP, quite easily, before 2060, but it would take about 20 to 30 years more for some societies to reach the break-even point. Economic and demographic changes affect and reshape culture. The volume also notes that western mass education is changing traditions and cultures throughout the world. Their overall conclusion is that: societies should actively pursue accelerated education advances, via aggressive but historically reasonable and sustainable rates of enrollment rate growth. The last chapter (9) summarizes the volume and reasserts that levels of education attainments correlate strongly with important variables in the human development process, indicating causality links. New issues and horizons are emerging.

This well developed, probing and illuminating research work has proved that education, undoubtedly, confers all-round benefits to human development, shapes world understanding, affects values and transforms human attitudes and behaviour. But the Research Work also admits that education advances can be disrupted, not only locally but also globally, by pestilence, famine, disease, wars, corruption, internal conflicts, state failures and the like. Apocalyptic events and risks over which mankind has no control, and which human beings cannot even pretend to foresee, can lead to retrogression. Transgression leads to retrogression.

The explicit description of broader human development outcomes of education transitions, in the volume, confirm the imperative need for education, *right* education for all. The means and measures for safeguarding the global future are the prerogatives of Education. In its true sense, Education should be able to counteract disruptive forces. Individual welfare is inextricably bound with, and dependent on, the collective good, peace and prosperity of the society (nowadays global) of which each is a member. This requires explicating universal moral, ethical and spiritual values and making them an integral and compulsory part of not only primary/basic education but also of all levels of Education. Education must succeed in educing (Educe *Latin* - to draw out) the divinity latent in human beings, so that every individual realises each one is but a part of the vast scheme of God's creation, the Universe. Each person is duty-bound to contribute to the common good. Each should play his/her role with humility and dedication in tune with the Divine. The Great Teachers of mankind taught this True Education, *Help ever, hurt never.* 'Seek ye the Kingdom of God and all else will be added unto thee.'

The seventh chapter explores the accelerated education futures and its implications, including budgetary constraints: whether the increased fund requirements of the least developed countries (LDCs) is to be met by the domestic budget or external assistance. IFs has made full use of its potential to explore the normative scenario relative to the base case. Levels of education attainments correlate strongly with important variables in the human development process, indicating causality links. Undoubtedly, education shapes understanding of the world, affects values and transforms human attitudes and behaviour. Education fundamentally shapes culture and vice versa, western mass education throughout the world is changing traditions and cultures. Economic and demographic changes affect and reshape culture. Democracy and government effectiveness are also related to education, the relationship is bidirectional, i.e., educated individuals provide more effective governance (with control of corruption) and effective governance provides more, and hopefully better, education and health care. Advances in education reduce State failures and internal conflicts which cause intense sufferings and regression. The concluding chapter explains that the steady rise of educated youth mixing in the adult population will appreciably bring down the number of those who have not completed primary education, for example to about 5% in the sub-Saharan Africa by 2060, and will also close the gender gap.

This well developed, probing and illuminating research work has proved that education undoubtedly confers benefits to human development. The volume concludes with the observation that new issues and horizons are emerging Globalization: higher education is becoming internationalized in many ways thus developing intercultural competencies and international networks. Information and communication technology: is also making its impact on education, and transforming societies in many fundamental ways.

Explicit description of broader human development outcomes associated with education transitions have enhanced the readers' understanding of the importance of education for global progress. This volume has excellently succeeded in achieving its aim. However, as mentioned in the last chapter, educational advances can be disrupted by famine, disease, wars (corruption, internal conflicts, state failures, etc.), not only locally but also globally. The work should have explicated means and measures for safeguarding the future. Education in its true sense must be able to counteract disruptive forces. This requires explicating universal moral, ethical and spiritual values and making them an integral and compulsory part of education at all levels. Education can be said to fulfill its real aim only when it succeeds in drawing out/educing (*educe* latin - to draw out) the divinity latent in human beings. The great Teachers of mankind have all worked for this True Education, "Seek ye the Kingdom of God and all else will be added unto thee." Its time humanity understood its common, universal guidance and put them into practices. "The Fatherhood of God and brotherhood of mankind", for all are parts of The One and Only One, hurting another is hurting one's own self. All have come from and will go back to the One Source. While in this world let us all work for the common good of all.

Sri Sathya Sai Higher Secondary School & Mirpuri College of Music, Prasanthi Nilayam, A.P. 515134

Arti Srivastava
hvsssmultimedia@gmail.com

MARTIN, Robert E.*: **The College Cost Disease: Higher Cost and Lower Quality.*** Cheltenham: Edward Elgar, 2011, hardcover, pp.198, price: £ 65.00; ISBN: 978-1-84980-616-9

Higher education is associated with several diseases. The diploma disease is well known. Another important disease is the cost disease. The symptoms of the disease are clear: high cost and poor quality. Costs of higher education are rising rapidly in most countries including in the US, as the wages of the teaching and non-teaching staff – an important item in the university budgets — are on rise. So, higher education institutions have to necessarily charge high levels of student fees. But steep increase in student fees may be highly regressive, reducing the access of the lower and middle income students to higher education. But the counter argument is that economic levels of living of the people have risen and people's willingness as well as ability to pay are rising. Besides, there are also available student loan programmes to help the students in financing the increasing costs of higher education. More over, it is argued that increase in costs will result in increase in internal efficiency, as the students will be much more serious and diligent in their studies. These are some of the standard arguments.

In the framework of economics of education, Robert Martin, in the book under review, looks at the problem seriously and critically examines some of the important aspects of rising costs of higher education. Education sector, by its very nature, suffers form an ailment of 'cost disease.' According to the famous William Baumol's theory of "cost disease", rise in unit costs in certain sectors like 'performance arts' is not associated with increase in productivity, unlike in manufacturing and other similar sectors. In these sectors, rise in costs is often associated with decline in quality. According to him, some sectors of the economy, like manufacturing, experience rising productivity, which leads to higher wages. But in other sectors, like education, even when productivity does not necessarily rise, higher wages are to be paid, and to attract students, costs are to be incurred on expensive

infrastructure including buildings, libraries and laboratories. To improve quality, pupil-teacher ratios have to be reduced, unlike labour-capital ratios in manufacturing sectors that normally fall. Such an increase in costs in sectors when productivity does not necessarily increase, but even declines, is referred by Baumol as "cost disease." Perhaps the underlying assumption of all this is that wage moderation is not possible in education even in private institutions; and that the demand in sectors, like education, is price-inelastic and quality-insensitive. In the book under review, Robert Martin analyses this 'cost disease' in US higher education. Drawing from Baumol, the author also argues that the productivity in higher education declines even when productivity in the rest of the economy rises. Is there a contradiction? If staff productivity in higher education declines, this will result in poor quality of graduates; but at the same time, productivity in other sectors where these graduates are employed will increase! This paradox needs to be examined.

Certain other features of higher education also explain the link between rising costs and declining quality in higher education, which Martin refers to as anomalies. Since students (the consumers) are not certain about the quality of education (the product) they receive (higher education is one of the most complex types of 'experience goods'), they rely on fee (the price) as an indicator of quality. In general, students, parents and the society at large associate higher fees with higher quality, which Martin describes s 'Chivas Regal Anomaly." So, institutions tend to increase their costs of education; or increase simply the fee, even when costs have not proportionately increased, to claim higher quality of their institutions. Thirdly, the higher the revenues of an institution, the higher could be the costs, whether it is a public or a private institution, which is known as H R Bowen's anomaly of 'revenue theory of cost.' In addition, Martin refers to two other aspects: (a) the non-applicability of business models in education, which leads to political acceptance of higher spending and improving the image, without worrying about costs: after all academic reputation is highly valued; and (b) the 'missing market for senior teachers.' Martin argues that higher education institutions spend a lot on high quality researchers, while the demand is actually for senior and quality teachers and not researchers. One can, however, state that if people have proper information, costs and prices will not be taken as indictors of quality and the whole bubble will pop, costs will come down and reasonable tuition will return. In a sense, the asymmetry of information in higher education is the basic problem even in a competitive market system like the US. In four major chapters, Martin analyses these aspects in great detail. The basic argument Martin makes is: quality of higher education in US colleges is on decline, and paradoxically the costs are rising; and the student fees are spiraling. With an analysis of a variety of indicators, such as graduation rates, retention rates, grade inflation and student study time, Martin shows how quality is on a secular decline. With perceptive analysis, Martin shows that attempts to control costs of higher education are indeed controversial and can produce serious damaging effects on the reputation of the institutions. Further, the Gresham's law will prevail: the poor quality institutions will flourish and good quality institutions perish!

The College Cost Disease is indeed a useful reading much though not only for the students of Economics of Education, but also for others interested in quality and also that the costs of higher education would immensely benefit from.

NUEPA, New Delhi-110016

Jandhyala B G Tilak
E-mail: jtilak@nuepa.org

COMPARATIVE EDUCATION SOCIETY OF INDIA (CESI)

(A constituent of the World Congress of Comparative Education Societies)

2012 Annual International Conference (October 10-12, 2012)

Comparative Education Society of India (CESI) invites you to participate in its ***Annual International Conference 2012.*** The theme of the Conference is ***Education for a Changing World***". An attempt will be made to discuss and debate education for a changing world from a comparative perspective. The Conference is expected to bring educationists, social scientists, policy makers and practitioners together to deliberate various aspects of education and the dynamics of education policy, its making and processes in the context of a changing world. **The *2012 Annual International Conference*** will be held on **October 10-12, 2012** at **the University of Jammu**, Jammu (Jammu & Kashmir), India.

The sub-themes of the conference could be as follows:

1. Historical perspectives on knowledge and educational systems
2. Global, national and local education policies and practices
3. International trends and shifts in educational systems
4. Quality, excellence and university rankings
5. International collaborations and transforming agendas of education
6. Work, occupations and educational transformations
7. Technology, labour and education
8. Social movements and politics of change in education
9. Community participation and civil society organizations in education
10. Education of marginal groups
11. Education of children in difficult conditions and conflict areas
12. Education in metropolis, towns and rural spaces
13. Literacy and adult education
14. Education and migration (internal and international)
15. Education in multicultural societies
16. Educational governance
17. Markets and private sector in education
18. Gender concerns in education
19. Teachers and teacher education in the changing educational landscape
20. Curriculum and pedagogy
21. Education and human development
22. Education and development in Jammu and Kashmir

Papers are invited on any of these themes. The list of sub-themes is only suggestive. Abstracts of individual paper presentation proposals should be about 500 to 1000 words. Proposals for organising panels are also invited. The abstracts must give a sense of the uniqueness of the topic and the theoretical or empirical or analytical research grounding of the themes chosen for presentation. Participants are requested to contribute original and well researched papers for the conference. Peer review process will be followed in accepting papers for presentation. Send your abstracts and panel proposals to ***cesindia2012@gmail.com. Please note that the last date for sending the abstracts is July 31, 2012.***

With a view to develop the field of Comparative Education in India, CESI is organizing a pre-conference workshop on ***'Re-imagining Comparative Education'*** for young researchers/ faculty/ doctoral students on October 9, 2012 at University of Jammu. For more details, see the conference web site or write to Dr. Manish Jain, Ambedkar University, Delhi, at ***compeduworkshop2012@gmail.com.***

CESI Executive Committee

President:	Prof Jandhyala B. G. Tilak, NUEPA	**Members:**	Prof Poonam Batra, CIE, Delhi Univ
Vice President:	Prof Geetha B. Nambissan, JNU		Prof Mohammad Miyan, MANUU
General Secretary:	Dr S. Srinivasa Rao, JNU		Prof R. N. Mukhopadhyay, Catcutta Univ.
Joint Secretaries:	Dr Renu Nanda, Univ. of Jammu		Dr Amman Madan, Azim Premji Univ.
	Dr Nagaraju Gundemeda, Univ.of Hyd		Dr Saumen Chattopadhyay, JNU
	Dr. Bijoy K. Panda, NUEPA		Dr Arshad Alam, Jamia Millia Islamia
			Dr. Manish Jain, Ambedkar University
			Prof Khatija Begum, MANUU

For complete details:
Visit the Conference web site ***(http://www.jammuuniversity.in/upload/conference/pic256.pdf)*** *or write to* ***Dr. Renu Nanda, Conference Organizing Secretary,*** *at:* ***cesindia2012@gmail.com.***

© NUEPA

Journal of
Educational Planning and Administration

Regarding subscriptions, advertisement, circulation, missing issues, etc., please contact

Deputy Publication Officer
National University of Educational Planning and Administration
17 B Sri Aurobindo Marg, New Delhi 110016
Tel: 26861635(Direct) or EPABX: 26962120 Extn. 316 and 313
E-mail: publications@nuepa.org

Regarding exchange of the Journal and missing issues, please contact

Librarian
National University of Educational Planning and Administration
17 B Sri Aurobindo Marg, New Delhi 110016
Tel: 2686 2507 or 26962120 Extn. 111
E-mail: deepakmakol@nuepa.org

Only editorial matters be addressed to the Editor, JEPA

Tel: 26861320 or 26962120
E-mail: jepa@nuepa.org

For more details please log on to our website *www.nuepa.org*

© NIEPA

Subscription Form for the

Journal of Educational Planning and Administration

Please enroll me for the subscription of the
JOURNAL OF EDUCATIONAL PLANNING AND ADMINISTRATION

Name and Address
(in Capital Letters) ____

____

____

______________________PIN________________

Subscription for the calendar year ____________. Annual Subscription for the **Quarterly** journal commences with January and ends with October every year.

[Please tick mark (✓) the appropriate one]

- ☐ ₹ 150/- Subscription for individuals in India
- ☐ ₹ 350/- Subscription for Institutions in India
- ☐ US$ 60 Subscription for individuals (By Air Mail) outside India
- ☐ US$ 85 Subscription for Institutions (By Air Mail) outside India

NUEPA offers 20% discount on subscription for three years and above. Please make the payment by Bank Draft in favour of **National University of Educational Planning and Administration** payable at **New Delhi**.

Details of the Enclosed Bank Draft:

Bank Draft No. .... Dated..................... Drawn on ....

Date____________________ Signature ______________________

- -

Please mail this subscription order form along with the Bank Draft to:

The Deputy Publication Officer
National University of Educational Planning and Administration
17-B, Sri Aurobindo Marg, New Delhi-110016 (INDIA)

Tel: 91-11-26861635, 26962120 Fax: 91-11-26853041
E-mail: publications@nuepa.org

© NIEPA