

Quality of Secondary Education in India

Charu Jain · Narayan Prasad

Quality of Secondary Education in India

Concepts, Indicators, and Measurement

 Springer

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*Quality is never an accident;
It is always the result of high intention,
Sincere effort, intelligent direction and
skillful execution;
It represents the wise choice of many
alternatives.*

—William A. Foster

This book is dedicated to our families.

Foreword

Improvement in the quality of education is becoming increasingly important in the contemporary world. In the Indian context, both the 11th and 12th Five-Year Plans have accorded high priority to greater accessibility, equal opportunities, and improved quality of education to all segments of the society. In this direction, the centrally sponsored scheme *Rashtriya Madhyamik Shiksha Abhiyan (RMSA*, lit. National Secondary Education Programme) was launched in March 2009 with the objective of making secondary education of good quality available, accessible, and affordable to all young persons in the 14–15 year age group. The scheme envisages enhancing enrolment in Classes IX–X (senior secondary) by providing a secondary school within a reasonable distance of every habitation to enable universal access to secondary education by 2017 and universal retention by 2020; improving the quality of education through making all schools conform to prescribed norms; and removing gender, socio-economic, and disability barriers. Though vast progress has been made during the past few years, there still remain serious concerns that need to be addressed.

The available data reveal that both gross and net enrolment ratios are low at 78.5% and 48.5% at secondary level and 54.2% and 32.7% at higher secondary level of education in 2014–15. Although, transition from elementary to secondary has improved, transition from secondary to higher secondary level of education is quite low at 67.7% in 2013–14, which is also evident in the low pass percentage at the secondary level. Despite significant accomplishments, gender and regional disparities continue to persist. The enrolment of girls as a percentage of total enrolments in secondary education was 47.3% in 2014–15. Out-of-school children and dropout rates have reduced substantially over the years, but not evenly across all social groups. Dropout rates and unsatisfactory student learning levels continue to cause concern. Lower numbers of female teachers, quality of teaching–learning processes, and learning outcomes are the new challenges that the schooling system is facing, given the sharp increase in enrolments over a short period of time.

In view of the above, the present book entitled *Quality of Secondary Education in India: Concept, Indicators, and Measurement*, is a serious attempt in examining issues related to the overall progress and quality of secondary education in India

covering both quantitative and qualitative aspects, making comparative assessments at other levels of school education, and providing key recommendations for policy makers. At the macro level, it covers national- and state-level progress, disparities, and challenges; whereas at the micro level, it covers first-hand qualitative information from schools, teachers, and students through primary surveys conducted in Delhi. The analysis presented in the book may not cover all possible issues related to secondary education in a comprehensive manner, but it does offer penetrating insights into quality-related issues in secondary education.

The book is divided into five parts. Each part is unique in terms of its focus and coverage, viz. theoretical concepts and existing literature; research methodology and measurement of variables; national- and state-level issues of growth; disparities in secondary education in India; determinants of quality education emerging from the empirical findings using primary survey results from schools, teachers, and students; and finally, policy discussions and recommendations. This will be essential reading for academics, students, and researchers interested in educational studies, research, and planning, and a useful reference source for others wishing to know about this highly topical subject.

I appreciate the effort put in by the authors towards conducting research in this area and bringing out this volume and hope that this volume is able to provide useful and feasible solutions for improving the quality of secondary education in India. I wish them success in this and all such forthcoming academic endeavors!

April 2017

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Preface

Being one of the strongest links between elementary and higher education, secondary education is emerging as one of the important educational sectors in India. In order to reap its maximum benefits, it is of utmost importance for policy makers to now address the dual challenge of quantity expansion and quality enhancement. This book not only provides useful insights into quality related concepts of secondary education in India but also answers questions on why there is need to improve quality of education, how one can measure quality of education and the ways to improve quality. This book reviews the present status of quality of secondary education in schools at the national and state level in India, thereby identifying inequalities that exist at various levels and evaluating the factors that determine student outcomes and efficient teaching abilities in India. It also seeks to understand the extent to which school resources and infrastructural facilities, teachers and teaching methods, family characteristics, self-motivational factors, and exposure to mass media affect the performance of students. Along with this, perceptions of students and teachers on various issues related to enhancement of quality education and efficient learning environment in schools are also presented in this book.

For this, the analysis in this volume is conceptually designed at three levels: (i) national level performance and linkages; (ii) state level progress, disparities and linkages; and (iii) school level: measurement and improvement of learning outcomes of students and efficient teaching practices. While, first two approaches simply provide answers to research questions on why measuring the quality of secondary education is important in India; the third approach identifies various determinants for measuring the quality of secondary education. Both quantitative and qualitative methods have been used to probe the various issues related to the quality of secondary education at the micro and macro levels.

The book is divided into five parts. While the first part introduces the topic and gives a theoretical and conceptual framework, the second part describes the study area and research design used in the study. The third part presents the growth and linkages of secondary education at national and state levels. The key highlights of this section are that it provides answers to questions like: Why is it important to

shift focus on secondary education? Why is there a need to improve quality? Given the fact that quality of education needs improvement, the fourth part gives empirical evidence on how quality of education can be measured, the factors that determine student outcomes, and the quality of teaching practices in schools. The last part concludes and gives policy implications and recommendations.

This book provides a methodological framework to scholars interested in measuring and evaluating the quality of secondary education in various settings. We hope that educational institutions, research scholars, students, policy makers, and many others find these findings useful and beneficial for strengthening and delivering the quality education in South Asia, Southeast Asia, and other developing regions. A major part of this study is based on the doctoral thesis, approved and awarded by School of Social Sciences, Indira Gandhi National Open University, to the first author.

The conduct of this research and writing of this book was an enriching experience for us. We would like to take this opportunity to thank all the people whose help has been valuable in writing this book. Firstly, we are grateful to the National Council for Applied Economic Research (NCAER) and IGNOU for not only providing us with an expert platform and infrastructural support, but also for facilitating us with various research material and references required for conducting this study. We express our deep gratitude to the faculty members and other staff members of both of these institutions for their guidance and support throughout. We are thankful to the National Book Trust (NBT), India and the National Action Plan for Readership Development of the Trust for granting us permission to use the National Youth Readership Survey (NYRS) primary data. We are also grateful to the board of the *Journal of Educational Planning and Administration*, published by the National University of Educational Planning and Administration, New Delhi for granting us the permission to republish some regression results and literature from the paper entitled 'Evidences of Linkage between Secondary Education and Socio-Economic Outcomes in India' published in Jan 2016 issue. We acknowledge the support of both these institutions.

Since this research work has undertaken primary survey from senior secondary schools in Delhi, we would like to give our special thanks to all those principals, teachers, students, and other key stakeholders in surveyed schools in Delhi who volunteered and participated in this study. Without their support this analysis would not have been completed. We are grateful to Dr. Vichar Das, Mr. Mehta, Mr. Vijay Thakur and Mr. Deepak for providing us with necessary input during the translation and printing of questionnaires, data collection and data entry. We want to acknowledge all our friends and colleagues for their great support during the study.

Last, but not the least, we are profoundly grateful to our family members, who have always been a true source of inspiration for us, for keeping up our morale, for being continuing source of help and encouragement, for their love, patience and

understanding throughout the period. Their creative ideas and enduring support have helped a lot in completing this book. Finally, we would like to mention that the views expressed in this book are our own and do not necessarily reflect the opinion of the affiliated organizations.

New Delhi, India

Charu Jain
Narayan Prasad

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three review articles to the reputed National and International journals. Ten students have been awarded Ph.D. and 9 M.Phil. degrees under his supervision. His areas of research interest are: Human Well-Being, Human Development, Spiritual Economics and Philosophical Foundation of Economics. He teaches research methodological course to M.Phil. and Ph.D. students.

Glossary

Absence rate is defined as number of days students go to school as percentage of total number of school days in a month.

An average year of schooling is the years of formal schooling received, on average, by students (total, male, female).

Completion rate is the total number of students (total, male, female) regardless of age in the last grade of secondary school, minus the number of repeaters (total, male, female) in that grade, divided by the (total, male, female) number of children of official graduation age. Note that when repetition rates are high, this indicator is not always a reliable measure of primary completion.

Drop-out rate (%), **secondary** is the percentage of a cohort of pupils (total, male, female) enrolled in the VIII grade, and is not expected to reach the first grade of lower secondary education. It is calculated as 100% minus the survival rate to the last grade of middle level education (VIII).

Education levels are broadly classified into four categories at school level of education; primary (upto Grade V), middle (Grade VI–VIII), lower secondary (Grade IX–X) and senior secondary (Grade XI–XII). At some places in this study, we have used the term ‘elementary education’ to indicate school education upto grade VIII and term ‘secondary education’ to indicate grade IX–XII.

GDP (constant at FC) is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources.

Gender parity index (GPI), **gross enrollment ratio in secondary education** is the ratio of the female-to-male values of the gross enrollment ratio in secondary education. A GPI of 1 indicates parity between sexes.

Girls’ enrollment share (%), **secondary** is the number of girls enrolled in secondary school, expressed as a percentage of the total number of students in secondary school.

Gross enrollment rate (%), secondary is the number of pupils (total, male, female) enrolled in secondary, regardless of age, expressed as a percentage of the population (total, male, female) in the theoretical age group for secondary education.

HIV prevalence (% of adults) is the percentage of people ages 15–49 who are infected with HIV.

Indicators are data points that are predictive. This is contrasted with evidence of accomplishment, which demonstrates success.

Inputs are the essential elements that comprise the development and delivery of a course or school, such as textbooks, instructional materials, teaching, and technology. Quality assurance based on inputs often takes the form of standards or qualifications that apply to the inputs.

Labor force with secondary education (% of total) is the proportion of the (total, male, female) labor force that has a secondary education, as a percentage of the (total, male, female) labor force.

Labor force, female (% of total) is the percentage of females that are active in the labor force.

Labor force, total comprises people who meet the ILO definition of the economically active population. It includes both the employed and the unemployed. The labor force also includes the armed forces, the unemployed and first-time job-seekers, but excludes homemakers and other unpaid caregivers and workers in the informal sector.

Literacy rate, adult (% of people 15+) is the percentage of people (total, male, female) ages 15 and older who can, with understanding, both read and write a short, simple statement about their everyday life out of the whole population (total, male, female) ages 15 and older.

Literacy rate, youth (% aged 15–24) is the percentage of people ages 15–24 who can, with understanding, both read and write a short, simple statement about their everyday life.

Mortality rate, under 5 (per 1,000) is the probability that a newborn baby will die before reaching age five, if subject to current age-specific mortality rates. The probability is expressed as a rate per 1,000.

Outcomes measure the knowledge, skills, and abilities that students have attained as a result of their involvement in a particular set of educational experiences. They measure the effectiveness of the learning process, are more longitudinal in nature than outputs, and measure more than just academic achievement at a point in time. Ideally they are based on a common assessment, not one that is specific to the school or course.

Out-of-school children, secondary are the number of children in the official secondary-age range who are not enrolled in secondary education.

Passing rates are proportion of students appeared among the enrolled and proportion of successful students in the students appeared for the Board Examinations.

Percentage of repeaters, secondary (%) is the number of pupils (total, male, female) enrolled in the same grade of secondary education as in the previous year, expressed as a percentage of the total enrollment in that grade.

Population growth (annual %) is the exponential change of the population for the period indicated.

Presence rate is the percentage share of classes attended by students each day out of total number of periods allotted in a day.

Promotion rate is transfer/promotion of students between various secondary levels of education. Since the data on number of repeaters was not available year-wise hence ratios of enrolments at various levels were considered.

Public current education expenditure (% of current education expenditure), secondary is defined as the share of public current expenditure on education that is devoted to secondary education.

Public education expenditure as % of GDP is the current and capital expenditures on education by local, regional and national governments, including municipalities (household contributions are excluded), expressed as a percentage of the gross domestic product.

Pupil-teacher ratio, secondary is the average number of pupils per teacher in secondary education in a given school-year, based on headcounts for both pupils and teachers.

Sampling fraction is the ratio of total number of schools in each stratum divided by required number of schools.

School life expectancy (years) is the number of years a child (total, male, female) of school entrance age is expected to spend at school, or university, including years spent on repetition.

Secondary education, teachers (% trained) is the number of teachers (total, male, female) who have received the minimum organized teacher-training (pre-service or in service) required for teaching at the secondary level of education in the given country, expressed as a percentage of the total number of teachers (total, male, female) at the secondary level of education.

Student enrollment is defined as the number of students (total, female) enrolled in a particular level of education (primary, secondary, tertiary). For secondary education, student enrolment includes enrolment in general programs as well as enrolment in technical and vocational programs.

Transition rate refers to percent of students joining from one level to the next level of education. So far as computation of transition rates is concerned, first the repeaters are taken out from the enrolments in first grade of secondary education (Grade IX) which is divided by the terminal grade of previous cycle (Class VIII) that is middle level.

Abbreviations

ABE	Analysis of Budgeted Expenditure
AEP	Adolescence Education Programme
AISES	All India School Education Survey
AISSCE	All India Senior School Certificate Examination
AIU	Association of Indian Universities
ASER	Annual Status of Education Report
BCG	Boston Consulting Group
BE	Budget Estimates
B.Ed	Bachelor of Education
BPL	Below Poverty Line
CABE	Central Advisory Board of Education
CBSE	Central Board of Secondary Education
CIET	Central Institute of Education Technologies
CISCE	Council for Indian School Certificate Examination
CSO	Central Statistical Organisation
CTSA	Central Tibetan Schools Administration
DCB	Delhi Cantonment Board
DPT	Diphtheria, Pertussis and Tetanus
DT	Diphtheria and Tetanus
EBBs	Educationally Backward Blocks
EDI	Educational Development Index
EFA	Education For All
EPI	Education Performance Index
FICCI	Federation of Indian Chambers of Commerce and Industry
GBSSS	Government Boys Senior Secondary Schools
GDP	Gross Domestic Product
GEI	Gender Inequality Index
GER	Gross Enrolment Ratio
GGSSS	Government Girls Senior Secondary Schools
GPI	Gender Parity Index

GSDP	Gross State Domestic Product
HDI	Human Development Index
HPAE	High Performing Asian Economies
HRD	Human Resource Development
IAMR	Institute of Applied Manpower
IBO	International Baccalaureate Organisation
ICT	Information and Communication Technology
IEDC	Inclusive Education for Disabled Children
IEDSS	Inclusive Education for Disabled at Secondary Stage
IHDS	Indian Human Development Survey
IIM	Indian Institutes of Management
IIT	Indian Institutes of Technology
IMR	Infant Mortality Rates
JNV	Jawahar Navodaya Vidyalaya (Jawahar Navodaya Schools)
KGBV	Kasturba Gandhi Balika Vidyalayas (Kasturba Gandhi Girl's School)
KMO	Kaiser-Meyer-Olkin Measure of Sampling Adequacy
KVS	Kendriya Vidyalaya Sangathan (Central School Organisation)
MCD	Municipal Corporation of Delhi
MDM	Mid-Day Meal scheme
MHFW	Ministry of Health and Family Welfare
MMR	Maternal Mortality Rates
MPCE	Monthly per Capita Consumption Expenditure
NACO	National Aids Control Organisation
NAEP	National Assessment of Educational Progress
NAS	National Accounts Statistics
NBT	National Book Trust
NCAER	National Council for Applied Economic Research
NCERT	National Council of Educational Research and Training
NCT	National Capital Territory of Delhi
NCTE	National Council of Teacher Education
NDMC	New Delhi Municipal Council
NFHS	National Family Health Survey
NIH	National Institute of Health
NIHFW	National Institute of Health and Family Welfare
NIOS	National Institute of Open Schooling
NIT	National Institutes of Technology
NMMSS	National Merit-cum Means Scholarship Scheme
NSHIE	National Survey of Household Income and Expenditure
NSSO	National Sample Survey Organisation
NUEPA	National University of Educational Planning and Administration
NVS	Navodaya Vidyalaya Samiti (Navodaya School Committee)
NYRS	National Youth Readership Survey
OECD	Organization for Economic Co-operation and Development
PCA	Principal Component Analysis

PGT	Post Graduate Teachers
PPP	Public Private Partnership
PTM	Parents Teacher Meeting
PTR	Pupil Teacher Ratio
QEDC	Quality Education in Developing Countries
RBI	Reserve Bank of India
RCH	Reproductive and Child Healthcare
RIE	Regional Institute of Education
RMSA	Rashtriya Madhyamik Shiksha Abhiyan (National Secondary Education Programme)
ROC	Receiver Operating Characteristic Curve
RTE	Right to Education
SBV	Sarvodaya Bal Vidyalaya (Sarvodaya Boy's School)
SCV	Sarvodaya Co-ed Vidyalaya (Sarvodaya Co-educational School)
SDP	State Domestic Product
SIET	State Institute of Education Technologies
SKV	Sarvodaya Kanya Vidyalaya (Sarvodaya Girl's School)
SQM	Strategic Quality management
SRS	Sample Registration System
SSA	Sarva Shiksha Abhiyan (Education for All Scheme)
SUCCESS	Universal Access and Quality at Secondary Education Scheme
SV	Sarvodaya Vidyalaya (Sarvodaya Schools)
TFR	Total Fertility Rates
TGT	Trained Graduate Teacher
TLM	Teaching Learning Material
TQM	Total Quality Management
UGC	University Grants Commission
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Educational Fund

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