



Skilling India for Inclusive Growth – A Wake up Call

R.S.P. SINGH

School of Vocational Education and Training (IGNOU)
India

Y.P. CHAWLA

Jt. Elect. Regulatory Commission and National Jt. Secy.
IIFE, India

Abstract:

The growing younger population in India, unless modeled in a productive asset, is likely to get involved in the springs that Tunisia, Egypt, Arab World and recently Bangladesh faced. The GDP growth targets in India for improving the country's stature in the world lacks inclusive growth, especially the Rural and Tribal Population, which is dependent on the agriculture, based on the erratic weather. The agricultural GDP contribution and GDP/ Capita compares lower than Industrial and Service Sector, which further worsens the Agricultural Work force comparatively.

Skilled Work force has been contributing to the development of India's economy by earning a sizable foreign exchange for India through remittances. The importance of skilling India increases, as the young skilled workforce in most of the European countries and USA is depleting fast and these countries look forward to the other world for sustaining its Industry and Infrastructure. India needs to seize the opportunity of demographic dividend. Skilling Rural and Tribal India has its own challenges and thus a holistic approach for Skilling India need to be developed, integrating the regional development priorities and the needs rather than "one prescription fit for all" approach. It has to consider the schooling system (including Right to Education), vocational education, changes in the School

education curricula to meet the Vocational Institute's input, the college inputs to make the youth ready to meet set targets. The present paper calls for meeting the skilling needs with appropriate technology supporting the system.

Key words: Skills, Inclusive growth, Technology needs, Vocational Education, Skilled Workforce.

Introduction : A Wake up Call in Skilling

Different shades of Skilling issue:

- a The skills shortage doomsday scenario has been known for some time.
- b The world stands on the brink of a global employability crisis—an over-supply of available workers within undersupply of qualified talent. Faced with the most acute talent shortage since 2007—before the start of the world's first global recession—one in three employers worldwide confirm that they cannot find the talent they need, to fill key vacancies in their organizations. This is a frustrating and complex conundrum for job seekers in the short-term as unemployment remains high, and employers in the long-term, as forces like the demographic landscape, dictate the availability of talent.
- c “In the midst of the greatest surplus of talent in modern times, many employers nevertheless say that they cannot find people to hire,” writes Cappelli¹ in these Times.
- d “For every anecdote about employers who cannot find good candidates, though, there are a dozen stories of highly qualified candidates struggling even to be seen by employers.”
- e “Expanding access to education for young Indians, having a desire to grow will be crucial to the country. The failure to do so will turn the demographic dividend that India enjoys in terms of its young population, into a nightmare of demographic disaster,” said, Dr. T

¹ Peter Cappelli-*Bridging the skills gap: Vocational training takes centerstage*

Ramasami², Secretary, Department of Science and Technology (DST).

- f 'Expand education access to Gen Y' India, to make true, the prediction of India emerging as one of the important economic powers of the world by 2030. India needs to provide the right ambience for learning and skilling.
- g Skill shortage presents hurdle to India's growth: World Bank.

Indian Growth has been marked by negative growth in Public Sector jobs and a marginally slow job growth in Private sector.

Although the unemployment rate in India remains high, frustrating many skilled people remaining underemployed due to the sluggish economy as at present, and still, the employers are struggling to get the right people for the jobs. The Skilled workforce does not meet the Industry's requirements. There was no proportionate growth in jobs even at boom.

While the extent of this so-called skill gaps in the Industry needs, what the Institutes are delivering is a matter for debate. But there's no disputing the fact that a range of Skill development organizations, educational institutions, business groups and the like across the Country are calling all hands on the deck to handle this issue and to help India's economy move forward. Thus, the Vocational training has taken center stage as businesses struggle to find a competent skilled force.

Large companies in Core Sector like L&T complain about the shortage of skilled workers like welders, electricians and carpenters etc. Many construction and industrial projects have to go slow, not due to shortages of steel or cement, but for shortages of skilled and semi-skilled workers. This shortage will only get worse when GDP growth jump hops and Skill development Institutes don't adapt to emerging skilling needs. Consequences of skill shortages are widening the gap between income of skilled and unskilled people, due to scarcity premium.

²Dr T Ramaswami delivering lecture on 31st annual convocation of Mangalore University, *reports Times of India*

Continuity with a Change

In India, we have been considering Medicine, Engineer, Law, Accounting, or Computer degrees as the conventionally respectable, but not the vocational programs or degrees. It needs a change but with a continuity also to grow in conventional fields so far.

“How do I push the one-year and two-year program of a welder, machinist, and tool and die maker person?” questions aparent. “The youngster may see it as exciting and when they go home and say, ‘This is what I want to do.’ But then the parents say, ‘Oh, no, it’s a dirty job that doesn’t make a lot of money.’ Or they’ll say, ‘Nobody needs that job’ or ‘Manufacturing is dead.’ That’s what students (youth) are hearing in turn. So, I don’t have an answer for pushing those types of skilled jobs — and I’ve tried a ton of stuff.” Todd Finkelmeier³

Sullivan⁴ believes a good portion of the problem of finding qualified workers in the skilled trades and manufacturing can be linked to the commonly held view that if you’re going to be a successful in life, you need to go to college and earn at least a four-year degree.

Understanding the importance, the Universities Grants Commission has approved Bachelor of Vocational Education (B.Voc.Ed.) degree. Colleges affiliated to any university, which comes under the UGC, can now offer a B.Voc.Ed., just like a BSc, B.Com or a B.A. Moreover, a B.Voc.Ed. student can choose to move in and out of the degree course, in case it does not suit him or her. Along with B.Voc.Ed. there is the emergence of a system of community colleges which will come under either the UGC or the All India Council for Technical Education (AICTE). **Vocational education has to become as respectable as a degree** one day and the degree is set to start from academic year 2013-14 with 200 Institutions set to start the same.

As we take stock of the Skilled force situation, it is clear that Government is carefully moving from stimulus of reducing Financial deficits (Budget 2013 confirms). Budget provision of Skilling India, a provision of Rs. 1,000 Crs. has been made for

³Todd Finkelmeier-“Bridging the skills gap: Vocational training takes center stage” reported in the Cap Times

⁴Sullivan “ Man power research survey 2012”

year 2013-14 with objective of expansion of Productivity and job opportunities and boost sustainable jobs.

These skill programs address the age group of 15-21 to raise the education and skills levels of students by delivering a curriculum which gives them life and social skills, setting stretching and challenging targets and better prepares them for a fast-changing world. The group of 15-21 youngsters if “Not in Education, Employment or Training (NEET)” can lead to a social unrest with this age group having altered aspiration. This age group needs an urgent attention.

GDP Pangs

The Global Investment climate is cooler and so is in India. The business sentiment is slow. This makes the Business pushing in Investment in Skilling on to the back burner. The estimate of GDP forecasts by various agencies are not building in confidence in the near future, but surely makes GDP grow healthy in a few years ahead. That makes it more challenging for the Skilling players in developing skill business to keep continuing the efforts.

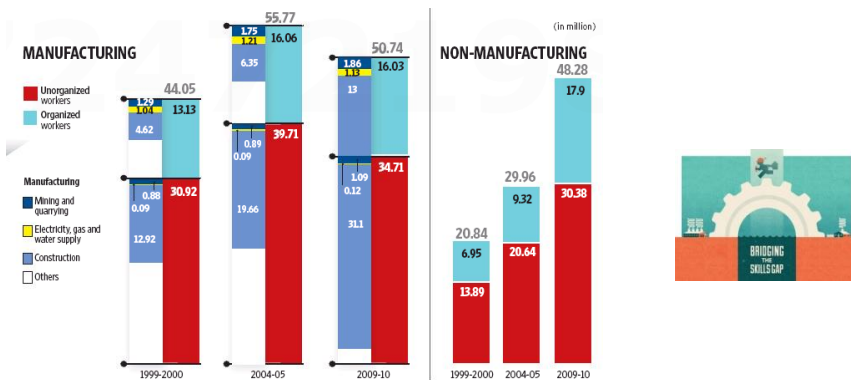


What bothers is that the skilled jobs creation has not been aligned to the booming economy that India enjoyed in recent years as compared to many other countries. India: Source of Optimism has been quoted in a survey⁵ ranks India as highly optimistic of its growth, however Infrastructure is an issue. India ranks at Sl 5 ahead of Brazil at 6, China at 19 and Japan at 41 in the survey. But various agencies have different ranking, however Indian growth recovery ranks high in most of surveys. The India's GDP growth graph released by OECD also shows India ranking high.

⁵Grant Throaten survey of businesses survey on Global business.

As of now, the economy is showing signs of recovery and still it is hard to find many in business who are bullish about India's growth prospects, economy-watchers have been consistently surprised by the dingdong of official figures which are swinging both ways. If the output figures are accurate, this puzzling divergence would probably be resolved by future job losses and escalated Skilling Programs. In this paper on “Skilling”, the economy aspect has been briefly touched, as the sluggish economy is putting brakes on the Skilling programs. According to the Regus business confidence survey⁶, India Inc. biz confidence slips due to global factors and Indian businesses' confidence index improved by 2 points (from 143 to 141) since April 2012.⁷ **Lack of growth, Investment Slow down and Skill development are feeding into each other with causation flowing either way.**

Keeping the Manufacturing going



Manufacturing sector affected by the slowdown in India is different because it additionally is accompanied by price pressures and external imbalances, a sign of structural problems. This has caused the Engine trouble (the Engine of Growth) in India. The manufacturing sector's skills gap is reaching threat levels. While manufacturers recognize the importance of recruiting and developing talent, many continue to depend on outdated, informal approaches for finding talent,

⁶Regus “Confidence Survey 5 of 2012”

⁷Chittaranjan Tembhekar “Indian business confidence stalls in continued global business volatility” quoting Regus Report

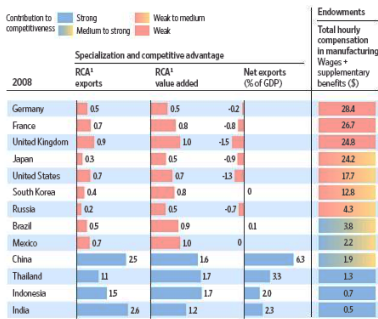
developing skills, and improving performance. Continuing to employ the same approaches may not effectively close the Skill gap. This is more due to sluggish economy. Informal employees in formal sectors also need to be addressed for skilling for improved productivity.

While there is no single solution, there are some demonstrated methods manufacturing industry can take to mitigate the growing skills gap, which similarly can also benefit to other industries. Knowledge management solutions do address the brain drain as older workers retire, taking with them valuable knowledge and experience. Capturing critical information and sharing it with newer and younger work force helps reduce the training time, can improve collaboration and communication, and even speed time to market by leveraging previously-developed programs.

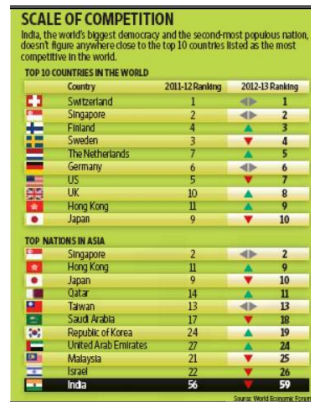
I. Labor Intensive Job profiles

India as a country has an advantage when it comes to absolute number of Workforce, but the working conditions, methodology and thus productivity reflects to a poor side. The figures give a comparative view. The current education system is still non-responsive to filling Skill Gaps and making the workforce highly productive. Skilling programs in unorganized sectors forming 92% of our workforce are generally non-existing. About 7 Mn. people in India are estimated to be school drop outs in 2012 or are illiterates (NEET Category) that need special attention. The Industry analysis estimates 75-80 Mn. jobs creation in next five years with about 75 to 90% of these numbers to be vocationally skilled.

Labour cost determines advantage in labour-intensive manufacturing

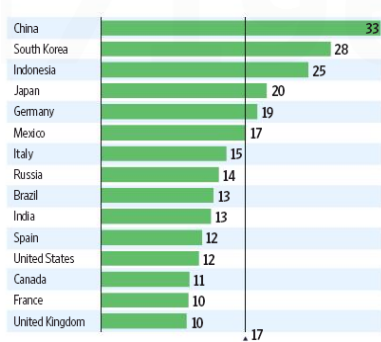


RCA = A country's Revealed Competitive Advantage, a measure of its trading strength



There is huge demand-supply skill gap in India. 90% of the jobs in India are "skill based", entailing the requirement of vocational training. It is estimated that only 5% of the youth in India are vocationally trained. The contribution in GDP by Industry has to increase as per Manufacturing Policy and manufacturing sector to grow.

Manufacturing's share of GDP in the top 15 manufacturing nations ranges from 10-33%
(Manufacturing share of GDP, 2010, in %)



Large developing economies are moving up in global manufacturing

Top 15 manufacturers by share of global nominal manufacturing gross value added

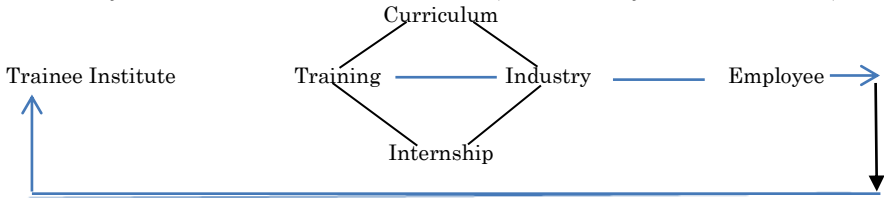
Rank	1980	1990	2000	2010
1	US	US	US	US
2	Germany	Japan	Japan	China
3	Japan	Germany	Germany	Japan
4	United Kingdom	Italy	China	Germany
5	France	United Kingdom	United Kingdom	Italy
6	Italy	France	Italy	Brazil
7	China	China	France	South Korea
8	Brazil	Brazil	South Korea	France
9	Spain	Spain	Canada	United Kingdom
10	Canada	Canada	Mexico	India
11	Mexico	South Korea ¹	Spain	Russia ²
12	Australia	Mexico	Brazil	Mexico
13	Netherlands	Turkey	Taiwan	Indonesia ²
14	Argentina	India	India	Spain
15	India	Taiwan	Turkey	Canada

¹ South Korea ranked 25th (1980) to 20th (2000); Indonesia ranked 22nd (1980) ranked 22nd (1990) based on 1980 Global freight database sample of 75 economies, of which 28 are developed and 47 are developing. Manufacturing data calculated top down from the US Global freight database. View a report to discover why with bottom-up data driven analysis.

II. Industry-Institute Interface – Sectorial Skill Councils

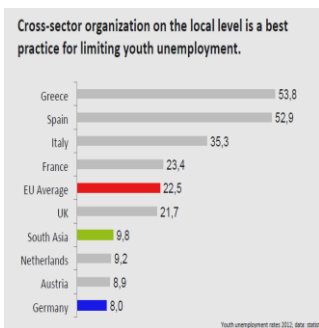
Sector councils are national partnership organizations between Industry and Skilling Institutes that bring together business, labour and educational stakeholders. These Skill councils operate at an arm's length from the Government and are now put under National Skill Development Corpn. in India. The sector councils are developed as a platform for the stakeholders from Industry and the Skilling Institutes, as well Skilling experts to share ideas, concerns and perspectives about human resources and skills requirement issues to match with Industrial Growth of any specific sector, and find solutions that benefit their sector in a collective, collaborative and sustained manner.

Industry- Institute Interface mode: (and finally SSC certified)



As of August 2012- a total of 14 Sector Specific Skill Councils (SSCs) are operative, 7 SSCs are under due diligence and 9 SSCs more are in the pipeline, thus making a total of 30 India representing various sectors to take care of :

- Labour Market Information
- Creating Skill development plans in line with National Targets of Growth in each sector
- Certification & Accreditation- Streamlining and undertaking
- National Occupational Standards (NoS), benchmarking with International Standards.
- Developing Industry based training program profile
- Up-skilling the existing workforce
- Facilitating school to work out transitions via the Career Focus Program
- Providing a forum for collaboration amongst industry stakeholders
- Ensuring the industry remains competitive through HRD
- Gives industry a voice to government in regards to their HRD needs.



Germans have gone a step further is by setting up Cross Industry Sector Skill Councils

SSCs are likely to avoid the situations like “**ITI jeopardizes million jobs by not issuing certificates**”⁸.”

India’s flagship program for training drop-outs with employability skills, Indian Training Institute (ITI) has failed to issue certificates, in some cases for 30-50 years reported by a labour ministry official.

The Target set by the Human Resource Development Ministry is to double the existing Gross Enrolment Ratio (GER) to 30 per cent by 2020, from the present 15 per cent. The move aims to triple enrolments in the tertiary sector from presently around 13 million to 40 million to entail a massive capacity building, both at institutional as well as individual level.

The best way to skill people is to go for community college movement and take education to each and every door step. The community college will provide education at the convenience of students with flexibility of timing, duration and fee structure.

While on the one hand, India Inc. is struggling to maintain a healthy growth rate & profitability, on the other hand, the Sector Skills Councils - charged with workforce development of particular industry sectors - are struggling to fulfill their core functions. Will the doubling of the allocation for National Skill Development Fund help put the skilling agenda back on track? Gyanendra Kumar Kashyap&Rajlakshmi Saikia⁹

To a large extent, industry is the victim as well as the culprit, when it comes to scarcity of skilled workforce. However, there is a palpable trend in India Inc., starting to train its people on a scale large enough to alter the nation's future. In one of the Surveys¹⁰, it is found that 91 percent of the respondents have an in-house facility to train their new hires. Apart from in-house training modules and outsourcing, there are a number of private firms across industry verticals that are also adopting ITIs. This approach helps company’s skill future

⁸www.economictimes.com, January 28, 2013.

⁹Gyanendra Kumar Kashyap&RajlakshmiSaikia “*Skilling Special: Is India on Track?*”

¹⁰SumayaBhattacharya and ShammiPande- “*Making 500 million people employable*”

workforce. For instance, Maruti Suzuki India is in the process of adopting 40 state-run technical schools to create a customized labor pool, needed to fuel its Rs.18,000 crore expansion in Gujarat. The ITIs, mostly in northern India, will not only ensure a steady supply of trained personnel to the auto maker, but also to its dealers and vendors such as Sona Koyo, Amtek Auto and Rico Auto Industries.

Rising Remittances from Skilled Manpower

India continued to top the remittances list in 2012 and inflows into India are expected to increase to \$70 billion this year, according to a World Bank report on global migration and remittances released recently. The World Bank said remittance flows to the developing world are expected to exceed earlier estimates and total \$406 billion—a 6.5% increase from the previous year—and are projected to grow by 7.9% in 2013, 10.1% in 2014, and 10.7% in 2015 to reach \$534 billion in 2015. Remittance which can grow with Skilled India.

Skilling Rural India, Tribal Dreams- A step towards Inclusive growth.

Some of India’s “inclusiveness” indicators are quite dismal: poverty-even the most optimistic estimates-remains high. Talking of Tribal population is farther from Skilling Rural India and it is astonishing to note from a press clip that Over 15 K illiterate Panchayat members in Karnataka¹¹. These members are caretakers of Rural India. India has missed many mile stones with “Inclusive Growth” included.

Poverty rates continue to fall but remain high despite strong growth, “**making growth more inclusive**” is therefore a top government priority and a key objective of 11th and 12th Plans. The introduction of the national rural employment guarantee has helped, but Skilling for productivity is lacking. Inclusive growth needs a Social revolution of the scale of Kalinga Institute of Social Sciences (KISS)¹² who are taking

¹¹<http://www.deccanherald.com/content/300106/over-15k-illiterate-panchayat-members.html>

¹²<http://www.careers360.com/news/8228-hope-diaries-Kalinga-institute-of-social-sciences-free-education-tribal>

care of Odisha tribal from “KG to PG” including various skilling programs. Similarly Chintan in Delhi is skilling the rag pickers. The naxal affected district of Gadchiroli will also have an educational facility for tribal students’ right from kindergarten to PG. Inclusive growth needs an inclusive architecture of the economy and skilling at all levels. For increasing welfare and wellbeing fueled by economic growth the central theme is to be sustainable and inclusive, i.e. incorporate the “People, Planet, Profit-“dimensions. Inclusive growth has been belied as per the Economic Survey 2013, where Poverty reduction of 37.2% in 2004-05 has been achieved to 29.2% in 2009-10. The absolute numbers not falling because of Population increase.

Also, the accumulation of wealth has fostered deep divides within populations both in emerging and established markets. The rich need education just to maintain the life style, but frustrates the poor who, with rare exceptions, lack resources needed to improve their lot. The growth needs to be economically and politically correct.

Trail - Education to Skilling

Dreams deferred, that’s perhaps the best way to describe India’s so far poor education system from where emulates Skilling. More than 13 crore children study in primary school — Class I to V. In the next stage, Class VI to VIII, the number drops dramatically to about 5.5 crore. By Class IX-X, the number halves to 2.8 crore. By Class XI-XII, student strength is down to 1.6 crore. By the time you reach the top of the pyramid and look at universities and colleges, enrolment is down to just about 11% of what it was in primary school. Which means just one in 10 toddlers in kindergarten makes it to college.

Perhaps more important for an emerging ‘superpower’ is the status of technical education: the skilled workforce needed to man the shop floor. Just 20 lakh students go to polytechnics and industrial training institutes after finishing school at Class XIII, X or XII.

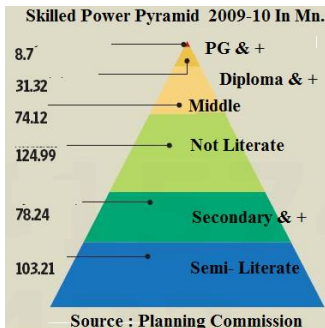
In other words, roughly 80 to 90% of the country’s young are getting left behind in our education system, their dreams deferred to some distant and unclear future. Of these, barely 55 lakh still pursue their dream by enrolling in the distance

education system, which at least offers the satisfaction of a degree or diploma. The Technical Education Budget in 2013 increased to Rs 7298 Crs, up by 9% from 2012.

Economically and socially disadvantaged sections constitute the bulk of those who cannot complete their education. They are the poor, dalits, tribal, women and rural people. These are some overlapping categories, but data is stark on their continued rejection by the education system. For the poor, fees get more and more prohibitive as they move up the educational pyramid. Also, poor families can't afford to spare a son or daughter to 'waste' time in classrooms — they have to start earning for the family.

In rural areas, more than 51% of the poorest section of population is illiterate (Nicobar exception with 77.5% tribal literacy) and only a minuscule 0.4% study beyond higher secondary. Among the richest, about 23% are illiterate but nearly 9% have completed post-school studies.

In urban areas, 42% of the poorest are still illiterate; the proportion of illiterates among the richest is only 7%. Just 1.5% of the poorest manage to complete higher studies while the figure is 42% for the richest.



Women tend to get left behind, although the gender gap has rapidly reduced over the years. Past discrimination against women is visible in literacy rates: according to Census 2011, among those aged above 7, there are 17.6 crore illiterate women compared to about 9.7 crore men. In the 5-29 age group, 57% males were enrolled in an educational institution as opposed to 50% females, as per an NSSO study of 2007-08.

By Class VIII, the dropout rate for the country is 43%: two out of five kids who started school quit by the time they reach Class VIII. If that is a disastrous number, it's even worse

for dalits (53%) and tribals (63%). In some large states such as Uttar Pradesh, Bihar, and Rajasthan, more than 50% of dalits children do not study beyond Class V. The focus should be on making the top heavier as in Fig.11.

Instructional methodology for Skill development

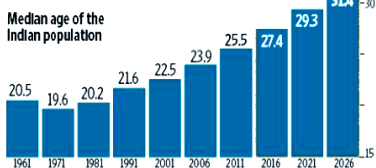
The Technology levels are moving from 1G to 4 G, Pentium 1 to Pentium 5, but the Instructional methodologies are slow in catching up. Investments in higher Skilling methodologies are a must. In order to catch deprived and vulnerable group of society teaching and learning process should facilitate seamless movement of learning community from one system to other as well as across institutions without compromising in Quality.

III. India aging faster than expected- A Demographic Shift

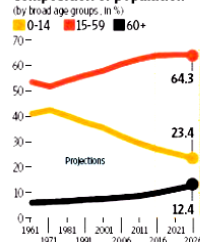
India’s population is ageing sooner than expected, and by the middle of the next decade, the country’s demography will see a significant shift, according to a report by a United Nations (UN) body.

DEMOGRAPHIC SHIFT

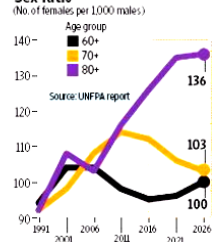
The increase in India’s ageing population is expected to have significant implications for policymakers as well as businesses in the country.



Composition of population



Sex ratio



The shift, when it happens, will have significant implications for policymakers as well as businesses in a country that touts its ability to reap a so-called demographic dividend of a young population as one of its competitive strengths, which otherwise in moving to be a nightmarish disaster.

The report by the United Nations Population Fund (UNFPA) fig 12 & 13 has projected a rapid increase in India’s median age to 31 years in 2026 (it was 20 in the 1980s). It has

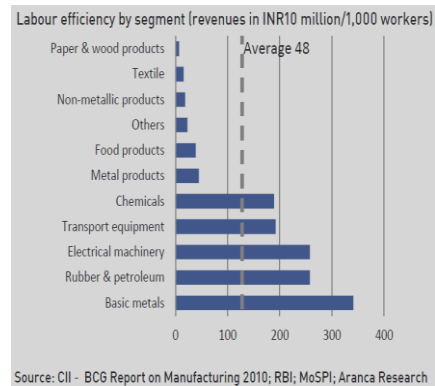
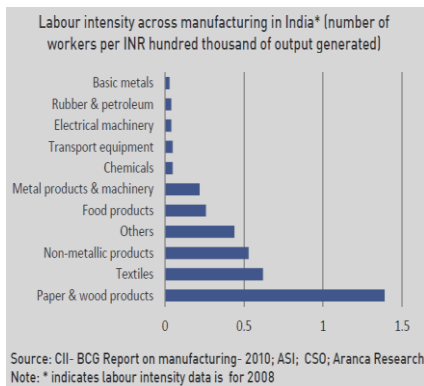
also projected a 326% increase in the number of people aged between 60 and 80 by the year 2050 (from the year 2000); a 700% increase in the number of people older than 80; and a 55% increase in the country’s overall population. It didn’t provide absolute numbers for the estimates.

Subrata Mukherjee¹³, a former professor in the department of political science at the University of Delhi, expects the shift in demography to have social, political and economic implications.

The UNFPA report attributes the demographic transition to declining fertility in the reproductive age group and increased longevity. UN projections suggest that India is “gradually but surely transitioning away from a young age structure with the elderly population soon outnumbering children in India”.

Skilling focus area

	Agriculture	Manufacturing	Other Industry incl. Construction	Services	Source: RBI(GDP data); Economic Survey (workforce data)
GDP %	14.4	15.8	12.1	57.7	
Workforce %	57.6	12.0	10.5	19.9	



Recommendations

1. Focusing on Skilling keeping in view the relative future importance and relative effectiveness reflected by each sector and Skilling in each sector.

¹³Subrata Mukherjee reported in Live mint 20th Nov 2012

2. The Work force composition for skilling has to be restructured so that high productivity and GDP growth areas are emphasized keeping in views the continuity also.
3. India's low skilled workforce ultimately needs jobs in large scale manufacturing. The informal workforce in formal sector need to graduate to a formal workforce.
4. Various issues that are key to harnessing our demographic dividend need a holistic policy responses that combine the tactical (definitions, jurisdictions, etc.) with the philosophical (mandate, objectives and vision).
5. The Social Schemes need an integration to job skilling to avoid harmful social unrest later. Realign the social schemes like MNREGA along with Skilling for better productive long term results.
6. Correction to the situation of non-inclusiveness of Poor People in Rich lands (Mineral Wealth).
7. Alignment to the National level , of the demand side of the inclusive growth as per 2009-10 data presented in the economic survey indicating all India “poverty headcount” amongst Rural is 33.8% and Urban is 20.9% and 29.8% on total basis. UP, Bihar, Assam & Odisha fare poorly. In contrast, Bihar tops in Capita Income Growth (March 2012) at 11.75 %, TN at 6.72% with all India average at 4.66%. This makes the inclusive growth more distant, needs correction.
8. Short Term / Long Term targets at district, state and national level on skilling India for Inclusive growth need to be fixed and monitored.
9. 21st Century skilling technologies for 21st Century Skill needs for millennium youth, with 21st Century mind set and vision for 21st Century growth rate.

Summary

We really need to be mindful that we're skilling people not just for the jobs of today, but for the jobs of tomorrow. The Skilling Institutes' role is to help create those jobs of the future, not just fill the jobs that are available today. In the run up to the Budget 2013, the macroeconomics backdrop is a major concern more than in the past few years, when the India's external

sector is vulnerable, the slowing of Investments faced with tapering consumption has pushed the employment and the importance of skilling to very low levels. These dual issues need an urgent correction. The stakeholders have understood what Industry needs and Skilling Institute should be ready to deliver.

References

- [1]Chittaranjan Tembhekar *“Indian business confidence stalls in continued global business volatility”* quoting Regus Report
- [2] Gyanendra Kumar Kashyap and Rajlakshmi Saikia *“Skilling Special: Is India on Track? “*
- [3] Peter Cappelli - *Bridging the skills gap: Vocational training takes center stage*
- [4] Dr. T Ramasami delivering 31st annual convocation of Mangalore University, *quoted in the Times of India*
- [5] Sumaya Bhattacharya and Shammi Pande- *“Making 500 million people employable”*
- [6] Todd Finkelmeyer-*“Bridging the skills gap: Vocational training takes center stage”* reported in the Cap Times
- [7]www.economictimes.com, January 28, 2013.

Bibliography

- [1] CII- BCG Report – Aranca Research
- [2] Economic Survey 2013
- [3] RBI – GDP data
- [4] Mint Daily various issues.
- [5] US Bureau Census
- [6]World Bank Report
- [7]World Economic Forum

About The Authors



Dr RSP Singh- an Associate Professor School of Vocation Studies & Training IGNOU–, Has authored papers on various Skill related subjects.Guiding various research projects.

Coordinating diversified skilling and educational Programmes

PG Certificate & Diploma in Security and Fire safety , Coordinating Pan India Programme on National rural Livelihood mission,Ministry of Rural Development, Govt of India; B. Ed.VET (Bachelor of Education in Vocational Education and Training)



Y P Chawla; Advisor, Tariff- Jt. Elec. Regulatory Commn, National Jt. Secretary IPE, ypchawla@gmail.com; 98107-08707

BE Tech. & MBA (Fin), PGDPM & PGDMM from Delhi University. Export Mgmt. from Oxford.

Pursuing PhD. in Skill Gaps in Power Sector, Over 4 decades of Experience in diversified sectors covering Energy including Solar & other Renewable Energy, (Ex. BHEL), Water Sector, Tyre Manufacturing, setting up Skill Center, Agriculture, and Infrastructure.

Widely travelled in India & abroad including some Foreign Postings. Because of these postings got opportunities to get a holistic approach of Power Sector. Have written papers on wide range of subjects (available on web)

(The views expressed here are personal and may not represent that of the organizations the Authors represent)