

Prajñā

Vol . XXVII 2017-18 | ISSN NO. 0976-9072

Prajñā

VOL . XXVII 2017-18
ISSN NO. 0976-9072

Annual Journal of
Gauhati University Teachers' Association

Editor
Sanjay Bhattacharjee

Gauhati University Teachers' Association

Editor : Sanjay Bhattacharjee



GAUHATI UNIVERSITY
Guwahati- 781014, Assam, India

Prajñā

Vol . XXVII, 2017-18
ISSN NO. 0976-9072

**Annual Journal of
Gauhati University Teachers' Association**

**Editor
Sanjay Bhattacharjee**



GAUHATI UNIVERSITY
Guwahati- 781014, Assam, India

Vol. XXVII, ISSN No. 0976-9072
Annual Journal of
Gauhati University Teachers' Association (GUTA)
Published in April, 2018

Editorial Board :

Chairperson

DR. ARCHANA SARMAH

Chief Editor

DR. SANJAY BHATTACHARJEE

Editors

Dr. Ratul Mahanta

Dr. Dhrubajyoti Sahariah

Dr. Sunanda Naik

Dr. Ankuran Dutta

Dr. Md. Baharul Ali

Dr. Samir Sarkar

Dr. Dolikajyoti Sarmah

Dr. Shabeena Yasmin Saikia

Dr. Badan Barman

© All rights reserved ; published by Gauhati University
Teachers' Association, Gauhati University. The views expressed
in the articles are those of the authors and not of the Association
and editorial board.

Printed at

Gauhati University Press

সম্পাদকীয়

একাডেমিক জাৰ্নেল বা শৈক্ষিক পত্ৰিকা আৰু সাধাৰণ পত্ৰিকাৰ মাজত মূল পাৰ্থক্য হ'ল যে সাধাৰণ পত্ৰিকাত যিকোনো মৌলিক তথা অন্যান্য বসবচনা প্ৰকাশিত হয় কিন্তু শৈক্ষিক পত্ৰিকাত অকল গৱেষণা সংক্ৰান্ত লিখাই প্ৰকাশ পাব পাৰে। তদুপৰি ইয়াত থকা গৱেষণামূলক প্ৰবন্ধৰ ক্ষেত্ৰত এটা নিৰ্দিষ্ট নিয়ম অনুসৰণ কৰা হয়। আৰু যদি এই শৈক্ষিক পত্ৰিকা কোনো বিশেষ শিক্ষা প্ৰতিষ্ঠান যেনে বিশ্ববিদ্যালয় বা মহাবিদ্যালয়ৰ পৰা প্ৰকাশিত হয় তেনেহলে তাৰ মাজেদি সেই বিশেষ প্ৰতিষ্ঠানটোৰ পঠন-পাঠনৰ ধৰণ ফুটি উঠে। এখন বিশ্ববিদ্যালয়ত প্ৰতিনিয়ত জ্ঞান ও বুদ্ধিৰ চৰ্চা কৰা হয় আৰু সেই চৰ্চাৰ হাল-হকিকৎ পৰিস্ফুট হয় বিশ্ববিদ্যালয়ৰ অধ্যাপক-গৱেষকৰ গৱেষণাৰ মাধ্যমেৰে। তেওঁলোকৰ গৱেষণালব্ধ জ্ঞানৰ পৰিসৰক ধৰি ৰাখে বিশ্ববিদ্যালয়ৰ পৰা প্ৰকাশ পোৱা বিভিন্ন গৱেষণা পত্ৰিকাই। বিজ্ঞানৰ পৰা সাহিত্য, দৰ্শনৰ পৰা ইতিহাস প্ৰায় প্ৰতিটো বিষয়ত নিজ নিজ ক্ষেত্ৰত পণ্ডিতসকলে তেওঁলোকৰ লেখনিৰে নিজস্ব মতামত দাঙি ধৰে এনেকুৱা পত্ৰিকাত। বিদ্বংজনৰ প্ৰদৰ্শিত মতামত ছত্ৰ-ছত্ৰী আৰু ভৱিষ্যত গৱেষকসকলৰ মেধাৰ বিকাশত গুৰুত্বপূৰ্ণ ভূমিকা গ্ৰহণ কৰে। গতিকে ভৱিষ্যত প্ৰজন্মৰ মেধা বিকাশৰ বাবে এনেকুৱা পত্ৰিকাৰ ভূমিকা অত্যন্ত গঠনমূলক ও প্ৰসংসনীয়। গুৱাহাটী বিশ্ববিদ্যালয় শিক্ষক সংস্থাৰ দ্বাৰা প্ৰকাশিত শৈক্ষিক পত্ৰিকা 'প্ৰজ্ঞা'ৰ সম্পৰ্কেও আমি একে কথা ক'ব পাৰো।

এই বছৰৰ 'প্ৰজ্ঞা'ত ইংৰাজী আৰু অসমীয়া দুটা ভাষাত লিখা গৱেষণা পত্ৰৰ সংকলন কৰা গৈছে। লেখকগোষ্ঠীৰ প্ৰতিজন লেখক নিজৰ নিজৰ ক্ষেত্ৰত প্ৰতিষ্ঠিত আৰু বিশেষজ্ঞ। যিসকল লেখকে সম্পাদনা সমিতিৰ আহ্বানত্ৰমে তেওঁলোকৰ মূল্যবান প্ৰবন্ধ প্ৰদান কৰিছে তেওঁলোকক আমি কৃতজ্ঞতা জনালো। আমি কৃতজ্ঞতা যাচিছে সস্থাৰ মাননীয় সভাপতি আৰু সম্পাদকক তেওঁলোকে 'প্ৰজ্ঞা'ৰ এই সংখ্যাটি প্ৰকাশ কৰাৰ ক্ষেত্ৰত যথেষ্ট পৰামৰ্শ আৰু সহযোগিতা আগবঢ়াইছে, যাৰ বাবে তেওঁলোক কৃতজ্ঞতাৰ পাত্ৰ।

আমাৰ সন্মানীয় উপাচার্য ড° মৃদুল হাজৰিকা, ৰেক্টৰ ড° হৰিপ্ৰসাদ শৰ্মা আৰু পঞ্জীয়ক ড° সুৰেশ কুমাৰ নাথৰ প্ৰতি কৃতজ্ঞ যে তেওঁলোকে নেপথ্যৰ পৰা সদায় আমাৰ উৎসাহ বৃদ্ধি কৰি আহিছে। সৰ্বশেষত আমি বিশ্ববিদ্যালয়ৰ প্ৰেছ আৰু প্ৰেছৰ কৰ্ণধাৰ ড° বিভাস চৌধুৰীক আমাৰ কৃতজ্ঞতা জনালো যিজনে ছপাৰ দায়িত্ব বহন কৰি আমাক অশেষ সহায় কৰিছে। আমাৰ সহকৰ্মী অধ্যাপকবৃন্দক অসীম কৃতজ্ঞতা জ্ঞাপক কৰিলো, তেওঁলোকৰ সহায় নহলে এই গ্ৰন্থ প্ৰকাশ সম্ভৱ নহ'লহেতেন।

ধন্যবাদসহ —

সঞ্জয় ভট্টাচাৰ্য
সম্পাদক, প্ৰজ্ঞা

Contents

Proverty in India : An Interstate perspective Dr. Archana Sarmah	1
Journey ahead towards a robust community radio sector in india: perspectives on challenges and elucidations Dr. Ankuran Dutta, Dr. Anamika Ray	14
Implementation of Right to free and compulsory elementary education in India: Issues and challenges Nurzamal Hoque, Ratul Mahanta	29
Traditional Alcoholic Beverages and their nutritional values Prof. Dibakar Chandra Deka, Ms. Pranami Handique & Ms Anamika Kalita Deka	37
Why is General Relativity difficult?: A viewpoint on the most influential theory in Natural Science Dr. Sanjeev Kalita	46
Public Library: A Powerful Tool for Social Change Tilak Hazarika	54
Mirza Ghalib, a pioneer of Indo-Persian Poetry Dr Md Baharul Ali	62
Nuclear Hazards vs Nuclear Energy Kushal Kalita	68
Mental Health Promotion of Students : Role of Counseling and the Legal Policies in India Dr. Moyuri Sarma	75
Inception of Arabic Novel and its subsequent development till Najib Mahfouz: A study Arshad Laskar	85
Usage of Arabic words in Assamese Language: A Historical Survey Dr. Abul Kalam Choudhury	91
Arabic Islamic Studies in Bengal Mizazur Rahman Talukdar	100
বিসুপ্রসাদ বাভাৰ গীতৰ ভাষা-শিল্প ড° দীপামণি হালৈ মহন্ত	113

POVERTY IN INDIA : AN INTERSTATE PERSPECTIVE

Archana Sharma

Abstract

Since the inception of the Five Year Plans, Indian planners have tried to achieve 'growth with social justice'. It was expected that growth will automatically lead to removal of poverty and reduction in inequalities. This objective, however, has not been fulfilled and whether poverty and inequality in India have abated after the reforms is also a debatable issue. Based on an analysis of official data published by the Planning Commission, it is found that poverty has continuously declined throughout the study period but regional disparities as reflected by poverty ratios persisted. The positive association between low growth rate and high incidence of poverty is also perceptible thereby establishing the fact that growth is a prerequisite for the removal of poverty. A tendency for convergence in growth rates among the states could also be gleaned from the analysis. This could lead to deceleration of regional inequalities in the long run.

Key Words: Poverty Line, CAGR, NSDP, Inequality, Convergence

Professor, Economics
Gauhati University

Poverty alleviation has always been a priority for Indian planners. The constitutional guarantee to ensure equality to all mandated the policy makers to work for ensuring equality among all sections of the population. But if poverty persists, inequalities cannot be avoided. In the first and the second five year plans, emphasis was put on rapid growth with the expectation that the benefits of growth will automatically reach the poor. Very soon it was discovered that the ‘trickle down’ approach did not work and a large chunk of the population was left behind while a few enjoyed the benefits of development. The deprivation or inequalities could be perceived in different aspects. (Panagariya : 2009) viz., inequalities in the distribution of national income or inter-personal inequality, inter-state/regional inequality, rural-urban inequality, inequality between the organized sector and the unorganized sector, inequality in wages of skilled and unskilled workers. Inter-sectoral inequality and gender inequality can be added to the list although there may be many other forms of inequality which get perpetuated with growth unless conscious efforts are not taken. Gender inequality can again be of different types viz., Mortality inequality, Natality inequality, Basic facility inequality, Special opportunity inequality, Professional inequality, Ownership inequality and Household inequality (Sen:2001) Each of these inequalities can have a regional perspective.

The relation between growth and inequality has been found to have an inverted U shape which is known as the Kuznets Curve (Thirlwall:2011). Given the growth experience of India since the eighties, it could be expected that the curve showing the relation between growth and inequalities might have crossed the hump and started the decelerating stage. The present paper examines the trend in the inter-state differences in poverty from 1973-74 to 2012-13 to assess whether regional inequalities have reduced over time. Since growth is an essential prerequisite for the amelioration of poverty, convergence in growth across regions could contribute to the reduction of regional inequalities. An attempt has therefore been made also to find out if convergence in growth across regions has taken place in the post reforms era. . The exercise is largely based on official data obtained from the website of the Planning Commission. Although the methodology followed in official poverty estimates is a debatable issue, Patnaik : 2010, deaton and Dreze : 2010), the present paper makes use of the same, as the main objective of the exercise is to have a glimpse of the trend in regional inequalities rather than estimating the magnitude of poverty.

In India, poverty estimates are made regularly by the Planning Commission. The common practice is to count the number of the people below a ‘poverty line’, known as the head count ratio. The Poverty Line recommended

by the Working Group constituted by the Planning Commission in 1962, at 1960 prices, was Rs. 20 per capita per month for rural areas and Rs. 25 per capita per month for urban areas. This was the minimum consumption expenditure required to maintain the balanced diet or the minimum nutritional norm. The amount for a household with five members or four adult consumption units was estimated at Rs.100 per month for rural areas and Rs.125 per month for urban areas. The minimum nutritional norm was, in turn, based on the recommendations of the Nutrition Advisory Group of the Indian Council of Medical Research (GoI, Planning Commission:2014) This minimum consumption expenditure excluded the expenditure on education and health, which were expected to be provided by the State. In the sixties and seventies, the economists used either the above stated norm (Minhas:1974) or slightly modified norms (Ojha:1970, Dandekar and Rath:1971, Bardhan:1970, Sengupta and Joshi:1979) in their poverty studies. They based their estimates on the data on consumer expenditure provided by the NSSO. Vaidyanathan (1971), however used Rs. 20 per capita per month at 1960-61 prices as the poverty line and based the estimates on both the NSSO data and the official figures and Minhas (1974) made use of official estimates.

To modify the strategy for measuring poverty followed in the 60's and the 70's, a task force under the Chairmanship of Dr. Y.K. Alagh was constituted in July 1977, which submitted its report in 1979 and suggested the consumer expenditure of Rs. 49.09 for rural areas and Rs. 56.64 for urban areas at 1973-74 prices as the poverty line. The norms included both food and non-food expenditure. This poverty line was updated by the Planning Commission and a national poverty line was constructed to estimate poverty for all states and union territories with a uniform norm. (GoI, Planning Commission June, :2014)

In 1993, an Expert group on the Estimation of proportion and number of Poor was constituted by the Planning Commission, with Lakdawala as the Chairperson. The Expert Group recommended the retention of the poverty line defined by the Task Force (Alagh) and disaggregated the national poverty line to state specific poverty lines using inter-state price differentials. However, state specific poverty lines could be estimated only for eighteen states as state specific prices data were not available for the other states. As a result, for those states, the poverty line of one of these eighteen states was used. Physical proximity and similarity in economic profile were used as the criteria for selecting the states for which the state specific poverty line of one of these eighteen states were to be used. Thus, the poverty ratio for Assam was used for the other states in the North Eastern region viz., Arunachal Pradesh, Manipur, Meghalaya, Nagaland, Tripura and Sikkim. The poverty ratio for Tamil Nadu was used for Puducherry and Andaman and Nicobar Islands, Poverty ratio for

Goa for Daman and Diu , that of Kerala for Lakshadweep and the urban poverty ratio of Punjab for both rural and urban Chandigarh.

In December 2005, another Expert Group was constituted by the Planning Commission with Suresh D. Tendulkar as the Chairperson. Tendulkar Committee, instead of constructing a fresh poverty line, adopted the poverty line for 2004-05 based on Expert Group (Lakdawala) with some modification. They suggested the use of different recall periods for different commodities.

The Planning Commission used the Expert Group(Lakdawala) methodology to estimate poverty ratios upto January 2011 and in January 2011 released poverty estimates for 1993-94 and 2004-05 using the expert Group (Tendulkar) methodology. Using the same methodology, poverty estimates for 2009-10 and 2011-12 were also released afterwards. The Expert Group (Rangarajan) was then assigned the task of reviewing the methodology of measurement of poverty and they submitted their report in June 2014.

The two sets of data are not directly comparable as those are estimated by using two different methods. However, the poverty ratios thus estimated (Table 1) show that the percentage of people below poverty line continuously declined in India from 1973-74 to 2011-12, but no uniform trend could be perceived in the rate of decline (Table 2). There is no discernible difference in the rate of improvement in the pre-reform and the immediate post reform period. Only between 2009-10 and 2011 -12, the rate of improvement was speedier.

Rural – urban gap (Table 3) was visible, with the rural areas always having a higher percentage of people below poverty line. The rural-urban gap has increased in the post reforms period although the rate of decrease in the percentage of people below poverty line is also higher in rural areas. This does not necessarily mean that the rural masses are freed from the clutches of poverty more than their urban counterparts. The quantities mentioned are only in percentages, in numbers, in 2011-12, there were 216.7 million rural poor against 53.1 urban poor [as per Expert Group (Tendulkar Methodology)]. To find out the extent of inter-state differences in the poverty ratio, we have ranked the States and also grouped them in descending order of poverty for both rural and the urban areas and for the total count for different years and on the basis of the estimates made by the two Expert Groups (Lakdawala and Tendulkar). At the beginning of the period under study, i.e., 1973, as per the ranking for rural-urban combined data, Orissa had the highest percentage of people below poverty line followed by West Bengal and Bihar and Himachal Pradesh had the lowest percentage of people below poverty line followed by Chandigarh and Punjab. In case of rural areas, West Bengal qualified to be the poorest

state followed by Odisha and Bihar while Delhi occupied the position of having the lowest percentage of people below poverty line followed by Himachal Pradesh and Chandigarh. Urban poverty was found to be highest in Kerala followed by Lakshadweep and Uttar Pradesh and lowest in Himachal Pradesh, followed by Jammu and Kashmir and Chandigarh (Table 4).

While rural-urban gap is prominent at the national level and majority of the States/UTs have higher incidence of rural poverty, Delhi, Lakshadweep, Andhra Pradesh Gujarat, Haryana, Kerala, Rajasthan and Uttar Pradesh have a higher percentage of urban poverty.

Comparing the data for 1973-74 and 1977-78, it has been observed that poverty ratio increased in all the North-eastern states, Odisha, Maharashtra, Himachal Pradesh and Dadra and Nagar Haveli and the other states improved although in some of them either rural poverty or urban poverty had increased, and in some states, viz., Tamil Nadu and Andaman & Nicobar Islands, the improvement was very marginal. In 1983, compared to 1973-74, all states improved except Bihar. In 1987-88, the poverty ratio in all the States/UTs decreased. This deceleration of poverty ratio in all the states and union Territories continued in the post reforms period, i.e., 1993-94 to 2011-12.

Although the decline in the poverty ratio was experienced by every region, the relative position of the States/ UTs did not have much change. The states having high poverty ratios occupied nearly the same place in every period. (Tables 4 through Table 6). In 1973-74, the poorest ten states included Odisha, West Bengal, Bihar, Madhya Pradesh, Karnataka, Lakshadweep, Uttar Pradesh, Andaman & Nicobar Islands, Tamil Nadu and Kerala. In 1987-88, the poorest group of states included all these states except Karnataka and Lakshadweep, these two places were replaced by Maharashtra and Puducherry, which were in the 11th and the 12th positions in the earlier period. In 1987-88, Karnataka went up to the 11th place and Lakshadweep to the 17th place.

On the other hand, the top ten positions were also occupied nearly by the same states/UTs throughout the period. In 1973-74 the state with the lowest poverty ratio was followed by, Chandigarh, Punjab, Haryana, Jammu and Kashmir, Goa, Rajasthan, Dadra and Nagar Haveli, Gujarat, Andhra Pradesh and Delhi. In 1987-88, the topmost position was occupied by Delhi followed by all the other members in the earlier group, with marginal change in the order, except Rajasthan and Dadra and Nagar Haveli. These two places were occupied by two states from the North east, viz., Mizoram and Manipur while Dadra and Nagar Haveli slipped down to the lowest position and Rajasthan also had a big fall to the 17th position. This shows that in the pre reforms stage

although the relative position of the states largely remained the same, towards the end of the period, some drastic changes could be perceived., Madhya Pradesh, Uttar Pradesh and Karnataka.

In the post reform phase ,the eastern and a few north eastern states dominated the poorest group while the better positions continued to be occupied by the southern and northern states. In 2011-12, the state with highest poverty ratio was Chattisgarh, followed by Jharkhand, Manipur, Arunachal Pradesh, Bihar, Odisha, Assam It can be observed that the a number of states which had the highest poverty ratios in 1973-74 appear in this list as well. Chattisgarh and Jharkhand being parts of Uttar Pradesh and Bihar respectively, their inclusion and their positions in the poverty scale bear particular significance.

The method and the procedure used to estimate poverty in the 60's and the 70's had a number of limitations. The consumption basket used to determine the poverty line, the price deflators used to construct poverty lines for different years or for separate poverty lines for rural and urban areas and the validity of the NSS data on consumer expenditure were questioned by critics.

The state specific poverty lines and the poverty ratios released by the Planning Commission also have been critiqued on many counts (Deaton and Drèze:2002). Using the same poverty ratio for a group of states also reduces the credibility of the estimates. Moreover, the practice of updating the poverty line by using some price deflator does not ensure the affordability of the minimum basic requirements. It is argued that in the process of updating the poverty lines, the very basis of constructing the poverty line has been grossly ignored. Deaton and Drèze (2002) have estimated the poverty ratios for different states by using an Adjusted poverty line. The relative position of the states in the poverty ratio thus estimated is not very different from the relative positions obtained by using the official estimates.

Whether poverty and inequality in India had abated after the reforms is a much debatable question. The analysis given above reflects a mixed picture. Poverty continued its decelerating trend throughout the period under study, but the regional disparities as reflected by the poverty ratios continued. Although growth does not necessarily ensure reduction of poverty, growth is an essential prerequisite for the removal of poverty. Convergence of growth within the country could therefore contribute to the reduction of regional inequalities. The poorer regions should grow faster than the richer ones so that the poorer regions catch up with the upper strata. A necessary condition for convergence is that the per capita income in poorer countries should grow faster than in rich countries. Rearranging the States in ascending order of Compound Annual Growth Rate

(CAGR) for the period 1993-94 to 2001-02 (Table 7), it is seen that Assam, Bihar, Madhya Pradesh and Uttar Pradesh which continued to appear among the states with the highest percentage of people below poverty line also had the lowest CAGR during the period, confirming the nexus between poverty and low growth rate and also that the first phase of reforms did not contribute to reduction of regional inequality. At the same time, however, Punjab was among the states with a lower percentage of people below poverty line and also a lower CAGR than that of West Bengal which was among the poorest group of states in the pre reforms period. The Punjab was a high performing state with high growth rate and low poverty, hence a low poverty ratio could be expected in Punjab in spite of low performance in one or two years, but the low growth rate is a matter of concern. However, this also reflects some degree of convergence in growth rates among the states. If this continues, regional inequality may decelerate in the long run.

Work cited:

Bardhan,P.K.(1970): On the Minimum Level of Living and the Rural Poor in Indian Economic Review, April 1970, Delhi School of Economics, Delhi

Deaton A. and J.Drèze (2002): Poverty and Inequality in India: A Re-Examination in *Economic and Political Weekly* September 7, 2002, Mumbai

_____ (2010) Nutrition, Poverty and Calorie Fundamentalism: Response to Utsa Patnaik in *Economic and Political Weekly* April 3, 2010, Mumbai

Government of India: Planning Commission (2014):Report of the Expert Group to Review the Methodology for Measurement of Poverty, Planning Commission, Government of India, New Delhi

Minhas, B.S.(1974) : Planning and the Poor: S. Chand and Co.New Delhi

Ojha, P.D.(1970): A Configuration on Indian Poverty, Inequalities and Level of Living in Reserve Bank of India Bulletin 1970 reprinted in Fonseca,A.J.(ed.)(1971) Challenge of Poverty in India Vikash ,Delhi

Panagariya, A. (2009) : *India: The Emerging Giant* Indian Edition, Oxford University Press New Delhi

Patnaik, Utsa (2010) Critical Look at Some Propositions on Consumption and Poverty”, in *Economic and Political Weekly* February 6 2010, Mumbai

Rowntree, Sebohm (1901) *Poverty: A Study of Town Life*, Macmillan and Co, London

Sen , Amartya (2001): Many Faces of Gender Inequality in Frontline .Volume 18 - Issue 22, Oct. 27 - Nov. 09, 2001 available at <http://www.frontline.in/static/html/fl1822/18220040.htm>

Sengupta, S. and P.D. Joshi (1979): A Note on Determination on Poverty Line Based on NSS 27th Round Data in Sarvekshana, July 1979, MOSPI, Government of India, New Delhi

Vaidyanathan, A.(1971): Some aspects of Inequalities in Living Standards in Rural India, "Some in Srinivasan T.N. and P.K. Bardhan(Ed.) (1974):Poverty and Income Distribution in India Statistical Publishing Society, Calcutta,

Thirlwall,A.P.(2011): Economic Development, Palgrave Macmillan Basingstoke, England, United Kingdom

Table 1: Percentage of People Poverty line; India: 1973-74 to 2011-12

Sl. No.	Year	Poverty Ratio (%) as per Expert Group			Poverty Ratio(%) as per Expert Group		
		Rural	Urban	Total	Rural	Urban	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	1973-74	56.4	49.0	54.9	*	*	*
2	1977-78	53.1	45.2	51.3	*	*	*
3	1983	45.7	40.8	44.5	*	*	*
4	1987-88	39.1	38.2	38.9	*	*	*
5	1993-94	37.3	32.4	36.0	50.1	31.8	45.3
6	2004-05	28.3	25.7	27.5	41.8	25.7	37.2
7	2009-10	*	*	*	33.8	20.9	29.8
8	2011-12	*	*	*	25.7	13.7	21.9

Source: GoI, Planning Commission June, 2014:

Table 2: Decline in the Percentage of People Poverty line: India: 1973-74 to 2011-12

Sl. No.	Year	Decrease in Poverty Ratio (%) per year					
		As per Expert Group (Lakdawala)			As per Expert Group (Tendulkar)		
		Rural	Urban	Total	Rural	Urban	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	1973-74 to 1977-78(4)	0.83	0.95	0.9	*	*	*
2	1977-78 to 1983(5)	1.48	0.88	1.36	*	*	*
3	1983 to 1987-88(5)	1.32	0.52	1.12	*	*	*
4	1987-88 to 1993-94(6)	0.30	0.37	0.48	*	*	*
5	1993-94 to 2004-05(11)	0.82	0.61	0.77	0.75	0.55	0.74
6	2004-05 to 2009-10(5)	*	*	*	1.6	0.96	1.48
7	2009-10 to 2011-12(2)	*	*	*	4.05	3.6	3.95
8	1973-74 to 1987-88(14)	1.21	0.78	1.13	*	*	*
9	1993-94 to 2009-10(16)	*	*	*	1.02	0.64	0.97
10	1993-94 to 2011-12(18)	*	*	*	1.36	1.01	1.3

Note: Numericals in the brackets indicate number of years

Source: Calculated by the authors from Table 1

Table 3: Rural-Urban Gap in Percentage of People Poverty line:India: 1973-74 to 2011-12

Sl. No.	Year	Rural-Urban Gap in Percentage of People Poverty line	
		As per Expert Group (Lakdawala) method	As per Expert Group (Tendulkar) method
(1)	(2)	(3)	(4)
1	1973-74	7.4	*
2	1977-78	7.9	*
3	1983	4.9	*
4	1987-88	0.9	*
5	1993-94	4.9	18.3
6	2004-05	2.6	16.1
7	2009-10	*	12.9
8	2011-12	*	12.0

Source: Calculated by the authors from Table 1

Table 4: Relative poverty status of the States/UTs : 1973-74 and 1987-88 as per estimates of Expert Group (Lakdawala)Methodology

Sl. No.	States/ UTs by descending order of percentage of	
	1973-74	1987-88
(1)	(2)	(3)
1	Odisha	Dadra and Nagar Haveli
2	West Bengal	Odisha
3	Bihar	Bihar
4	Madhya Pradesh	West Bengal
5	Kerala	Andaman &
6	Lakshadweep	Tamil Nadu
7	Uttar Pradesh	Madhya Pradesh
8	Andaman & Nicobar islands	Uttar Pradesh
9	Tamil Nadu	Puducherry
10	Karnataka	Maharashtra
11	Puducherry	Karnataka
12	Maharashtra	Arunachal Pradesh
13	Tripura	Assam
14	Arunachal Pradesh	Sikkim
15	Assam	Tripura
16	Sikkim	Rajasthan
17	Nagaland	Lakshadweep
18	Mizoram	Nagaland
19	Meghalaya	Meghalaya
20	Manipur	Kerala
21	Delhi	Gujarat
22	Andhra Pradesh	Manipur
23	Gujarat	Mizoram
24	Dadra and Nagar Haveli	Andhra Pradesh
25	Rajasthan	Goa
26	Goa	Jammu & Kashmir
27	Jammu & Kashmir	Haryana
28	Haryana	Himachal Pradesh
29	Punjab	Chandigarh
30	Chandigarh	Punjab
31	Himachal Pradesh	Delhi

Source: Rearrangement done by the authors from tables A3 and A6 in Annexure-A in GoI Planning Commission:2014

Table 5: Percentage of People Below Poverty Line in India : By States and by Area: 1973-74

Sl. No.	States/Union Territories	Poverty Ratio and Ranking of States/UTs in descending order						
		Total		Rural		Urban		Rural-Urban Gap [Col (5)-Col (6)]
		% age of people	Rank	% age of people	Rank	% age of people	Rank	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	Andhra Pradesh	48.86	22	48.41	21	50.61	11	-2.2
2	Arunachal Pradesh	51.93	14	52.67	13	36.92	19	15.75
3	Assam	51.21	15	52.67	14	36.92	20	15.75
4	Bihar	61.91	3	62.99	3	52.96	6	10.03
5	Goa	44.26	26	46.85	22	37.69	17	9.16
6	Gujarat	48.15	23	46.35	24	52.57	7	-6.22
7	Haryana	35.36	28	34.23	27	40.18	16	-5.95
8	Himachal Pradesh	26.39	31	27.42	30	13.17	31	14.25
9	Jammu & Kashmir	40.83	27	45.51	25	21.32	30	24.19
10	Karnataka	54.47	10	55.14	12	52.53	8	2.61
11	Kerala	59.79	5	59.19	5	62.74	1	-3.55
12	Madhya Pradesh	61.78	4	62.66	4	57.65	4	5.01
13	Maharashtra	53.24	12	57.71	7	43.87	15	13.84
14	Manipur	49.96	20	52.67	15	36.92	21	15.75
15	Meghalaya	50.2	19	52.67	16	36.92	22	15.75
16	Mizoram	50.32	18	52.67	17	36.92	23	15.75
17	Nagaland	50.81	17	52.67	18	36.92	24	15.75
18	Odisha	66.18	1	67.28	2	55.62	5	11.66
19	Punjab	28.15	29	28.21	28	27.96	28	0.25
20	Rajasthan	46.14	25	44.76	26	52.13	10	-7.37
21	Sikkim	50.86	16	52.67	19	36.92	25	15.75
22	Tamil Nadu	54.94	9	57.43	8	49.4	12	8.03
23	Tripura	52	13	52.67	20	36.92	26	15.75
24	Uttar Pradesh	57.07	7	56.53	11	60.09	3	-3.56
25	West Bengal	63.43	2	73.16	1	34.67	27	38.49
26	Andaman & Nicobar	55.56	8	57.43	9	49.4	13	8.03
27	Chandigarh	27.96	30	27.96	29	27.96	29	0
28	Dadra and Nagar	46.55	24	46.85	23	37.69	18	9.16
29	Delhi	49.61	21	24.44	31	52.23	9	-27.79
30	Lakshadweep	59.68	6	59.19	6	62.74	2	-3.55
31	Puducherry	53.82	11	57.43	10	49.4	14	8.03

Note: (i)Ranks in descending order of poverty ratio assigned by the authors.

Source:GoI Planning Commission:2014

Table 6: Relative poverty status of the States/UTs : 1993-94 , 1999-2000 and 2004-05 as per estimates of Expert Group (Lakdawala)Methodology

Sl. No.	States/ UTs by descending order of percentage of people poverty line		
	1993-94	1999-2000	2004-05
1	Bihar	Odisha	Odisha
2	Dadra and Nagar	Bihar	Bihar
3	Odisha	Madhya Pradesh	Chattisgarh
4	Madhya Pradesh	Sikkim	Jharkhand
5	Sikkim	Assam	Uttarakhand
6	Assam	Tripura	Madhya Pradesh
7	Uttar Pradesh	Meghalaya	Dadra and Nagar Haveli
8	Arunachal	Arunacha Pradesh	Uttar Pradesh
9	Tripura	Nagaland	Maharashtra
10	Meghalaya	Uttar Pradesh	Karnataka
11	Nagaland	Manipur	West Bengal
12	Puducherry	West Bengal	Andaman & Nicobar
13	Maharashtra	Maharashtra	Tamil Nadu
14	West Bengal	Puducherry	Puducherry
15	Tamil Nadu	Tamil Nadu	Rajasthan
16	Andaman &	Andaman &	Sikkim
17	Manipur	Karnataka	Assam
18	Karnataka	Mizoram	Nagaland
19	Himachal	Dadra and Nagar	Tripura
20	Rajasthan	Andhra Pradesh	Meghalaya
21	Mizoram	Lakshadweep	Arunacha Pradesh
22	Kerala	Rajasthan	Manipur
23	Jammu &	Gujarat	Gujarat
24	Haryana	Kerala	Lakshadweep
25	Lakshadweep	Haryana	Andhra Pradesh
26	Gujarat	Delhi	Kerala
27	Andhra Pradesh	Himachal Pradesh	Delhi
28	Daman and Diu	Punjab	Haryana
29	Goa	Chandigarh	Goa
30	Delhi	Daman and Diu	Mizoram
31	Punjab	Goa	Daman and Diu
32	Chandigarh	Jammu & Kashmir	Himachal Pradesh
33			Punjab
34			Chandigarh
35			Jammu & Kashmir

Source: Rearrangement done by the authors from tables A7,A8 and A9 in Annexure-A in GoI Planning Commission:2014

Table 7 Relative poverty status of the States/UTs : 2004-05, 2009 and 2011-12
as per estimates of Expert Group (Tendulkar)Methodology
(Descending order of poverty)

Sl.	2004-05	2009	2011-12
1	Odisha	Bihar	Chattisgarh
2	Bihar	Chattisgarh	Jharkhand
3	Chattisgarh	Manipur	Manipur
4	Madhya Pradesh	Jharkhand	Arunachal Pradesh
5	Jharkhand	Dadra and Nagar Haveli	Bihar
6	Uttar Pradesh	Assam	Odisha
7	Tripura	Uttar Pradesh	Assam
8	Maharashtra	Odisha	Madhya Pradesh
9	Manipur	Madhya Pradesh	Uttar Pradesh
10	Assam	Daman and Diu	Karnataka
11	Rajasthan	West Bengal	Mizoram
12	West Bengal	Arunachal Pradesh	West Bengal
13	Karnataka	Rajasthan	Nagaland
14	Uttarakhand	Maharashtra	Maharashtra
15	Gujarat	Karnataka	Gujarat
16	Arunachal Pradesh	Gujarat	Rajasthan
17	Sikkim	Andhra Pradesh	Tripura
18	Andhra Pradesh	Mizoram	Meghalaya
19	Tamil Nadu	Nagaland	Tamil Nadu
20	Goa	Haryana	Uttarakhand
21	Haryana	Uttarakhand	Haryana
22	Himachal Pradesh	Tripura	Jammu & Kashmir
23	Punjab	Meghalaya	Delhi
24	Kerala	Tamil Nadu	Puducherry
25	Meghalaya	Punjab	Andhra Pradesh
26	Mizoram	Delhi	Punjab
27	Puducherry	Sikkim	Sikkim
28	Jammu & Kashmir	Kerala	Himachal Pradesh
29	Delhi	Himachal Pradesh	Kerala
30	Nagaland	Jammu & Kashmir	Goa
31		Chandigarh	
32		Goa	
33		Lakshadweep	
34		Puducherry	
35		Andaman & Nicobar	

Source: Rearrangement done by the authors from tables A7,A8 and A9in
Annexure-A in GoI Planning Commission:2014

JOURNEY AHEAD TOWARDS A ROBUST COMMUNITY RADIO SECTOR IN INDIA: PERSPECTIVES ON CHALLENGES AND ELUCIDATIONS

Dr. Ankuran Dutta*

Dr. Anamika Ray**

Abstract

Community Radio is already recognized as one of the most low cost media, especially suitable to reach remote communities and disadvantaged groups of people — the illiterate, the differently abled, women, the youth and the poor, while offering a platform to intervene in public debate, irrespective of people's educational level. In India, the campaign to legitimize community radio began in the mid-nineties. In December 2002, the Government of India approved a policy for setting up community radio stations (CRS) at well established educational institutions. The policy was reviewed to broad base the policy by bringing nonprofit organizations like civil society and voluntary organizations etc. within its ambit in November 2006. From the first community radio established in 2004, the sector has crossed over a decade now, with a total of 176 community radio stations in the country. As a participatory communication medium, community radio sector has been facing different types of challenges and could not touch the target that the government wanted to.

This paper explores the major challenges of community radio stations in India. It also investigates the reasons for such challenges and tries to provide some recommendations to make it a robust sector to reach the last person of

* Associate Professor and Head, Dept. of Communication and Journalism
Gauhati University, Guwahati, Assam, E-mail: adutta@gauhati.ac.in

** Former Assistant Professor, Dept. of Communication and Journalism
Gauhati University, Guwahati, Assam

the society. The major challenges of the community radio sector in the country have been classified into four major areas- policy, programming, governance and technology. Qualitative research methods have been used for collecting and analyze data.

Keywords: *Community Radio in India, Challenges of community broadcasting, Community Radio Policy, Programming for Community Radio, Technological challenges, Community Radio Governance.*

1. Introduction

With the increase of media proliferation all over the world, , a demand has been raised to accommodate the voices of the marginalized and create spaces for hearing the voices of the disadvantaged, leading to changes in media policies and broadcasting systems. Several community-based media initiatives are emerging in different parts of the world, making an attempt to promote participatory local development. Further, with the re-emergence of Radio from the shadows of the television dominated era as an important medium of infotainment, and rapid developments in information and communication technologies that have completely revolutionized the way radio is created, distributed and heard, a relatively new form of local radio, known as community radio is making its presence felt.

Community Radio (CR), commonly defined as a type of radio that caters to the interests of a certain area, broadcasting material that is popular among a local audience is emerging as one of the most cost-effective and democratic forms of media that allows participation of people in the process of development. Today several forms of peoples radio, owned and managed by them, and catering to their specific regional needs exist all over the world. These low cost operations provide a voice to the people, and are increasingly employed by civil society organizations and other development agencies to catalyze a social inclusion process.

Being a participatory communication medium, CR can play a crucial role in making the voices of the underprivileged and marginalized sections of society heard. CR has played a major role in creating awareness among people and informing citizens about their rights and entitlements. UNESCO says that as radio continues to move in the digital age, it remains the medium that reaches the widest audience worldwide (“World Radio Day,” 2014). This multi-purpose medium can help people, including youth, to be involved in discussions on topics that affect them. It can save lives during natural or human-made disasters; and it provides journalists with a platform to report the facts and tell their stories (Dutta, 2014).

1.1 Present Status of Community Radio in India

Community radio station is a crucial communication tool in India, where participatory democracy plays a vital role in overall development of a society. The Ministry of Information and Broadcasting has simplified the process of obtaining licenses so that a number of CRS can come forward with the motto of promoting voices and issues of the communities (Dutta, 2014). As on October 10, 2014, there are 176 operational Community Radio stations in India, operating from different parts of the country, catering to diverse communities and under different situations. The Ministry of Information and Broadcasting has received a total number of 1574 applications since 2004 and issued the Letters of Intent (LOI) to 489 organisations (“Facts and Figures of Community Radio- Ministry of Information and Broadcasting,” 2014).

However, only 207 radio stations were given Grant of Permission Agreement (GOPA) for setting up community radio stations in the country. As per latest reports from the Ministry, a total of 349 applications seeking permission to establish community radio stations have been kept under consideration while 736 number of applications have been replaced. A total of 91 applicants were cancelled their Letter of Intents (LOIs) by the Ministry for violating clause 3(b) (iv) of the Policy Guidelines for setting up of community radio stations in India which states that the eligible applicants should apply in the prescribed format and with the requisite fee to the WPC Wing for frequency allocation and SACFA clearance (Ibid).

1.2 Methodology

The primary objective of this study is to review the basic challenges of the community radio sector in India. The concomitant objectives are to classify the challenges faced by the community radio practitioners in respect of general governance of a station, to verify the quality of the programme production, to identify the challenges faced in terms of technical troubleshooting and to enumerate the possible solutions to eradicate the challenges from the sector.

The research is based on qualitative analyses. The tools used were focus group discussion, in-depth interviews, observation, case study and consultation of the secondary data. Two sets of focus group discussion comprising of eight and six representatives from the community radio stations respectively were conducted during 4th Community Radio Sammelan on 13-15 March, 2014 in New Delhi. Three sets of interviews were also conducted in Bhubaneswar, Guwahati and in Hyderabad. Five Letter of Intent holders and applicants for Community Radio licenses were interviewed in Bhubaneswar during 19-20 December, 2013. The Station Director, Manager and two coordinators of programme and technical lunch of Jnan Taranga, Guwahati were interviewed to know about the various challenges of the station on January 18, 2014.

Representatives of Deccan Radio and KMIT Tarang were interviewed on July 15, 2014 in Hyderabad.

Some important data were collected through observations in different events like meeting with the Volunteers of Radio Active, Bengaluru on February 3-4, 2014, participants' views of 10 CR stations of four states of South India on difficulty in programme production on February 25-28, 2014 in Bengaluru, Peer Review experience sharing meeting in Delhi on 13-15 May, 2014, Community Radio Technology workshop in Guwahati on 18-20 June, 2014 and Telecom Regulatory Authority of India (TRAI) open house discussion on July 3, 2014.

Two sets of interviews of the representatives from the community radio stations in Bangladesh were also carried out to understand the differences between the challenges of both the countries. The first set of interviews took place on November 25-27, 2013, where the broadcasters of 14 operational and two license holder community radio stations were interviewed in Dhaka. Total 32 representatives, two from each station were interviewed. In the second set of interview, 20 women broadcasters, two from 10 out of 14 operational community radio stations were interviewed between August 25 and 28, 2014 on the various aspects of broadcasting in community radio stations.

For the secondary data, the web pages of a few community radio stations and other relevant materials available on the web were visited and the publications of the Ministry of Information and Broadcasting, Commonwealth Educational Media Centre for Asia, Unicef, UNESCO were consulted.

2. Major Challenges of Community Radio in India

As per the methodology, the researchers collected primary data through different ways and consulted a considerable number of secondary sources of data. Based on the data and the observations, the researcher tried to categorize the major challenges in the CR sector into four areas. These are: policy, programming, governance and technology.

2.1 Policy

In India, the campaign to legitimise community radio began in the mid 1990s. In December 2002, the Government of India approved a policy for granting licenses for setting up of community radio stations to well established educational institutions like IITs and IIMs. After a few years the matter has been reconsidered. The government has decided to broad base the policy by bringing nonprofit organizations like civil society and voluntary organizations etc. under its ambit in order to allow greater participation by the particular community on issues relating to development and social change (Dutta & Ray, 2009, p. 4). The first CR station was established at Anna University, Chennai

on February 01, 2004. In the last decade, only 176 CR stations have been established in the country. But, in the 12th Five Year Plan period this could enable the government to aim at setting up at least 4000 community radio stations that were envisaged to be set by civil society organizations during the National Consultation on Community Radio held in 2007 (Likhi, 2013). Considering the growth and development of the sector, we can generalize that the number of CR stations, which is the target of the government may not be possible until and unless the policy changes.

2.1.1 The Union Information and Broadcasting (I&B) Minister Prakash Javadekar in a press meet marking 100 days of the new government said that around 600 community radio stations will be set up across the country in the 12th Five Year Plan under the INR 100 crore (about 16.2 million US \$) scheme set aside for 'Supporting Community Radio Movement in India' ("Total of 600 Community Radio stations to come up in 12th Plan: Javadekar | Editorial-News | Radioandmusic.com," 2014). But it has not been remotely scheduled as far.

2.1.2 Secondly, the researchers conducted a desktop research among 122 CR stations of the country with the help of the Community Radio Compendium, 2014, which reveals that 68.9% of CR stations utilize 10 hours or less for broadcasting through their respective stations. About 50% of the CR stations utilize only eight hours or less for broadcasting. Only 9% CR stations utilize the spectrum for more than 20 hours. Considering the frequency as a public property, not utilizing this property fully is a challenge. Further research and experiments are needed to address this issue.

2.1.3 Third challenge is non availability of the spectrum. In India, only three frequencies are available in a place and the fourth applicant cannot get a frequency to operate a CR station. Due to this limitation, a considerable number of applications have been refused by the Ministry.

2.1.4 The Fourth significant challenge is the complex licensing procedure. In the licensing procedure, not only the Ministry of Information and Broadcasting but different ministries like Home Affairs, Defense, Telecommunication are involved in the process of issuing licenses to applicant. Hence, the time needed to get a wireless operating license from the government is more than a year, in normal practice, about two years. Ironically in Bangladesh, within six months an applicant gets a licenses. An example of Mandakini Ki Awaz can be mentioned here. After struggling for four years to obtain a Community Radio license through a complex procedure, Mandakini Ki AawazKalyan Sewa Samiti, finally received their Wireless Operating License (WOL) in September 2014. The organisation applied for the license for setting up a Community Radio station in 2010 (Saxena, n.d.).

2.1.5 The Telecom Regulatory Authority of India (TRAI) has recently recommended (29 August 2014) that the first extension, i.e., on completion of the initial permission period of five years of a community radio station, may be granted on the basis of an application and verification of adherence to the terms and conditions of the permission. The application for extension must be taken in the fourth year of operations. It again confuses that after the end of tenure one extension of a radio station, whether it will be delivered to a community or the license will be withdrawn.

2.2 Programming

For an audio media, programme production and broadcasting are like the heart and soul. Without good programmes, a community radio cannot be successful. The challenge is more for the stations based in the cities, where several options are available. Following are the major challenges related to programme production in a community radio station-

2.2.1 Firstly, it is observed that majority of the community radio stations either follow the public broadcasting or commercial broadcasting. So many stations use to broadcast their programmes following the style of All India Radio and a large number of stations follow the commercial broadcasting based on entertainment only. The nature of community broadcasting should be different from both of the styles of presentation. The programmes should be distinct for the listeners reflecting the objectives of a community media.

2.2.2 Secondly, even after a decade, history of community radio broadcasting in India, active community participation in the programming is a long way from the reality. The community radio stations based in the university or educational institutes' campuses face more difficulties in bringing the community members for production of radio programmes apart from the student and teaching community of the institutions. An example will give us a clear picture. During the time of visit to the radio station, KMIT Tarang at the heart of the Hyderabad city, it was known that this station was not operational for more than a year in 2014. The professor, who is the in-charge of the station mentioned that due to the lack of human resource, they are not in a position to produce programmes. He also admitted that community participation was almost absent during the on air stage of the radio apart from the student community.

2.2.3 In India, AIR has a monopoly over the news and current affairs programmes on the airwaves. The government cannot clearly justify why private FM channels and community radio stations are prohibited from airing news and programmes on current affairs. On the other hand, out of 828 private TV channels, apart from the Doordarshan network in India, almost half, that is 406, are news and current affairs channels as on March, 2013. Not only these

channels are private in functioning and individual profit-making mechanism, but some of them are also managed by foreign companies (Dutta & Ray, 2014). It is also found that in Bangladesh, news bulletins are the most popular programmes of the community radio stations. Accordingly, the Telecom Regulatory Authority of India recommends (29 August, 2014) that CR stations should have a right to broadcast news and current affairs content, sourced exclusively from AIR, in its original form or translated into the local language/dialect. It will be the responsibility of the CR station permission holder to ensure that the news is not distorted during translation. But, in October, 2014, the Supreme Court of India allowed a Public Interest Litigation against the ban on 'News' in the private FM and community radio (PTI, 2014).

2.2.4 One of the important objectives of a CR station should be to create an archive of the indigenous art, culture and music. This archive would not only help the community in preserving their folk performances, but also help them to make it alive among the community in a competitive world dominated by Bollywood and western music. There is a gap between the community broadcasters and local artists in so many stations and therefore, those stations are more interested to play film songs instead of broadcasting local art and culture. We should not ignore that a few stations are doing appreciable job, like 'Bundelkhand Ki Awaz' on preservation of the folk songs.

2.2.5 Capacity building for thematic programme production is a need for developmental works. Particularly on disaster management and conflict resolution, community radio can play a crucial role. In the recent past, a few stations have played a vital role in the time of disaster in India. In the cyclone called *Mahasen*, Krishi Radio of Bangladesh served the community at a stretch, broadcasting for 86 hours using a generator. In India, the TRAI (29 August 2014) recommends that the National Disaster Management Authority (NDMA), in consultation with the Ministry of Information and Broadcasting (MIB) and Wireless Planning and Coordination wing (WPC), establish detailed guidelines for use of CRSs in disaster management operations. The guidelines should include the procedure to be followed in case, relocation of an existing CR station is required or for the establishment of a new CR station in the disaster affected region.

2.3 Governance

There are different challenges in managing a Community Radio station. The clear idea to manage a CR station is the biggest concern among the management of the stations. The following are a few challenges –

2.3.1 The policy of the community radio in India has clearly mentioned day to day function of a station. Although the stations have to sign GOPA,

where the policies are written, but the awareness and clear understanding may be considered as a challenge.

2.3.2 There is no common mechanism to file a complain, if a station violates the ethical practices. Policy compliance has become the central driving force to ensure that the CR stations function as per the desired objectives. CR stations are also debated on various directives of the Policy Guidelines, for example, if music could be played on CR stations (Chittor, 2013, p. 01). Due to the lack of a transparent monitoring mechanism, the stations may avail undue freedom and violate the ethical guidelines.

2.3.3 Community engagement in policy decision is another challenge for most of the stations. The ethical guideline says, “Stations may be practicing different degrees of community participation given the number of years they have been in operation and the effort at community involvement they have put in during those years. However, in keeping with the core principle of empowering community voice, it is essential that stations design their content production and community engagement strategies in a manner in which, over a period of time, the community members alone are producers and editors of the content. It is important that this strategy for community participation is articulated and written up as part of the CR station’s “own policy” (Chittor, 2013, pp. 12-13).

2.3.4 Volunteers are the integral part of any community radio station in the world and they are the working force that ensures the community participation. Nonetheless, who are the volunteers? Are they dedicated enough to spend their times for the community radio or those who have a distinct aim or objective to serve a community using any media? “Or there are some other gains or motives for a person to get involved like that of gaining “experience or pre-service training.” The concept of volunteering in the developed and developing countries are different from the point of view of involvement, expectation and accountability. The issue ‘involvement’ refers to the engagement of the volunteers in different activities of a CR station. Volunteers may be involved in programming, management (technical or general administration) and policy decision. Expectation may be analysed from both the perspectives- management’s expectation and expectation of the volunteer, particularly in the context of developing countries (Dutta, 2014). But, in India it became a major challenge to engage the volunteers in the real sense and sustain their services for a long time.

2.3.5 Sustainability is an increasing concern for CR stations in the region (Ideosync Media Combine, 2014). Sustainability can be categorized here as financial sustainability and social sustainability. Financial sustainability is a major concern for the stations, particularly run by a small NGO or civil society. Regular

recurring cost is involved to run a station, but the generating financial resource is the major task. The Ministry's agency, Directorate of Advertising and Visual Publicity (DAVP) empanels community radio stations at a rate of INR 4/- (US\$ 0.07) per second. But there are a lot of issues involved, such as volume of advertisements per month and release of the amount. An example can be cited here, Jnan Taranga is one of the first DAVP empanelled CR stations. But in the last four years, the station has not been receiving any amount for broadcasting of the advertisements issued by DAVP.

2.3.6 The campus based stations have another big challenge of social sustainability. There is a notion that the campus based stations use to broadcast only the educational programmes, though the policy restricts to air 50% for those programmes and rest 50% is for the community. Nevertheless, as these stations are situated inside an educational institution's campus, so common people or the member of the geographic community do not want to enter the campus due to the restrictions from security point of view. It should not be generalized that all the campus based stations have similar type of restrictions for the common public. For example, Radio Active is based in the Jain University in Bengaluru, but it is more popular among the other communities than among the students and faculties. Even, a few stations run by civil societies have similar problem with lesser community participation. But it must be mentioned that social sustainability is an issue among the stations, particularly based in cities and in the campuses of educational institutions.

2.4 Technology

Community radio practitioners are not the professional broadcasters. They are basically community members, who want to disseminate information, discuss their own problems and share their views. Therefore, it is natural not to expect them very technology savvy and they always face different types of technological challenges in day to day transmission of the radio programmes.

2.4.1 Observation has revealed that while CR stations are able to manage their production and management aspects to some extent, there is pressing need for technical guidance and support relating to running or setting-up a CR station and maintaining the basic equipment. The paucity of trained personnel at the local level makes them dependent on 'outside experts' even for elementary tasks. Getting trained professionals from metros for trouble shooting makes CRS an expensive proposition.

2.4.2 Challenges exist in both hardware as well as software part. Hardware is always dependant on the regular maintenance, handling, space, pollution etc. At the same time, for the software, the stations need expertise to handle and solve running errors.

2.4.3 As per the Indian policy, no station can install any foreign made transmitter and other equipment like the stations of Bangladesh. Only a few organisations are manufacturing radio transmitters in India, such as Bharat Electronics, Broadcast Engineering Consultant India Ltd., West Bengal Electronics, Nomad etc. The researchers observed several stories of stopping broadcast due to the transmitter break down and took a few months to recover.

2.4.4 Electricity is an important challenge for the stations based in remote areas. This problem is a common problem for most of the stations. There are several locations, where the electricity is not available and if it is there, frequent load shedding becomes a major threat to sustain broadcasting of the programmes.

2.4.5 Due to very limited power of 50 watts, the hilly regions and cities with high-rises cannot cover a satisfactory geographic location. There are many grey areas created as a result, even with one kilometer radius, the signals available are not clearly. Again, technological faults, such as weak coaxial cable and a wrong direction of the antenna decrease the coverage area to two-three kilometer radius.

3. Discussions and Recommendations

Community Radio has emerged as an effective medium to give voice to the voiceless at the grassroots level. Currently, there are about 176 Community Radio stations on the air in the country and it is estimated that more than 500 CRS are at various stages of processing. After discussing the major challenges encountered by the sector, we may look into a few recommendations.

3.1 As noted above, the target number of community radio stations is ambitious considering the present status. But it may be possible with the following statistics-

Number Magic:

We have raised a question while mentioning about policy related challenges, and will it be possible to establish 424 more community radio stations in the country within three years by 2017. The total target is 600 CRS by 2017. The present number of operational stations is 176, which were established more than a decade ago (February 01, 2004 to October 10, 2014). The aim is to establish about three times of the operational stations in three years. The answers could be possible with the existing applications only.

No. of stations signed Grant of Permission Agreement (GOPA) 207

No. of present operational stations 176

No. of stations waiting for the final licenses 31

No. of Letter of Intent (LOI) holders 489

No. of stations who have not signed GOPA 291

No. of applications kept under consideration 349

Here, the statistics shows that the aggregate of the LOI holders, who are in the process to sign the GOPA and the applications kept under consideration is 640. To fulfill the target by 2017, the country needs 424 more stations to be operational. If the Ministry rejects 216 applications or no initiative being taken from the applicant, then also total 600 stations can be achievable by 2017. But to achieve that goal, we need a few policy amendments or changes.

3.2 A considerable numbers of applications have been rejected because of non-availability of frequency. The concept of sharing semilar frequency can be taken by the Ministry of Information and Broadcasting. It will not only help in utilizing the natural resources properly, but also in making the stations financially sustainable.

3.3 Community Radio may be transformed to the Community Multimedia hub. Recently, Ankuran Dutta from CEMCA, Commonwealth of Learning has developed an idea on 'C3' that is Community Communications Centre (<http://cemca.org.in/blog/>). It is a revised version of some UNESCO models on Community Information Centre, Community Multimedia Centre etc and is based on a participatory model, not on information dissemination model and can be a solution in the near future (ComDev Asia, 2014). This model may be employed to a sustainable model.

3.4 In the licensing process, some revisions are suggested by the stakeholders, such as revisit the eligibility criteria to include other stakeholders, renewal of CRS license needeasier, frequency allocation can follow the West African model of open and transparent system, including public hearings.

3.5 Creation of a single window system for processing of license and reduce the time of setting-up CRS. The first governance challenge, therefore, is to strengthen the single window clearance mechanism for expeditious approval of applications put in by non profit civil society organizations from remote rural areas on the lines of clearance granted to universities and government educational institutions (Likhi, 2013). Recently, the TRAI (29 August 2014) recommends, "MIB establish an online 'single window' system that will reengineer and integrate the entire process from the stage of filing application with MIB; grant of the Wireless Operating Licence (WOL) by WPC and signing of the GOPA. The online system must provide feedback on stage and status of the application in accordance with the time-lines already prescribed by MIB."

3.6 A community radio should play a role in bridging the gap within public servants and community. This practice is going on in some CR stations, but how will this be scaled up in the sector should be a priority. This effort will help in a tri-partite way. The community people will be able to know the public policies and if they have any grievance or query they can utilize the CR as a

platform. Secondly, it is the responsibility of all public servants to work for the people and the messages should be properly communicated. Thirdly, the CR station can get funding, advertisements etc., from the public departments. The CR stations also create a rapport, which may be utilized for the listeners in any adverse situation.

3.7 One of the important objectives of a CR station should be to create an archive of the local art, culture and music. This archive not only helps the community in preserving their folk performances, but also serves to make it alive among the community in a competitive world where Bollywood and western music is gradually becoming popular. The district level cultural offices under the state Cultural Affairs, central organisations like SangeetNatak Academy can utilize this wonderful media for popularization and preservation.

4.8 Community Learning Programme is based on communication for development strategies, blending outcome-oriented learning design with process-oriented dialogue and stakeholder participation. This model of learning based radio programming helps in huge community participation in programme production (“Commonwealth of Learning - Community Learning Programme Model,” n.d.).

3.9 To overcome the financial sustainability, a few measures can be adopted, like decentralized programme production through mini-listener clubs to sustain programme development; collaborative programming will help in decreasing the expenditure level. An amount for operating cost to all CR stations may be considered by the government for initial five years.

3.10 Developing a sense of belongingness amongst the community for the CR stations is the most important factor. Different membership cards may be issued by a CR station, such as yearly or lifetime and collect a small fee. It will help the station in generating an amount for their expenditure and the members would also feel that they became the integral part of the station. This model helps more in social sustainability than financial.

3.11 Community radio should be a medium of social change and social audit. If community members can participate in the management, more particularly in the agenda setting level, then the objective of a CR station would be fulfilled. Innovations are possible in this context and a few models can be developed to engage the community in the decision making stage in the real sense.

3.12 Grievance redressal mechanisms needs to be developed, both at the level of the CR station and a central place (such as a website for consumer complaints).

3.13 Contributions of community volunteers need to be compensated through innovative approaches to continue their support and engagements with the CR sector.

3.14 To reduce the costs of a CR station, open access software should be used. Instead of spending huge amount in purchasing costly software, *Open Source* software must be utilized for all the activities of the station. For example, Audacity is user friendly software for both recording and editing purpose.

3.15 Considering the number of mobile phone users in India, mobile technology may be utilized in a greater way in community broadcasting. While web streaming of CR is feasible with available Open Source technology, more innovation is needed to make this user-friendly for the CR sector.

3.16 A cost effective technology can be developed for the required power supply of a CR station. It will help the rural stations during frequent load shedding and illogical power cuts. Use of small wind mill power supply technology or use of solar power technology is very useful for resolving the energy challenge in the stations, particularly based in remote areas.

4. Concluding Remarks

It is considered that Community Radio is one of the youngest communication media in the country with only 10 years experiences. The service, not an 'industry' like other form of media, needs more attention from the government. Although, the provision of Community Radio Support Scheme under the 12th Five Year Plan provides support in the development of the infrastructure, capacity building, awareness creation etc., but a vision document is needed to visualize the ground reality and future architecture. A strategic awareness creation campaign should be launched not for the probable applicants, but for the common masses to make them aware regarding the objectives and functions of a community radio and how a common people can utilize this powerful medium for the purpose of societal development.

In this research the effort was made to identify some of the most significant challenges faced by the sector and how this sector can go ahead towards a robust development of media sector. There are some other areas also, where challenges are faced by the sector, such as social and professional recognition. In this competitive media world, the main stream media does not recognize community radio as a powerful communication tool. Likewise, the common masses have also tendency to ignore this useful medium. The success stories of this media should be focused and people should identify the changes in their livelihood.

Work cited:

Buckley (ed.), S. (2011). Community Media: A Good Practice Handbook. Retrieved from <http://unesdoc.unesco.org/images/0021/002150/215097e.pdf>

Chittor, J. (2013). Ethical Practice Guidelines for Community Radio Stations (1st ed.). New Delhi, IN: Commonwealth Educational Media Centre for Asia (CEMCA).

ComDev Asia. (2014, September). Communication for Development, Community Media and ICTs for Family Farming and Rural Development in Asia Pacific. Retrieved November 1, 2014, from <http://www.ypard.net/sites/ypard.net/files/asia%20pacific%20virtual%20consultation%20report.pdf>

Commonwealth of Learning - Community Learning Programme Model.(n.d.). Retrieved September 2014, from <http://www.col.org/progServ/programmes/livelihoods/healthyComm/Pages/CommunityLearningProgrammeModel.aspx>

Dutta, A. (2014). Innovations in Community Radio: With special reference to India. Retrieved from Ministry of Information and Broadcasting, Government of India website: <http://mib.nic.in>

Dutta, A. (2014, September 10). Community Communications: Community Radio in India: Present Status. Retrieved October 1, 2014, from <http://comcomm.blogspot.in/2014/09/community-radio-in-india-present-status.html>

Dutta, A. (2014, September 11). CEMCA :: C3 : A Model for Community Communications. Retrieved from <http://cemca.org.in/blog/c3-model-community-communications-3#.VFdXXMmnUUw>

Dutta, A., & Ray, A. (2009, January 29). Community Radio: A Tool for Development of NE. The Assam Tribune [Guwahati], p. Edit Page.

Dutta, A., & Ray, A. (2014, April). Private FM, community radio stations have a case | Press Institute of India. Retrieved from <http://pressinstitute.in/private-fm-community-radio-stations-have-a-case/>

Facts and Figures of Community Radio- Ministry of Information and Broadcasting. (2014, October 10). Retrieved November 1, 2014, from <http://mib.nic.in/ShowDocs.aspx>

Ideosync Media Combine. (2014, May). CR and Sustainability. Retrieved from <http://www.slideshare.net/CEMCA/research-methodology-38734206?related=2>

Likhi, A. (2013, June 5). Challenges for Community Radio in India's Rural Development. Retrieved October 30, 2014, from <http://blogs.worldbank.org/publicsphere/challenges-community-radio-indias-rural-development>

PTI. (2014, October 17). Supreme Court of India allows PIL against ban on news over radio. Retrieved October 22, 2014, from <http://blog.uccommedia.in/supreme-court-of-india-allows-pil-against-ban-on-news-over-radio/>

Recommendations on Issues related to Community Radio Stations: Telecom Regulatory Authority of India. (2014, August 29). Retrieved September 1, 2014, from http://www.trai.gov.in/Content/ReDis/533_13.aspx

Saxena, R. (n.d.). Uttarakhand gets its seventh Community Radio Station. Retrieved November 1, 2014, from <http://crfc.in/uttarakhand-gets-its-seventh-community-radio-station/>

Total of 600 Community Radio stations to come up in 12th Plan: Javadekar | Editorial-News | Radioandmusic.com. (2014, September 3). Retrieved October 1, 2014, from <http://www.radioandmusic.com/content/editorial/news/total-600-community-radio-stations-come-12th-plan-javadekar>

World Radio Day. (2014). Retrieved August 25, 2014, from [http://www.unesco.org_new/en/unesco/events/unesco/housetx_browser_pi1\[showUid\]=27762&cHash=46172f02f1](http://www.unesco.org_new/en/unesco/events/unesco/housetx_browser_pi1[showUid]=27762&cHash=46172f02f1)

IMPLEMENTATION OF THE RIGHT TO FREE AND COMPULSORY ELEMENTARY EDUCATION IN INDIA: ISSUES AND CHALLENGES

Nurzamal Hoque¹
Ratul Mahanta²

Abstract

Although the Right to Free and Compulsory Education (RTE) Act 2009 is one of the most remarkable constitutional adjustments ever for delivering free elementary education in India, several issues have been found important that hinder governments' efforts in delivering free elementary education in the country. While most of the challenges are related to the shortfall of resources, some others are associated with either ill-designed policy mechanisms or the absence of policy perspectives to monitor the applicability of norms for delivering quality education freely. The goal of delivering free elementary education, thus, will be an unrealizable dream unless the government can generate adequate funds for elementary education with suitable policy changes for the same.

¹ Research Scholar, Department of Economics, Gauhati University, Guwahati (Assam), 781014, Email: nurzamalhoque06@gmail.com

² Associate Professor, Department of Economics, Gauhati University, Guwahati (Assam), 781014, Email: rmeco@gauhati.ac.in

1. Introduction

Like many other developing countries of the world, free elementary education (6–14 years) in India is a constitutional commitment which has been made to achieve the goal of universal elementary education (UEE) in the country. The Constitution of India in a Directive Principle contained in Article 45 stated that “the State shall endeavor to provide within a period of 10 years from the commencement of the Constitution, free and compulsory education to all children until they complete the age of 14 years”. But even after more than six decades of the promulgation of the Constitution, the goal of delivering free elementary education still remains a distant dream. Given these circumstance, we attempt here to discuss the issues and challenges in attaining the constitutional goal of delivering free elementary education in India.

Following the constitutional promise, since the early 1950s, a number of education policies and programs have been adopted by the government of India. The National Policy on Education (NPE) 1968 and 1986 (revised as Program of Action (POA) in 1992), District Primary Education Program (DPEP) 1994, Mid-day Meal (MDM) program 1995, Sarva Siksha Abhiyan (SSA) Mission 2001, etc. are some of the most notable policies and programs.

Additionally, in 2002, Indian Parliament passed the 86th Amendment Act by inserting Article 21-A. This 86th Amendment Act enshrined the ‘right to education’ of all children as a Fundamental Right by making governments’ compulsion in delivering free elementary education in the country. But a separate education Bill was needed to become this Amendment into operation as a mandatory law. A rough draft of the ‘right to education’ Bill was prepared in 2005. On 4th August 2009, this Bill was approved by the Parliament which was notified as the children’s Right to Free and Compulsory Education (RTE) Act on 26th August 2009. With the RTE Act 2009 coming into force from 1st April 2010, India had joined the group of over 130 countries of the world who have promised to deliver free education to the children.

2. The RTE Act and free elementary education

2.1 RTE norms and cost implications

The RTE Act 2009 specified the right of children to free and compulsory education till the end of the elementary level. In pursuance of this, the Act came up with several provisions including age appropriate admission procedure, prohibition of screening for admission, prohibition of physical punishment for children, ‘no detention’ up to class VIII, and prohibition of expulsion of school children. The basic aim was to ensure a teaching-learning process that is free from fear and anxiety with clear implications for curriculum development so as to move towards a system that, as the NPE 1986 stated, provides ‘a warm, welcoming and encouraging approach for children to learn’. The Act laid down

the responsibilities of government, local authorities, teachers, and parents to ensure compulsory admission, retention, and completion of elementary education by all children. In 2012, RTE Act was modified by including provisions for disabled children.

However, to deliver free education the Act ambiguously pegged certain norms and standards for elementary education which were over and above the SSA norms. For example, the Act pegged both pupil teacher ratio (PTR) and student classroom ratio (SRC) at 30:1 for primary and 35:1 for upper primary schools (theses norms were 40:1 under SSA). It also provided that schools should have at least one classroom for every teacher at both primary and upper primary level and at least one teacher for each subject (Science, Mathematics, Social Studies, and Languages) at upper primary level. Regarding physical infrastructure, the Act stipulated that schools must have all the requisite facilities like drinking water, toilet, library, playground, etc. of reasonable quality. Additionally, the Act opted for the construction of school management committee (SMC), a representative body of local authorities and parents of currently enrolling students, to ensure improvement in school management system. In a later period SMCs were to exercise the power of sanctioning leave and salary release of teachers subject to their performance in schools. The Act also prescribed 25 percent quota for disadvantaged children in private unaided schools and prohibited the functioning of private schools which are not recognized by the appropriate government. In the first case, schools would be reimbursed (in case if disadvantaged children take admission in those schools) equal to the per student cost in government schools.

To realize the RTE norms under such conditions, the recruitments of a minimum 5.50 lakh teachers were required with mandatory qualifications to taper down the PTR to the level prescribed by the Act. Another concerning area was to train-up the existing 7.70 lakh unqualified teachers within 5 years from the commencement of the Act. In respect of physical infrastructure, a good number of schools were running without drinking water (7.72 percent), toilet (19.13 percent girls' toilet and 11.60 percent boys' toilet), playground (44.97 percent), library (42.75), etc. in 2010-11, i.e., at the time of commencement of the Act.

Thus, fulfilling the RTE norms altogether was appeared to be a challenging task for the governments especially for backward states. Because, the Planning Commission had already reduced the central's share of funds for elementary education (under SSA) from 75 percent (under the Tenth Five Year Plan, 2002-07) to 50 percent in the final year of the Eleventh Five Year Plan, 2007-12. One of the reasons of this declining share was the increased expenditure for the central government's universal secondary education (USE) program initiated

during the Eleventh Five Year Plan. However, for the implementation of RTE norms, the central government agreed to provide 65 percent of fund during the period 2010-11 to 2014-15 except 90 percent for all the north-eastern (NE) states. In 2015-16, central's share had been reduced to 60 percent as per the Ministry of Finance's letter dated 28 October 2015, except for NE states. The three Himalayan states (Jammu and Kashmir, Himachal Pradesh, and Uttarakhand) was also joined with the group of NE states in 2015-16 and enjoyed 90 percent share from the centre. This new funding pattern is, however, prevailing till date and all Union Territories (UTs) are receiving 100 percent fund from the center for all Centrally Sponsored Schemes (CSS) for education such as the SSA in this new pattern.

2.2 What far we have achieved

While the RTE Act recommended norms for delivering free elementary education within 5 years from its enforcement, but in reality the picture of elementary education is somewhat different. Most of what we know about the progress of elementary education comes from annual data of District Information System for Education (DISE) and Annual Status of Education Report (ASER) for India.

DISE data reveal that during 2010-11 to 2015-16, the total number schools (primary and upper primary) increased by 36.9 thousand in which the share of government schools was only 33.8 percent. This indicates that during this period the growth of private schools is much higher than that of government schools. The number of teachers in all schools increased from 64.03 lakh in 2010-11 to 80.77 lakh in 2015-16, and thereby improving the overall PTR (elementary level) from 30:1 to 24:1. Alike, overall SCR also gradually improved from 31:1 to 27:1 during the same period. However, given the higher growth rate of private schools, the share of government school teacher has come down from 64 percent in 2010-11 to 58 percent in 2015-16. In contrast to the growth of the number of teachers in all schools, the problem of teachers' absenteeism, particularly in government schools, is still acute in India. In a study done by the World Bank, in India one out of four teacher remain absent in government schools on every working day.

Looking at the growth of physical infrastructure in schools, the number of schools having boys' toilets experienced the highest improvement from its previous 42.6 percent in 2001-11 to 97.1 percent in 2015-16 followed by the number of schools having girls' toilet (from 60.3 percent to 97.6 percent). In 2015-16, the share of schools having functional girls' toilet was around 96.8 percent and only 52.02 percent had handwash facility near toilets. State wise, the growth of schools having functional toilets was higher in Andhra Pradesh, Odisha, Chattisgarh, etc. whereas in Manipur and Tripura the growth was

much lower. Schools having drinking water facilities also increased to around 97 percent in 2015-16 where about 52.98 percent had hand-pump water and the rest had tap-water facility. But, the shares of schools having playground and boundary walls were just over 60 percent in 2015-16. The overall figures relating to the distribution of free textbooks and uniforms were considerably good. During 2010-11 to 2014-15, around 12.63 crore (8.19 crore primary and 4.44 crore upper primary) students received free textbooks annually across the country, while the number of students receiving free uniforms was 5.5 crore (3.61 crore primary and 1.92 crore upper primary).

At the other end, total enrollment in primary schools declined by 60.84 lakh during 2010-11 to 2015-16 from its previous 13.52 crore in 2010-11. This fall in enrollment was mainly the result of a gradual decline in a child population of 51 lakh aged between 0–6 years during 2001 to 2011. In government primary schools, enrollment declined by 1.35 crore leading to a sharp decline in share of enrolment in those schools from 67.02 percent in 2010-11 to 59.44 percent in 2015-16. ASER in 2012, however, came up with a different scenario. According to this report, the share of enrollment in rural private schools jumped from 21.5 percent to 28.1 percent within two years of implementation of the RTE Act. However during 2014 to 2016, enrollment in those schools remained almost unchanged, 30.8 percent and 30.5 percent respectively (ASER 2016). State wise analysis reveals that there has been a substantial increase in enrollment in private schools in Assam (from 17.3% to 22%), Andhra Pradesh (from 24.4% to 29.5%), and Uttarakhand (from 37.5% to 41.6%) during the same period. In contrast, Kerala and Gujarat showed considerable improvement in government school enrollment at the upper primary level. In Kerala, enrollment has increased from 40.6 percent in 2014 to 49.9 percent in 2016, whereas in Gujarat these figures were 79.2 percent and 86 percent respectively.

In contrast to the growth of school-based indicators over the last couple of years, the quality of education measured in terms of students' performance in schools has remained stagnant or declined in many cases. ASER provide information on students' learning ability which is based on their ability of reading a textbook and doing simple arithmetic. Just before five years of enforcement of the RTE Act, ASER, in its first report in 2005 came out with a shocking fact that about 51 percent of class V students enrolled in government schools could read class II standard textbook. This figure remained unchanged till the fifth ASER report in 2010, published six months after the implementation of the RTE Act. In 2012, the same figure dropped down to 41.7 percent and was stagnant till 2016 (41.6 percent). The reading ability of students in private schools also declined from 64.2 percent in 2010 to 62.9 percent in 2016.

However, overall reading levels in class V have remained unchanged during 2011 to 2016 (See ASER 2016 for more details). States like Gujarat,

Maharashtra, Tripura, Nagaland and Rajasthan showed an improvement in reading levels during 2014 to 2016. But the national figure of reading levels in class VIII deteriorated from 74.7 percent in 2014 to 73.1 percent in 2016, although in some states like Manipur, Tamil Nadu, Rajasthan, and Maharashtra the government schools showed an improvement in the last couple of years. In the same vein, the overall proportions of students in class V and class VIII who can do simple arithmetic (subtraction and division) both in government and private schools have deteriorated during 2014 to 2016, even if some states showed improvement in the same.

After the enactment of the RTE Act, on an average the share of enrollment in private schools is growing especially in rural India. At the same time, performances of students in government schools remain far behind the performances of students in private schools, although the later has also experienced a gradual declining trend over the last few years with a few exceptions. There are many reasons behind this falling performance which we shall discuss in the next section. But it can be said that there is clearly a mismatch between government thoughts and public desires.

2.3 Areas of concern

Although the RTE Act stood as a milestone for elementary education, it has largely been criticized on the grounds of not including over 15 crore pre-primary (0–6 years) and senior school (15–18 years) children of the country. Hopefully, the Act will be modified soon by covering both pre-primary and senior school children. The inclusion of pre-primary and senior school children will not only stimulate the process of delivering free elementary education but also help in achieving the goal of USE initiated during the Eleventh Five Year Plan. However, there are some areas of the Act that need further attention by the policy makers which we shall discuss in the following. In this connection, scholars like Jha and Pravati (2014) have already discussed some issues relating to the implementation of the RTE norms in the country.

First, the Act fails to improve the learning ability of students; rather it has witnessed a decline in the level of learning over time. Indeed, the Act has little provisions to define or elaborate on the learning of students, pedagogy, or even the quality of teaching. Critics, however, point to the adoption of ‘no detention’ policy of the Act as one of the most obvious reasons for low quality learning by the students. The ‘no detention’ policy has some benefits in improving the retention rate among students especially belong to economically backward classes. The Central Advisory Board of Education (CABE), the highest body advising the center and the states on education, recently passed a resolution to take out the ‘no detention’ policy based on the fact that it has led to a lower level of learning among students. Based on this resolution, the MHRD has

changed the 'no detention' policy in the year 2016. According to the revised policy, now all students of classes V and VIII have to pass the examination to get into the next higher class. Another obvious reason for low level of learning is the poor quality teaching especially in government schools. Many factors are responsible for poor quality of teaching in government schools. But among all, the high level of teachers' absenteeism has been identified as a key factor (Kremer et. al 2005). The problem of teachers' absenteeism would hopefully reduce by the construction of SMC. But as notified by the RTE Act, SMCs are yet to get the power of sanctioning the leave and salary release of teachers.

Second, though there is provision of age appropriate admission for all children in the Act, yet it never suggests any bridge course needed to prepare children for a given class. In practice, even if there is bridge course, it is rather impossible to prepare children for a higher class who don't have enough knowledge from lower classes. Third, the RTE Act prescribes 25 percent quota for disadvantaged children in private schools where such schools will be reimbursed equal to the per student cost on government schools. But given the higher per student cost in private schools, it is unclear that who will bear the extra cost. Under these circumstances, the appliance of this norm would obviously be a challenging job. Even if such admission is possible, sometimes other relevant costs in private schools such as costs for extracurricular activities, maintaining high quality uniforms and mid-day tiffin boxes restrict poor students from taking admission in good quality private schools.

Now there is an urgent need for well designed strategies to monitor the availability and applicability of RTE norms at the school level so as to create a student friendly learning process and achieve a teaching-learning process that is free from fear and anxiety. Looking at the other issues, it is somewhat impossible to draw the attention of all children belonging to poor category families into schools without uplifting their socio-economic conditions. It is generally believed that the incidence of poverty and illiteracy in many cases hold back families from sending their children into schools. In 2015, the total number of poor (defined in \$1.90 or Rs 123.5 per day) in the country stood at 17 crore or 12.4 percent of country's total population, falling from 29.8 percent in 2009. In 2014, about 58 percent of the country's total population lived on less than \$3.10 per day. At the other end, according to United Nations Educational, Scientific and Cultural Organization (UNESCO) 2014, India currently has the highest illiterate adult population (28.6 crore) in the world. This figure is about 37 percent of the world's total number of adult illiterates.

Having this huge number of adult illiterates combined with the number of poor indicates that, the country is still paying the price of not fulfilling the constitutional vision at the right time; and the poor in particular remain largely

excluded even from the benefits of elementary education. However, the country has been able to reduce the number of poor who are living below Rs 123.5 per day by about 2.5 fold during the period 2009 to 2015; credit goes to various poverty alleviation programs operating across the country. Yet, the country is still lagging far behind in reducing the number of adult illiterates. One key reason is that adult education program continuously receives a very low share (below 0.5 percent) of total budgeted expenditure on education. Here it is pertinent to mention that the National Literacy Mission (NLM) introduced in 1988 had started its mission of reducing adult illiteracy, although little is known about the success of the mission. By the end of Tenth Five year Plan, NLM 1988 had made 12.75 crore people (aged 15–35 years) literate.

3. Concluding remarks

The RTE Act is a remarkable constitutional adjustment for delivering free elementary education in India. But it is really unfortunate that India accomplishes this move only after a long six decades of constitutional promulgation. One can easily understand that the concept of ‘inclusive growth’ in Indian economy is unlikely without achieving the goal of UEE. However, the public demand for elementary education, which has increased with the passage of country’s economic growth, is certainly a good indication for achieving the goal of UEE in the country. Given this higher demand, India will be able to attain her constitutional dream very soon with suitable implementation of RTE norms by making necessary modification combined with the efforts of poverty alleviation programs in uplifting society’s welfare. In this case, the role of the 14th Finance Commission (2015-16 to 2019-2020) will be very important for generating funds for effective implementation of RTE norms.

Work Cited

- Annual Status of Education Report (ASER) (2005, 2010, 2016) Pratham Foundation. New Delhi
- Jha, P. and P. Parvati (2014) ‘Assessing Progress on Universal Elementary Education in India: A Note on Some Key Constraints’, *Economic and Political Weekly*, 49(16); 44-51
- Kremer, M., K. Muralidharan, N. Chaudhury, J. Hammer, and F. Halsey Rogers (2005) ‘Teacher Absence in India: A Snapshot’, *Journal of the European Economic Association*, 3(2&3); 658–67
- Mehrotra, S. (2012) ‘The Cost and Financing of the Right to Education in India: Can We Fill the Financing Gap?’, *International Journal of Educational Development*, 32; 65-71
- Tilak, J. B. G. (2009) ‘Inadequate Funding for Elementary Education’, *Combat Law*, 8(3&4); 40-47

TRADITIONAL ALCOHOLIC BEVERAGES AND THEIR NUTRITIONAL VALUES

**Prof. Dibakar Chandra Deka*,
Ms. Pranami Handique &
Ms Anamika Kalita Deka**

Abstract

Consumption of traditional rice beer in socio-cultural and religious activities amongst different ethnic communities of north-east India is an age-old practice. Apart from socio-cultural and religious relevance, traditional rice beers are believed to have significant nutritive and health benefits. Although distilled alcohol, wine and beer are readily available in the market, traditional alcoholic drinks continue to be widely used. However, local brewers are deprived of license due to lack of scientific knowledge and composition of these ethnic beverages. The locally produced alcoholic beverages have certain limitations like unpleasant odor, turbidity, toxic metabolites, texture and inconsistency which deteriorate the quality of beer. This creates hurdles in the commercialization of the traditional alcoholic beverages. Determination of the chemical composition and evaluation of the nutritive values of traditional alcoholic beverages are essential steps towards popularization of this commodity in other parts of the world.

Keywords: Traditional rice-beer, nutritional values, ethnic communities, north-east India.

* Department of Chemistry, Gauhati University
Email: dcdeka@rediffmail.com

The production and consumption of alcoholic beverages is an age-old practice. Rice beer is a type of alcoholic beverage prepared by fermentation of rice grains with yeast. The production of rice beers is quite popular in Asian countries and they are known by different names such as *shaosingiju* and *lao-chao* in China, *sake* in Japan, *chongju* and *takju* in Korea, *tapuy* in Phillipines, *brem bali* and *tape-ketan* in Indonesia, *khaomak* in Thailand, *rou nep than* in Vietnam and *tapai pulul* in Malaysia.

The history of man-made fermented beverages dates back to the Neolithic period (around 10,000 BC) as revealed from archaeological studies. Evidence of alcoholic beverages has also been found dating from 3150 BC in ancient Egypt, 3000 BC in Babylon, 2000 BC in pre-Hispanic Mexico, and 1500 BC in Sudan. Beer is one of the world's oldest and most widely consumed alcoholic beverage. The preparation of beers dates back to the early Neolithic period or 9500 BC, when cereal was first farmed. Chemical tests on ancient pottery jars reveal that beer was produced as far back as about 7,000 years ago in Iran. Some of the earliest Sumerian writings contain references to beer.

Beer was spread through Europe by Germanic and Celtic tribes in 3000 BC. The practice of adding hops in the brewing process was widely adopted in the Middle Ages. According to the *Reinheitsgebot* (purity law) the only allowed ingredients of beer were water, hops and barley.

Focusing on the Middle East and on Europe, alcoholic beverages were prepared by fermenting a solution of sugars obtained either directly from grapes or indirectly from cereals like barley, wheat or oats. However, varieties of traditional alcoholic drinks have been produced using other substrates by people belonging to different parts of the world. Many of these traditional alcoholic beverages are still popular among different tribes and communities all over the world. These home-made alcoholic beverages can be categorized as either beer or wine.

Today beer is mostly produced using barley as the substrate. But in the earlier days oats, rye and wheat were also used. Substrates like maize, millet and sorghum are still used to produce fermented beverages of Africa and South America. Alcoholic drinks prepared in Asian countries use rice as the source of carbohydrates.

In India, textual evidence reveals that rice beers were prepared and consumed first during the Vedic period (second millennium B.C.E.). In the north-eastern region of India, rice beer consumption and its preparation is a popular practice among the ethnic communities. It is an integral component in the socio-cultural

life of the tribal people. Consumption of alcoholic beverages is valued as a ritual and cultural as well as societal artifact. Widespread use of alcoholic beverages in merry-making, festivals, rituals, marriages and even in rituals on death are known. Man has learned to ingest it for gaining special bodily sensations. It has been a source of relaxation, intoxication to generate positive mood and to get relief from stress. It is addictive. Therapeutic and medicinal uses of rice beer are also known. Rice beer is believed to work against insomnia, headache, inflammation of body parts, diarrhoea and urinary problems, expelling worms and as a treatment against cholera.

The practice of preparation of rice wines, the common undistilled alcoholic beverage of eastern Asia, probably originated in China. Examples of rice wines include the Korean *makkoli* and the Japanese beverage *sake*. In Japan's first written history, *Kojiki*, compiled in 712 AD, sake is described as rice wine, but in reality it is more akin to beer. Rice wines are also prepared by many other tribes around the world, who either chew the grain and then spit it into the fermentation vessel or spit into a fermentation vessel containing cooked grain, which is then sealed up for fermentation to occur. Enzymes in human saliva convert the starch present in the grain into fermentable sugars. Traditionally, the process of fermentation was carried out by chewing the rice and spitting it into a vessel. Today the rice is treated with a mould/yeast starter (called *nuruk* in Korea, *koji* in Japan and *men* in Vietnam) that contains appropriate enzymes to catalyze carbohydrate breakdown and to perform fermentation.

Alcoholic beverages in the Indus valley civilization appeared in the Chalcolithic Era and were in use between 3000 BC - 2000 BC. *Sura* was a popular alcoholic drink among the *Kshatriya* warriors and the peasant population. It was prepared from rice meal, wheat, sugar cane, grapes, and other fruits.

The first breweries recorded as appointing chemists were the London firm of Truman, Hanbury and Buxton in 1831, and the firm of Allsop's in Burton-on-Trent in 1845. The job of the brewery chemists was to analyze the quality of the water supply, to monitor various aspects of the brewing process with the help of instruments such as the thermometer and hydrometer, and to tackle problems of infection and spoilage.

The rice beers in Assam are prepared entirely with traditional protocols which are passed from mother to daughters/ daughters-in-law, since time immemorial. The traditional protocols are the yeast inoculums in the fermentation process. The yeast starter cakes are prepared by mixing a wide variety of plant ingredients with boiled rice. The dried starter cultures normally include yeasts, moulds and

bacteria and convert starchy materials to fermentable sugars and subsequently to alcohol and organic acids.

Consumption and use of traditional rice beers in socio-cultural and religious activities amongst different ethnic communities of Assam and other states of north-east India are known for generations. Apart from socio-cultural and religious relevance, traditional rice beers are believed to have significant nutritive and health benefits. Although branded alcoholic beverages, wines and beers are readily available in the market, traditional alcoholic drinks continue to be widely ignored and are yet to be legalized for trading. Thus local brewers are deprived of their livelihood. To trade on any item license is a pre-requisite. Since the people, who are preparing traditional alcoholic drinks and trading on them, are not equipped with licenses, they are often harassed by the officials in authority. No scheme has been taken up by the government or corporate sectors to promote traditional alcoholic beverages. The problem in procuring trade license on traditional alcoholic beverages lies with the non-availability of scientific knowledge on these ethnic beverages, and therefore it is not possible to include them in any financial institution or small scale cottage industries.

Determination of the chemical composition and evaluation of the nutritive values of traditional alcoholic beverages are essential steps towards popularization of this commodity to other parts of the world. Evaluation of the various aspects of locally prepared alcoholic beverages such as traditional protocols for rice beer preparation, estimation of the nutritive and non-nutritive components, minerals and toxicity will be helpful in meeting scientific scrutiny. Because of their frequent use and widespread consumption, it is worthwhile to investigate these traditional alcoholic beverages so that they can be scientifically labeled and commercialized in the global market. No serious effort made in the past to evaluate the health benefits and economic prospects of these commodities could be traced. Keeping all these facts in mind, investigation in to the methods of preparation, social, cultural and economic importance, physicochemical composition and nutritional benefits of the rice beer samples collected from different parts of the state has been carried out in the Department of Chemistry, Gauhati University.

The protocols followed for rice beer preparation by the *Bodos*, *Deoris*, *Misings* and *Ahoms* have been recorded. There are differences in the choice of rice variety used as substrate for fermentation. Some plant varieties used for starter culture preparation are also different. The protocols followed in the production

of rice beers are not based on sound scientific knowledge. The fermentation is carried out in poor hygienic condition without any scientific knowledge, and this results in the short shelf-life and sometimes the poor quality of the rice beers. There is an urgent need for qualitative as well as quantitative evaluation of the rice beers for the benefits of the society in general and the consumers in particular. Complete physico-chemical evaluation of these rice beers is essential for commercialization. Commercialization of this commodity would surely help in uplifting the economic status of the rural people of the ethnic communities who earn their livelihood by selling rice beers and starter cakes. While it is generally accepted that the choice of the starter culture strongly influences the yield and quality of the beer, there is not much knowledge of the relationship between the microbial composition of starters and their performance. The limited knowledge about traditional starters poses an obstacle to industrial development and, thus, these starters have attracted the attention of researchers in food microbiology and technology, and in studies concerning the selection of safe and storable superior starters for small-scale fermentation processes. Moreover, the lead molecules responsible for the medicinal properties of rice beers, if identified, can become a boon in medicinal chemistry.

Physico-chemical properties like pH, acidity and ethanol content of traditional rice beers prepared by *Bodos*, *Deoris*, *Misings* and *Ahoms* in Assam are similar to those of commercial beer samples like *Fosters* and *Kingfisher*. However, colour, flavor and total solid contents of these rice beers are different from those of commercial beers. Rice beers contain good amounts of carbohydrate and protein. The carbohydrates and proteins present in the rice beers provide energy to the consumer and thus act as a refreshing drink after a day's hard toil. Thus, traditional rice beers, viz. *Jou*, *Sujen*, *Apong* and *Xaj* are not mere alcoholic entertaining beverages, these are essential components of regular foods used by hard-working farmers of the communities.

Metals in food and beverages have both nutritional value as well as toxicity. The concentrations of some metals, viz. sodium, potassium, chromium, manganese, iron, cobalt, nickel, copper, zinc, cadmium, and lead, have been estimated in alcoholic beverages traditionally prepared and consumed by ethnic communities of Assam (India). The estimated daily intake (EDI) of the traditional beverages was also evaluated and compared with the recommended dietary allowance (RDA). The EDI is well within the limits of the RDA. All of the samples examined can be considered safe for consumption and can be used as supplements of the essential metal nutrients such as potassium, manganese, iron and zinc.

The total phenol contents and the antioxidant activities of rice beer samples prepared by the ethnic communities of Assam have been investigated. The results reveal that rice beers of Assam exhibit good antioxidant activity and this may be attributed to the presence of different phenolic compounds. Our study reveals that the rice beers are potent sources of antioxidants, consumption of which in moderate quantity, can contribute towards well-being of human health.

The major volatile compound present in rice beer samples is ethanol. The four varieties of rice beers, viz. *Jou*, *Sujen*, *Apong* and *Xaj* contain ethanol to the extent of about 6% (v/v) that is drinking of 100 milliliters of the beer leads to consumption of about 6 milliliters of ethanol. Apart from ethanol, presence of a few more volatile and semi-volatile compounds in rice beer samples, albeit in trace levels, has been observed. Most of these trace compounds have biological consequences and hence their presence invites attention. Some of these trace compounds account for medicinal values of rice beers. A few of the trace compounds are known for their cytotoxicity and hence their presence in rice beer samples is disturbing. Presence of bioactive compounds like ephedrine, hordenine, myo-inositol and *p*-benzoquinone may be the sources of medicinal effects shown by rice beers and is likely to have a positive consequence on human consumption. However, presence of toxic components like ethyl N-hydroxycarbamate, pyrolan and propanenitrile, albeit in trace amounts, may lead to adverse effects on human health which may stand as obstacle in their promotion in the global market.

The Hindu Ayurvedic texts describe both the beneficial uses of alcoholic beverages and the consequences of intoxication and alcoholic diseases. Ayurvedic texts conclude that alcohol acts as a medicine if consumed in moderation, but a poison if consumed in excess. Recent studies reveal that light to moderate consumption of alcohol leads to decrease in coronary heart diseases, total and ischaemic stroke and total mortality in middle-aged and elderly men and women. Moderate alcohol consumption, according to the 2015–2020 Dietary Guidelines for Americans, is up to one drink per day for women and up to two drinks per day for men. In absolute terms, when quantity of alcohol consumed is <30 g/day, it is considered as light to moderate drinking, otherwise heavy drinking. However, drinking pattern, type of alcoholic beverage, gender and age are important parameters to be taken into consideration while defining light or moderate drinking. On the other hand, excess alcohol intake leads to a number of health problems and complications. Alcohol has been identified as a major risk factor for global burden of diseases. Some of the ill effects of alcohol consumption are accidents and injury, addiction, amnesia,

cardiovascular complications, drug/alcohol interactions (pharmaceuticals and drug abuse), gastrointestinal problems, hepatic disease, hypersensitivity, allergy and autoimmune responses, hypoglycaemia, malignancies, malnutrition, methanol toxicity, myopathy, nervous system exacerbations, osteoporosis, pneumonia, poisoning, psychological disorders, sexual exacerbations, infertility and fetal disorders, skin disorders, etc.

Ethanol and other components in traditional alcoholic beverages being unrecorded, several cases of toxicity due to the consumption of such alcoholic beverages have been reported. There are several cases of deaths of people due to methanol poisoning. Illicit alcohol is produced in small production units and is popular among the poorer section of the society. It is prepared from raw materials similar to those used for production of country liquor. With no legal quality control checks on them, alcohol concentration of illicit liquor varies (up to 56%). Adulteration is quite frequent, industrial methylated spirit being a common adulterant, which occasionally causes incidents like mass poisoning with consumers losing their lives or suffering irreversible damage to the eyes.

Apart from ethanol as the intoxicating molecule, higher alcohols (alcohol with more than two carbon atoms) occur naturally in alcoholic beverages as metabolites from bacterial activities. Higher alcohols are important flavor compounds and generally recognized as safe. However, issues have been raised recently about the percentage of higher alcohols in homemade alcoholic products as a few studies indicate that the presence of higher alcohol might lead to higher incidents of liver diseases.

Work cited:

1. K. E. Aidoo, M. J. Rob-Nout, and P. K. Sarkar, *FEMS Yeast Res.* **6**, 30 (2006).
2. M. Dietler, *Annual Rev. Anthropol.* **229** (2006).
3. A. J. Das, S. C. Deka, and T. Miyaji, *Int. Food Res. J.* **19**, 101 (2012).
4. B. Saikia, H. Tag, and A. K. Das, *Indian J of Traditional Knowledge* **6**, 126 (2007).
5. D. G. Mandelbaum, *Current Anthropology* **6**, 281 (1965).
6. B. Roy *et al.*, *J. of Human Ecology* **15**, 45 (2004).
7. D. Deka, and G. C. Sarma, *Indian J Traditional Knowledge* **9**, 459 (2010).
8. H. Samati, and S. S. Begum, *Indian J Traditional Knowledge* **6**, 133 (2006).

9. B. Tanti *et al.*, *Indian J Traditional Knowledge* **9**, 463 (2010).
10. K. Jeyaram *et al.*, *International Journal of Food Microbiology* **124**, 115 (2008).
11. N. T. P. Dung, F. M. Rombouts, and M. J. R. Nout, *Food Microbiology* **23**, 331 (2006).
12. M. J. R. Nout, and K. E. Aidoo, *The Mycota* (Springer-Verlag: Berlin-Heidelberg-New York, 2002).
13. C. D. Nwosu, and P. C. Ojmelukwe, *Plant Foods for Human Nutrition* **43**, 267 (1993).
14. H. P. Charles, and N. C. Durham, *Alcohol, Culture, and Society* (Duke University Press, 1952).
15. D. Cavalieri *et al.*, *J Mol Evol.* **57**, 226 (2003).
16. “*Fermented fruits and vegetables. A global perspective*”, FAO Agricultural Services Bulletins - 134.
17. H. Dirar, *The Indigenous Fermented Foods of the Sudan: A Study in African Food and Nutrition* (CAB International, UK, 1993).
18. “*Life’s Little Mysteries.com – When Was Beer Invented?*” *lifeslittlemysteries.com*.
19. J. D. Prince, *The American Journal of Semitic Languages and Literatures* **33**, 40 (1916).
20. J. Stuckey, “*Nin-kasi: Mesopotamian Goddess of Beer*” (Matrifocus, 2006).
21. J. A. Black, G. Cunningham, and E. Robson, *The literature of ancient Sumer* (Oxford: Oxford University Press, 2004).
22. L. F. Hartman, and A. L. Oppenheim, *Supplement to the Journal of the American Oriental Society* **10** (1950).
23. “*Prehistoric brewing: the true story*”. *Archaeo News*. 22 October 2001.
24. A. J. Buglass, *Handbook of Alcoholic Beverages: Technical, Analytical and Nutritional Aspects* (John Wiley & Sons, Ltd., 2011), p. 19.
25. “*492 Years of Good Beer: Germans Toast the Anniversary of Their Beer Purity Law*” *Der Spiegel*, 23 April 2008.
26. A. J. Buglass, *Handbook of Alcoholic Beverages: Technical, Analytical and Nutritional Aspects* (John Wiley & Sons, Ltd., 2011), p. 16.
27. Wikipedia (2007a) <http://en.wikipedia.org/wiki/Sake>.
28. S. Peele, and M. Grant, *Alcohol and Pleasure: A Health Perspective* (Psychology Press, 1999).

29. C. A. Russell, N. G. Coley and G. K. Roberts, *Chemists by Profession* (Open University Press, 1977)
- A. J. Buglass, *Handbook of Alcoholic Beverages: Technical, Analytical and Nutritional Aspects* (John Wiley & Sons, Ltd., 2011), p. 25.

WHY IS GENERAL RELATIVITY DIFFICULT?: A VIEWPOINT ON THE MOST INFLUENTIAL THEORY IN NATURAL SCIENCE

Dr. Sanjeev Kalita

Abstract

This article explores the reasons why Einstein's general relativity, a century old theory of gravitation which has passed all astronomical and laboratory tests, has been considered as formidably difficult theory. The basic reason is more of psychological or cultural in nature rather than being intrinsic. Guided by recent developments in astronomy and cosmology, the author presents the new meaning of difficulty in the theory.

1. Introduction

Einstein's general relativity (GR) is a theory of the all-pervading force of gravitation which governs our place in the universe. It explains movements of the planets around the Sun, distribution of stars in the sky, formation and evolution of stars in trillions of galaxies and the largest structures of galaxies embedded in infinite space. Einstein's theory, formulated by him in 1915, which is a completion of the old Newtonian theory, has described gravitation as a manifestation of geometry of space and time. Gravitation is a result of mutual

*Department of Physics, Gauhati University, Guwahati – 781014, Assam
e-mail: sanjeevkalita1@ymail.com*

interaction of the fabric of four dimensional spacetime and the matter-energy contents of the universe. Matter-energy produces stress in empty space, distorting it. Time, which is a smoothly flowing ‘river’ in classical physics gets ‘compressed’ and ‘stretched’ due to this distortion of space. This distortion of space and time affects the movements of physical objects in the universe. Such a relational philosophy which interrelates apparently disconnected pieces of things was absent in Newtonian world view.

The theory is summarised in the following way. Space and time participate in the cosmic symphony by responding to the dance of matter-energy, thereby enforcing matter-energy to react accordingly. In the language of John Wheeler, “Matter tells space how to curve and space tells matter how to move.”

A good scientific theory is the one which predicts several new phenomena which are observable and hence making it experimentally refutable. GR possesses this quality. It has predicted unusual phenomena which are foreign to the Newtonian version and given new pictures of the cosmos. Black holes, gravitational waves, slowing down of time near a gravitational field, bending of light near a massive object in space, origin of the universe in a Big Bang, dark matter and dark energy which are found to shape the galaxies and control the expansion of the universe are exotic predictions of the theory which were not foreseen even by the founder and his followers in the last century. With the advent of modern astronomy equipped with sensitive telescopes both in the ground and space, we have come to know about realities of these ideas.

Recent discovery of gravitational waves – tiny ripples in the fabric of spacetime emitted by merger of black holes has not only established prediction of the theory but also opened a new window to look into previously unexplored regions of the universe. In the coming years we may see a completely new and unexpected picture of the universe, by peering into heart of the black holes or into the earliest moments of the Big Bang.

Even after one century of its successful journey with experimental tests, GR, in its deeper level has still been considered as a formidably difficult theory in Natural Science. The mathematical language on which the theory is based is so foreign to the ordinary mathematics and so rich that people take years to digest the inner structure of the theory. What could be the reason? Why has it not been ruled out yet by experiments? Is it so close to truth?

2. A history of ‘difficulty’

A common lore goes in the following way to appreciate how challenging the theory was since the time of its inception. Ludwig Silberstein, a Polish – American theoretical physicist once asked Sir Arthur Stanley Eddington, the

British astronomer and relativist after a lecture delivered by Eddington, “Professor Eddington, you must be one of the three persons in the world who understands general relativity.” Eddington was silent for a moment. Silberstein said, “Don’t be modest, Eddington.” Eddington replied, “On the contrary, I am trying to think who the third person is” (Ferraira, 2014)!

In 1919, through an astronomical observation during a full solar eclipse in South Africa, Eddington confirmed GR by demonstrating that light coming from distant stars grazing over the Sun gets bent due to curvature of space near the Sun as predicted by the theory. However, the theory predicted phenomena well ahead of its time. It predicted “frozen stars” – the black holes or compact cold objects formed at the end of stars’ lives. It predicted an expanding universe. Lack of observational evidences of these phenomena made it difficult to accept the theory. The telescopes prevalent at that time were not powerful enough to look deep into space and unravel the new phenomena. The theory entered a “dark age”. The impression came to the general scientific community that GR is a no more than a playground of abstruse mathematics.

In early 1930s, Indian astrophysicist, Chandrasekhar proposed that stars heavier than a limiting mass should undergo continued gravitational collapse leading to black holes. Eddington, one of the staunchest supporters and leading authority of GR rejected Chandra’s idea claiming non-existence of such objects in Nature. Around 1939, American theoretical physicist, Robert Oppenheimer and his student Snyder calculated what would happen to a collapsing star. They found that the final state of collapse is a point of infinite density. Both Einstein and Eddington considered it as a beautiful mathematics and abominable physics! No approval from these two Es means the theory would be thrown into long grass. Due to lack of evidence of collapsed objects till 1960s, GR was considered as foreign to astronomy and was not taught to physics community even in the institution like Princeton.

In 1963, astronomers realised that GR has to be taken seriously. Marteen Schmidt, a radio astronomer observed explosive emission of radio waves emanating from a very compact region of the galaxy Cygnus A. In a Texas meeting of relativists and astronomers, it was settled that radio wave explosion from compact sources in the sky could be explained only if there is a supermassive star undergoing gravitational collapse. This was a twist in the history of GR.

Objects like Cygnus A are called quasars – Quasi Stellar Radio Sources. Quasars were found to be massive and so concentrated that Oppenheimer and Snyder’s idea had to be taken into account. Astronomers were convinced with the theory. GR had to be taken into the picture to make sense of newly observed

phenomena in the universe. The field of astronomy was enlarged by the annexation of the area of GR.

3. The maths culture or is it?

The most trivial answer to the question of difficulty of understanding GR is the underlying mathematics of differential geometry and curved spaces. These are non-Euclidean spaces. In physical theories it is found that richer the maths, simpler becomes the theory and larger is the number of its predictions of observable phenomena.

Mathematics is more of a culture than a subject. Irrespective of our disciplines of research and professions all of us have learned how to draw geometrical patterns such as circles, triangles, lines, curves , rectangles etc. in a two dimensional page. We have demonstrated that sum of the angles of a triangle is 1800, however, without asking further why it should be! This is the Euclidean geometry on which the physics of Galileo or Newton is established. It discusses movements of matter in the universe which is described by absolute 3 dimensional flat space and an immutable “time”. Space and time in pre-relativity science are absolute backgrounds on which events take place. They affect everything but never get affected by anything. Pre-relativity space and time, therefore, form an inactive rigid substratum.

“Difficulty” is a psychological process at least to substantial extent. Pre-relativity conception of space, time and matter buried in our mind produces a layer which prevents the mind from perceiving the elegant world as given by GR. We are habituated to maths based on a spacetime whose curvature is small and where particles move very slowly, thus bringing Euclidean geometry into our usual thought processes. These layers are, however, to be discarded as these are only approximations to a higher order but much simpler formalism. Therefore, in new frameworks it is suggested to work in a top-down approach of learning.

Had we started our childhood with non-Euclidean geometry of curved spaces these difficulties could not have occurred. In a top-down approach of learning one can deduce all the laws of physics and geometry from a much simpler and more general non-Euclidean spacetime. Therefore, it is not the maths culture, rather the layers of concepts created by a particular culture which creates difficulties in perceiving the elegant and unified descriptions of Nature.

To start with the elegant or simple or unified description early in our career, a non-trivial psychological change is necessary, probably some kind of “mutation” of the thought processes.

4. A good theory is humble

A good physical theory predicts its own failure. One of the conceptual difficulties with GR is that it has predicted situations where it is barely applicable. Examples are black holes and the Big Bang. **These are boundaries of spacetime with infinite energy density and heat where spacetime geometry has ruptures and perhaps lose its meaning!**

Black holes are the end points of evolution of stars heavier than the Sun. It has infinitely strong gravitational tug on everything in the universe including light. All things are trapped inside a black hole. On the other hand Big Bang is the primordial point of infinite heat and infinite energy which underwent colossal expansion heralding the beginning of the universe some 13.8 billion years ago.

The theory becomes undefined near a black hole or the Big Bang. It loses predictive power. As geometry of spacetime loses its meaning we do not have the slightest idea of how matter or energy moves. Time and space have beginning in the Big Bang! No dynamics, no laws of physics!

On the contrary, astronomical observations have revealed that the universe is populated by black holes. Every galaxy including our Milky Way has a supermassive black hole in the centre with mass of a million to billion Suns! Collision between smaller black holes gives rise to burst of gravitational waves which have recently been discovered. When stars are eaten by a black hole, swarm of hot gases of the stars emits energetic radiation as they fall into the black hole. These are X rays or gamma rays which are detected by space satellites such as the Chandra X ray observatory and Fermi Gamma Ray Telescope.

The relic heat of the Big Bang known as the Cosmic Background Radiation has been found to be all pervading in the universe. It has established that the universe emanated from a primordial phase of infinite heat. Tiny ups and downs in temperature of this radiation over the sky, calculated by using the basic framework of the theory have successfully explained the origin of galaxies in the universe.

Failure of GR near a black hole or the Big Bang has given rise to spectacular ideas to predict what lies beyond the beginning of time or what lies inside black hole. One such ambitious program is to provide a granular structure of space and time. Just as any matter is granular, being made of discrete atoms, space and time are assumed to have “atomic” structures in scales trillion times smaller than a normal atom (note that an atom is of size 0.000000001 cm!). In scientific community it is known as the quantum spacetime. Quantum spacetime

(“particles of space” or “particles of time”) is not yet matured enough to become a testable physical theory.

The question is why does spacetime look like the ones described by GR in the macroscopic universe? This question is going to push the theory beyond the horizon, to the next level of richness in the coming century.

Astronomers have yet to test the theory very near to a black hole. That is going to be the observing program of major astronomy projects of near future. Post 2020 era will see operation of extra-large telescope (with mirror size of 30 metre or more) which will be dedicated to test the theory near black holes or in very large scales of the universe. It will perhaps answer why the theory has been so successful or see if there is any alternative. We are beginning our true journey with GR only now!

5. Not having a theory of the universe!

We still do not have a theory for the beginning of the universe. Big Bang is a successful model only, parameters of which cannot be predicted as the theory of gravity fails in the initial moments of the universe. These quantities are inferred only from astronomical observations! If the theory is a failure during the universe’s birth, how does it give a correct picture in the present time, after 13.8 billion years of the Big Bang? The tension is the following. Several independent predictions of the theory for a given measurable quantity of the universe give rise to congruent results! If two uncorrelated experiments for one quantity give rise to similar values of the quantity, the theory with which the experimental data is analysed must be taken seriously. We still do not have a consistent answer to this aspect of the theory.

6. The dark universe of GR

If GR is correct then 96% of the universe is completely “dark”! Observation of movements of stars in galaxies or movements of individual galaxies in massive groups of galaxies has shown that these movements are too fast to be tolerated by gravitational grip of visible matter. In the framework of GR it inevitably demands existence of completely different types of matter whose additional gravity holds on the systems from disintegrating. Known as “dark matter” it is found to be nothing like atoms that we are familiar with. Till now we do not have a proper theory of “dark matter”. Neither we know what their particle contents are nor do we have the idea of their distribution in the galaxies.

Another mystery deepens the science of modern cosmology. Since the last century several observations have shown that we live in an expanding

universe. Empty space is inflating in all directions and galaxies are receding apart from one another. Within the framework of GR the expansion started with the Big Bang and is still continuing. Recent observations have shown that the cosmic expansion is speeding up, dethroning the expectation that it should slow down due to gravity of “dark matter” in the galaxies. The runaway cosmic expansion has called for an energy component which acts against gravitation – **a cosmic repulsion!** If GR is the correct theory of gravity this must be due to energy in empty space – the vacuum energy. This is commonly known as “dark energy”. We do not have the knowledge of why it should be. The energy in the vacuum is calculated by using the quantum theory of particles and is found not to look like anything inferred from the astronomically measured value!

Is it the signal that GR has some crack? We are not yet sure. All observational data make sense if we take “dark matter” and “dark energy” in our equations. However, we do not have a complete physical theory of these dark components. They constitute 96% of the energy budget of the universe. The “dark universe” is, therefore, another complexity that has arisen in the theory. This problem is going to survive as a major problem in astronomy and cosmology at least for coming 50 years or so!

7. “Marble” to “wood” or “wood” to “marble” ?

In his later years, Einstein tried to go beyond GR for a unified theory of all the forces of Nature. His motivation was to replace the quantum theory (Smolin 2015) which advocates that microscopic laws of particles constituting matter are based on uncertainty where cause and effect relations of physical events dissolve. Einstein was quite disappointed at this point. However, his geometrical path to forces of Nature was proved to be a failure.

Einstein’s equations of gravity connect matter-energy of the universe to geometry of spacetime. The former is “Wood” made of discrete particles whereas the latter is “Marble” – the geometrical structure of spacetime. Here lies the deep mystery of the theory. **We are equating things having different internal patterns!** One approach is to give a quantum description to geometry-conversion of “Marble” into “Wood”. This is the process of quantisation of geometry. The other approach is the one of Einstein – to give a geometrical pattern to the fundamental forms of matter. This is the process of converting “Wood” into “Marble”. Neither quantisation of geometry nor geometrisation of matter has yet been possible. This science will continue until we have a unique pattern of both the things.

8. Conclusion

The true journey of GR has recently begun, thanks to the runaway progress in theory and observations. The elegant mathematics of non-Euclidean geometry has given us a theory which has explained wide variety of phenomena in the universe and has produced challenging problems in science. We still do not know why the theory is so precise and at the same time gives way to unexpected avenues that may be lurking beneath the theory itself. The difficulty or intractability means that there more secrets hidden in the theory and much work is left to be done. This “difficulty” is going to broaden the existing horizons of the theory and create the new ones in the coming century.

Work cited:

[1] Ferraira, P. G. (2014): The Perfect Theory: A century of geniuses and the battle over general relativity: Little Brown (UK).

[2] Smolin, L. (2015): arXiv: 1512.07551

PUBLIC LIBRARY: A POWERFUL TOOL FOR SOCIAL CHANGE

Tilak Hazarika

Abstract

In order to ensure equal participation of the citizens in the process of nation development, the role of public libraries has been discussed. The role of a learned society is emphasized towards exercising democratic value and ethos in the light of the recommendations and guidelines of certain international bodies namely UNESCO and the IFLA. Traditional systems exists in the state of Assam in promoting a learned society is highlighted. The role of the *Namghar System* and *Moina Paarijat* is discussed with a focus on the powerful role played in formation and nourishing the social values in the society, and igniting the young minds, respectively. A roadmap for reaching out to the dream of an enlightened and learned society is portrayed. Discussions are restricted to Assam only drawing reference to the national and international context.

Key words: Public library, Information literacy, Sankardeva, Social change, Assam.

Assistant professor, Dept of Library and Information Science
Email: tilakdlis@gmail.com

Introduction

The whole world may conceptually be categorized into two groups on the information paradigm viz. the information rich and information poor. Information rich are the rulers while the information poor are the ruled class in the society. Those who have accessed to the treasures of knowledge of all forms, are in an advantageous position over the others, and this is the reason that the advantageous class establishes its hold over the all the resources for their comfort while keeping majority of the society away from due access to the resources by taking advantage of their ignorance. This is evident throughout the history of human civilization irrespective of time. A close look at the societal system in the Vedic period gives a clear evidence of the context, how access to education was enjoyed by a particular class and deprived the others based on the class system existed at that time. The story of *Ekalaabya* is one of the glaring examples of discrimination based on caste. Evidences of large scale social discrimination based on caste, creed, gender and other affiliations may be drawn from the different dynasty systems existing in precolonial india that lasted well into the attainment of independence. The rulers of the society at that time were very clever to apprehend the truth that as long as the majority of the society is not exposed to the treasures of knowledge, not properly educated, the ground is safe for the ruling class. This is till true today, though it exists in a different name and colour which is very difficult to apprehend. In this juncture, there is an utmost need to look closely into this and chalk out and anforce a system towards realizing the dream of a society where everyone gets an equal opportunity to grow up intellectually, become upright morally and socially committed and learn to analyze critically the practices going on round him/her. In order to ensure such a provision, the need of information literacy is discussed with a focus on the role of the public libraries, other community institutions and different programs functioning under the patronage of the government to this end. The study is however, confined in its scope to the state of Assam only.

Information literacy as a facilitator of democracy

The very foundation of modern democratic society rests on the equitable participation of the people in all the developmental processes sidelining all barriers emanging from caste, creed, gender and societal affiliations. This is possible through putting in place the right kind of systems and exposing the opportunities to all citizens of society to develop themselves in all endeavours of human development. Most importantly, a society which is enlightened up with information about all possible venture and moral, social and spiritual values,

is more likely to participate and march faster in the race for societal developmental. Obviously, with more and more knowledge about the past, present and a vision for the future, people become more equipped to participate in the exercises to explore new horizons of an egalitarian society. There is no doubt that an educated and learned society is the backbone and the core of democratic society. It is possible to inculcate the truth only in a society where majority of the citizen are enlightened with the power of rational thinking taking cognizance of the environment around him/her. Plenty of examples may be cited even from the state of Assam in the recent past of hatred, mistrust and violence which have had disastrous on the febric of Assamese society. To fight this, we need to develop the art of scientific thinking which invite the power of reasoning, rising above any kind of superstition, and refuses to subscribe to any kind of Guebloccian propaganda. One will admit that the dream of an egalitarian and enlightened society as envisaged can never be realized overnight, rather requires a lifelong endeavour and must be patronized through sustained efforts from all concerned under patronage of the state.

Role of UNESCO and IFLA in Promoting Public Library

Taking cognizance of the facts discussed above, the IFLA/UNESCO Public Library Manifesto (initially drafter in 1949 and ratified in the year 1994) regarded the public library as "...essential institution for promotion of peace and wellbeing spirit of humanity" and "... the local gateway to knowledge, provides a basic condition for lifelong learning, independent decision- making and cultural development of the individual and social groups". The said manifesto has urged upon all countries in the world to promote the public library system towards opening door to knowledge for all irrespective of caste, creed, gender, age and social status and has lined up comprehensive guidelines towards establishing a network of state run public libraries by enacting appropriate legislations by the national and local governments. The efforts of the IFLA (International Federation of Library Association) and the UNESCO have significantly boosted the library movement all over the world and libraries are growing as temples of human welfare and enshrining the nest of the very essence of men. The said manifesto bounded all countries in the world to create appropriate provision to make books and other reading material available to the citizens without any discrimination. IFLA has also termed the public libraries as "peoples' university" and regarded it as the post powerful instrument for exercising the true spirit of democracy (IFLA/UNESCO, 1994).

Age-old Social systems of information literacy in Assam

In Assam, the mass literacy movement was started as early as in the 15th century initiated by great saint Sankardeva through a number of ways. The *Namghar* system spread over during the Neo-Vaishnavite renaissance was one of the most powerful instruments to spread social and moral values in the society mostly among the illiterate masses. *Namghars* had been the place of assemblages and discussion of local issues of interest and thereby creating awareness among masses. Most importantly, it also played the role of a local court to solve most of the conflicts and disputes emanating among individuals or families in the society. The *Namghars* are the places to organize *Bhaona* (a form of drama introduced by Sankardava based on mythological characters from great epics viz. *Ramayana*, *Mahabharata* and *Kirtana*) which was instrumental in inculcate spiritual, moral and social values. There are number of instances where the rulers of the Ahom dynasty of Assam introduced a custom to make the history of the past known to all and thereby enlightened persons with a deep love for learning.

Another very effective and popular social institution in Assam flourishing during the 70s and the 80s is the *Moina Parijat*. It is a local social institution hosted by local clubs or community centres involving the learned citizens in the locality and organizes a range of programs viz. sports, dram, literary and alike particularly involving the school going teenagers in the weekends. The *Moina Parijats* were very instrumental and influential for the all-round development of a school going children particularly the teenagers. Along with cultural, sports, and other activities, good number of *Moina Parijats* had a library packed with books on various subjects to meet the mental stage of the teenagers, this was very effective in the creation of a reading habit at a tender age. The age old social systems even exist today, unfortunately, have loosened its vitality over time due to a number of factors.

Recognizing the fact that a literate and learned society is must to host and carry forward any exercise of social changes, the leaders of the Indian freedom struggle took initiative to establish public libraries in different places of the state particularly in the rural areas. Same initiative is evident in the time of Assam Agitation, as well. Local clubs and alike social institutions were the place to house such public libraries, but most of the libraries established could not sustaint housands due to a number of factors most important of which was the lack of any government support.

The Public Library Movement in Assam

Along with the rest of the country, the public library movement in Assam started with the Assam Library Association (Sadau Asom Puthibharal Sangha)

as early as in 1938 under the enthusiasm of Kumudeswar Borthakur, a secondary school teacher (Neog, 1964). The Association was successful in launching a new movement for reading books by establishing libraries in the state. Mention must be made of the great legendes of the time who extended their wholehearted support to the movement, namely, Lokapriya Gopinath Bordoloi, Dabeswar Sarma, Raghunath Choudhary, Benudhar Sarma, Harendranath Barua, Giridhar Sarma, Moheswar Neog, Tirthanath Sarma and many others including the Asom Sahitya Sobha. The association hold a number of annual conferences in different places of namely at Dibrugarh, Darrang, Golaghat, Nagaon, Jorhat, Mangaldai and at Guwahati and tried its level best to spearhead the library movement in the state. The 8th annual conference of the Association was held in Guwahati in the year 1964 wherein Dr SR Ranganathan, who is honoured as the Father of Library Science in India, participated and presented the proposal for a model public library bill for enactment by the state legislature. A comprehensive framework of the public library system for the state was so neatly drawn out so that the library network spread over from the state central library to panchayat level through district and sub-divisional libraries. Details of the financial as well as the manpower involvement were worked out and it was proposed to implement the whole setup of the library network in a phase manner. The bill was presented to the Govt. of Assam during his visit to the state. The proposal for public library network for Assam was based on a model public library bill drafted by Ranganathan himself and approved in the 5th national conference of the Indian Library Association held at Bombay (now Mumbai) in 1942 (Neog, 1964). As of now, there are 19 states in the country where the model public library bill has been enacted (with certain changes) by the state legislations and statewide library networks in place. Arunachal Pradesh, Manipur and Mizoram are the three states from North East India among the 19 in the country and the state wide public library systems are at different levels of implementation.

The latest initiative taken by the government in Assam towards the enactment of a legislation based public library system is the formation of a committee for drafting the Assam Public Libraries and Information Services Bill in the year 2002. The then Director of Library Services, Govt. of Assam Sri Bimal Kumar Hazarika was the convener and Prof. Narendra Lahkar of the Department of Library and Information Science, Gauhati University (DLIS,GU), the chairman and other two members (Sri Ram Goswami and Prof (retd) Alaka Buragohain DLIS,GU) formed the committee. Due to certain obvious reasons most important of which is the short stay of the ACS officers in the post of the Director, Library Services, the draft could be given the final shape in the year 2007, and accommodating the viewpoint of the Govt. finance department the bill was finally submitted in 2008 (Buragohain, 2017). The history

of pursuance of the bill for enactment in state is too long. Assam Library Association, Assam College Librarians Association and the DLIS, GU have been raising and pursuing the issue time and again at various levels of the state governments.

The Public library system in Assam at present

The Directorate of Library Services under the department of culture, govt. of Assam has a network of libraries with 251 libraries (Reference library 1 attached with the district library, Guwahati, 26 district libraries, 4 branch libraries, 16 sub-divisional libraries and 204 rural libraries). The computerization and other developmental of the district libraries are going particularly under the financial support of the Raja Rammohun Roy Library Foundation (RRRLF), a central autonomous organization established and fully financed by the Ministry of Culture, Government of India. However, the other libraries under the directorate are yet to receive proper attention. The spate of the rural libraries is even pathetic. Neither there are any proper trained librarian nor proper building, infrastructure and collection. These libraries are being manned by maximum two staff having minimum qualification of intermediate and 10th pass at the monthly salary of '900, and '250 only, respectively. *Sodou Asom Gramya Puthibharal Santha* (SAGPS) a socio-cultural non-governmental organization established in the year 1985, having its head office at Haibargaon, Nagaon, is carrying out commendable jobs in the promotion of public library movement in the state particularly in the rural areas. At present, there are nearly 900 libraries under its umbrella scattered in different districts in the state. It is to mention that along with promoting library movement, the SAGPS is carrying out a good number of social and cultural activities in the state (Sadau Asom Gramya Puthibharl Santha, 2014). Apart from the rural libraries either under the Directorate of Library Services, Govt. of Assam or the SGPS, there are oodles of rural libraries in the state running by different clubs and other local community centres. But the irony is that majority of the rural libraries are running sans basic infrastructure and resources to attract readers.

The roadmap ahead

There are different agencies working towards making information available to all. Government policy for e-government is one of the very effective and organized step towards bringing the government schemes and activities to the doorstep of the people even to the remote corners in the country. In order to realize this, the Common Service Centre (CSC) has been mooted and planed to establish in every district in the country under the technical support of the National Informatics Centre (NIC), Govt. of India. CSCs are proven to be

instrumental in bringing a range of e-service to the people at the easy reach. At present, there are 2418 SCs in Assam scattered in different district and it is reported that people are highly benefitted from the services (Common Services Centers (CSC) Project, 2016). The Chief Ministers Samagra Gramya Unnayan Yojana (CMSGUY) is a five year mega mission launched in Assam in the financial year 2016-17 with the objective to cover each revenue village through focused interventions in direct economic activities, logistic support into market linkages and community support. One of the critical areas identified in the CMSGUY is to promote e-Gram Mission by developing Village Knowledge Centre (VKC). Strengthening the traditional *Namghar* and community institutions is focused towards realizing the VKC (Government of Assam, Chief Minister Samagra Gramya Unnayan Yojana, 2017).

It has been observed that different organizations in the society have been taking initiatives to establish libraries with the broad objective to develop a learned society in general and to bridge the gap between the information and its users, in particular but succeeded to very limited extend. Numbers of schemes as discussed above are also running both under the central and state governments ultimately focusing on to realize the same objectives, as well. It is obvious that, today, there is no dearth of information, but what is lacking is the necessary infrastructure and logistics to access, evaluate and use information to a productive end. It is also observed that libraries established by different organizations in different time on volunteering basis could not survive due to lack of a persistent mechanism to extend necessary support, most importantly the financial support, which a local community or the organization concerned could not extend for a long time due to a number of factors. In this juncture, in-order to ensure the necessary support mechanism, government may consider for merging the public libraries, CSCs and the VKCs under one umbrella by lining up appropriate policy plan to this effect.

Conclusion

A learned society is the core asset towards cultivating and nourishing social values. A democratic society like ours can't succeed unless it ensures an equal participation of its citizens in the march to much needed social reform and accelerate all round development. It is true that today we are living in a large sea of information, accessible at ease of cost and efforts, but the pertinent question is where we are really information literate enough to evaluate, critically analyze and consume information resources towards a productive end. It may be true for a segment of the fortunate privileged few, but sure to return a negative result for the majority, more particularly in the rural cluster of our society. Access and consumption of information may always not ensure a positive return, equally important is to develop the art and skill to evaluate, select and

use right information at right time and to re-use the same towards a productive venture for betterment of self and the society at large. This is not obviously possible to attain overnight, but requires a life-long persistent exercise. A concerted effort from all concerned is must to put in place such a information provision accessible and affordable for one and all towards realize the very dream of a learned, egalitarian society.

Works Cited:

Buragohain, A. (2017). The Assam Public Libraries and Information Service Bill, 2008: with an introductory note. In Let Us Read Book (pp. 146-184). Guwahati: Assam Library Association.

Common Services Centers (CSC) Project. (2016). Retrieved March 12, 2018, from Common Service Centre: <http://csc.amtron.in/>

Government of Assam, Chief Minister Samagra Gramya Unnayan Yojana. (2017). Retrieved March 10, 2018, from e-Gram Mission : <https://mmscmsguy.assam.gov.in>

IFLA/UNESCO. (1994). IFLA/UNESCO Public Library Manifesto 1994. Retrieved March 09, 2018, from <https://www.ifla.org/publications/iflaunesco-public-library-manifesto-1994>

Neog, M. (1964). Libraries and Library Movement: presidential address. Souvenir on Library Science: 8th Conference, All Assam Library Association. Guwahati: Assam Library Association.

Sadau Asom Gramya Puthibharl Santha. (2014). Retrieved March 10, 2018, from www.sagps.org.in

MIRZA GHALIB, A PIONEER OF INDO-PERSIAN POETRY

Dr Md Baharul Ali

Abstract

Persian has been a major vehicle of expression in India during the medieval period specially during the Mughal rule. In poetry as well as in many branches of knowledge it has been producing remarkable works. It has produced a number of eminent historians, biographers, lexicographers and also of course, a few poets, whose works even today are held in esteem in both India and Iran. With its glorious history, of it has developed a tradition and with a specific hue and texture, largely Indian in character and capable of appealing mainly to the Indian mind. The works thus produced in missing link reflect the urges and aspirations of the Indian people which, again, can best be appreciated by the scholars of the soil. Mirza Ghalib was a product of the Indian soil as much as Kabir, Tulsidas etc were. In this paper a vivid discussion will be made to highlight the important events related to the life of Ghalib with emphasis on his poetic career.

Key words: Ghalib, Persian, Biography, poetry, letters.

Mirza Ghalib was born in 1797 at Agra. He was a descendent of the Aibaks, a clan of the Turks from central Asia. The grandfather of Ghalib Quqan Beg, migrated from Samarqand to India. He had two sons, namely Abdullah Beg Khan and Nasrullah Beg Khan; the former being the father of Ghalib. Abdullah Beg Khan lived at Agra and his two sons, Mirza Asadullah Khan Ghalib and Mirza Yusuf Khan, a daughter Chhoti Khanam were also brought up at the same place. After the death of Asadullah Beg Khan his uncle, Nasrullah Beg Khan, had to look after Ghalib and his mother.¹

Ghalib spent his childhood in a great luxury at Agra in the house of his maternal grandfather. He played all day long with the sportive boys and lived an utterly uninhibited life with the reckless companion of his age. References to his recklessness are to be found in the letters which he wrote to his inmate friends later on.² Ghalib was a learned man of his time. Apart from the literary achievements in which he was unsurpassed, he also claimed a profound knowledge of astronomy, philosophy, mysticism and the science of medicine, and some of his *qasidas*³ speak eloquently of them.

Some of the distinguished Persian scholars like Mulla Wali Muhammad, Mawlawi Muhammad Kamil and Mawlawi, Muhammad Mu'azzam lived in the locality of Ghalib at Agra. Ghalib received his early education from the latter who was well versed in all branches of the current sciences. Mulla Abdus samad, a Zoroastrian convert, was also one of Ghalib's teachers. Ghalib's uncle, Mirza Nasrullah Beg, was an officer in the British army at Agra, getting a salary of seventeen hundred rupees per month. In addition to this he had received two *parganas* for the maintenance of his brigade, which brought him an annual income of one hundred and fifty thousand rupees. On his death this property merged with the estate of Firuzpur Jirkha, and his dependents were allotted a life-pension by the British Government that was payable from the same estate. As Ghalib was also a dependent of Nasrullah Beg, he too received an annual pension of seven hundred rupees. Ghalib was married to Umrao Begum in 1810, the daughter of Elahi Baksh Khan Ma 'ruf, a brother of Ahmad Baksh Khan, Nawab of Firuzpur Jirkha. He used to come to Delhi frequently after his marriage and ultimately, in 1812 permanently settled down in Delhi. Delhi was a great seat of learning at that time. Ghalib's father-in-law was a learned man and was keenly interested in mysticism and poetry. He further introduced Ghalib to eminent scholars like Mawlana Fazl-i-Haq Khairabadi. The Mawlana made Ghalib conscious of the responsibilities of a great poet. The artificial style and verbosity of his early writings under the influence of Bedil begins to give way to a simple diction, more easily understandable to the common reader. This change in style was really change in outlook. Ghalib, had developed a realistic outlook on life and simple and effective style of writing more in harmony with

the new outlook. There was a growing awareness of contradictions of experience reflected in the terseness of style.⁴

The journey of Ghalib to Calcutta which he undertook in connection with his pension dispute is one of the important event of his life. Originally, the amount of pension that was required to be paid to the dependents of Nasrullah Beg was ten thousand rupees a year. But Nawab Ahmad Bakhsh Khan Fakhrud-Dawla secured another order from Lord Lake and reduced the amount to five thousand rupees a year out of which Ghalib's share came to seven hundred rupees per anum only. This amount did not meet Ghalib's requirements and hence he was always in financial trouble. In the meantime, Nawab Ahmad Baksh Khan retired from active life leaving the estate to his eldest son, Nawab Shamsuddin Ahmad Khan, who was not on good terms with Ghalib. He penalised Ghalib by frequently withdrawing the payment of the pension. These were bad days of Ghalib. He had no money even to meet the bare necessities of life. His creditors had lost faith in his ability to pay and stormed his house to recover their dues. About this time the, his younger brother, Mirza Yusuf, went insane, placing Ghalib in a serious mental and financial crisis. These mishaps coupled with feeling of injustice meted out to him, impelled Ghalib to file a suit against the Nawab in the Supreme Court at Calcutta. Ghalib was about thirty years old when he left for Calcutta via Lucknow and Benaras. He was accorded a warm welcome on his arrival in Calcutta. Stirling, the Secretary to the Government of India, gave him a sympathetic hearing and promised to help him.⁵The matter was referred to Sir John Malcom, Governor of Bombay, who happened to be the Secretary of Lord Lake at the time of the award of the pension in dispute. Unfortunately, Malcom's report went against Ghalib, and the case was dismissed. Ghalib did not lose all hope and appeared to the court of Directors and subsequently sent a petition to Queen Victoria. All his efforts, however, ultimately failed and he gave up his struggle in 1844. For about twenty years Ghalib was forced to stay in Calcutta, and he got an opportunity to move in the literary circles of the city. A special *Mushaira* was arranged in his honour in the building of the *Madrassa-i- Alia* maintained by the East India Company.⁶

The reputation of Ghalib as a great Persian scholar had spread all over the country, and he was offered a Professorship of Persian at the Delhi College in 1842. As Ghalib's employer did not come out to receive him, he took it to be an insult and returned home without an interview. In the 1847 Ghalib was arrested on the charge of gambling and was sentenced to six months' rigorous imprisonment and a fine of two hundred rupees to boot. Nawab Mustafa Khan Shifta was very helpful during the days of imprisonment, and he personally went to see Ghalib on many occasions. Letters written during this period speak of his deep disgust with life. Ghalib entered the royal service in 1850. It was his

age old dream, but for one reason or the other he had failed to win the royal approbation till this time. Quite a number of *qasidas* written in praise of Bahadur Shah bear evidence of the fact that the king was not quite happy with Ghalib and gave him little encouragement.

After this Ghalib succeeded in getting a job at the Red Fort. He was appointed on a salary of fifty rupees per month and assigned to write the history of the Timur, the title of Najmud-Dawla Dabirul Mulk, Nizam-i-Jang was also conferred on him on the same occasion. A few years later in 1854, Ghalib became the teacher of Bahadur Shah Zafar as well as Mirza Fakhru, the heir-apparent to the throne. Financially this period was auspicious for Ghalib., since he was receiving money from the king. The outbreak of the 1857 Rebellion further added to his financial worries, as his pension was also stopped on account of the disturbances. Life all over the country was paralysed and Delhi was the worst sufferer. Ghalib was living at Balli Maran at that time. This locality was. Fortunately, guarded by the soldiers of the Maharaja of Patiala and Ghalib remained mostly confined to his house during the reign of terror. His expenses during this period were borne by his Hindu friends especially by Munshi Har Gopal Tafta. Also Nawab Ziaud-Din Ahmad Khan sanctioned fifty rupees per month to Ghalib's wife, Umrao Begum, which she received till her death.

Ghalib used to read the *Burhan-I Qate*, the famous lexicon by Mawlawi Muhammad Husain of Deccan to pass away his time during the disturbances and in the course of reading, he underlined and corrected many errors in this book which he later collected and published under the title of *Qate-i- Burhan* in 1862. Authorities like Hafiz Muhammad Shirani and Qazi Abdul Wadud do not have favourable opinion regarding this book. Ghalib also tried to become the *Poet-laurate* of queen Victoria and requested the publication of his book *Dastanbu* at Government expense, but the request was not acceded to. His pension however was restored in a May, 1860. Ghalib made two journeys to Rampur, one at the invitation of Nawab Yusuf Ali Khan, in the beginning of 1860, and the other on the occasion of the Nawab's death in the autumn of 1865. Ghalib had undertaken the second trip in the expectation that the new Nawab would oblige him with large amount on the occasion of his accession so he could be relieved of his age –old financial worries. The expectation did not materialize, and he returned to Delhi disappointed and exhausted by the tiresome journey.

Ghalib was a victim of chronic constipation from an early age. During his youth, marked by over indulgence, he neglected his health. His life-long addiction to drink had an adverse effect on his health, especially in his declining years. His already deteriorating health broke down after the tiresome journey of Rampur. From this time onwards he remained mostly confined to bed. He

developed deafness and his eye-sight also grew weak. But in spite of this confinement, his literary activities did not cease. He exchanged letters with friend and disciple's and made correction in their ghazals. He died in Delhi on the 15th of February, 1869, after a prolonged illness.

Ghalib as a Poet:

Ghalib's Persian poetry, the last great work of art produced in the context of cultural pattern, deserves our close and respectful attention. Its influence on our culture and literature has been deep and far reaching. In addition to being a masterpiece of artistic thought and expression and therefore a thing of intrinsic value, it marks the tradition from the Medieval period to the Modern age in India. For it was in Ghalib that, for the first time in the history of arts and letters in Medieval India, a deviation from traditional modes of thought took place, giving way to a scientific outlook.⁷

Ghalib started composing poetry at the age of 11. His first language was Urdu, but Persian and Turkish were also spoken at home. He got his education in Persian and Arabic at a young age. When Ghalib was in his early teens, a newly converted Muslim tourist from Iran (Abdus Samad, originally named Hormuzd, a Zoroastrian) came to Agra. He stayed at Ghalib's home for 2 years. He was a highly educated individual and Ghalib learned Persian, Arabic, philosophy, and logic from him.

Although Ghalib himself was far prouder of his poetic achievements in Persian, he is today more famous for his Urdu ghazals. Before Ghalib, the ghazal was primarily an expression of anguished love; but Ghalib expressed philosophy, the travails and mysteries of life and wrote ghazals on many other subjects, vastly expanding the scope of the ghazal.

In keeping with the conventions of the classical ghazal, in most of Ghalib's verses, the identity and the gender of the beloved is indeterminate.⁸

He was a gifted letter writer. His letters gave foundation to easy and popular Urdu. Before Ghalib, letter writing in Urdu was highly ornamental. He made his letters "talk" by using words and sentences as if he were conversing with the reader. His letters were very informal, some times he would just write the name of the person and start the letter. He himself was very humorous and also made his letter very interesting. Some scholar says that Ghalib would have the same place in Urdu literature if only on the basis of his letters.

Works cited:

1. Kirmani Waris (1972) Evaluation of Ghalib's poetry, The Aligarh Muslim University Press, Aligarh, India), p-1)
2. Khutut-I Ghalib (see letters Ali Mehr) p 228-229).

3. (a kind of classical persian poetry)
4. Kirmani Waris (1972) opcit, p.2
5. Ghalib (1872 Kulliyat-i- Nazm-i Farsi, Nawal Kishore Press, Luknow, p. 167).
6. Kirmani Waris (1972) ibid, p.170)
7. KirmaniWaris, opcit, Introduction)
8. <https://www.poemhunter.com/mirza-ghalib/biography/>

NUCLEAR HAZARDS VS NUCLEAR ENERGY

Kushal Kalita

Abstract

The Nuclear hazards have become an important problem across the globe after conducting any fission/fusion experiments for the generation of energy in reactors or in any experimental facilities. Proper care must be taken not just to expand its hazardous effects to human and animals. The general knowledge of its use for its radionuclides should be known to the common people. The energy production of nuclear power plants is a long awaited dream for India. Some of the production methods with Indian three stage program and its prospects are highlighted in this paper. However, it could take a long way to get final production of nuclear energy because of many factors- local people protest, international pressure and possible accident that may take place. Despite all this, however, for a country like India, It is a must for the future.

Keywords: Nuclear hazards, nuclear energy, fission, radionuclides, safety concern.

Physics Department
email: kkalita@gauhati.ac.in

Introduction :

The main sources of environmental concern are the nuclear weapons, nuclear power reactors and heavy radioactive sources of various research facilities in the present day. A number of nuclear explosions have been carried out during the recent past in different parts of world. Judgments come in its ethics of practice on why the tests are conducted, injecting substantial amounts of radioactivity into the environment. Nuclear explosions are very rapid and based on a rough estimate, in an explosion about 51% of the energy goes to the blast, 32% as heat and the other 17% or so goes to radioactivity.

The hazards of radioactive materials cannot be detected by the sense organs of human beings except in massive doses, it is only possible by the use of detectors. The radioactive waste from nuclear plants may be in form of gases, liquids or solids. The other important concern for radiation is that there is no suitable and cheap method of storing the radioactive waste. The natural radioactivity or the artificial radioactivity creates radioactivity which escape as waste and mix with water bodies, concrete cases and salt formations in high mountains. Sometimes the nuclear waste is leached into the biosphere. One of the most long-lived fission products and the most hazardous are Strontium-90 with a half life of 28.9 years and caesium- 137 (with half life of 30.2y). The gaseous fission product iodine-131 (8.1 days) is also hazardous in the event of its leakage during reactor operation. The toxic material of plutonium (24,100y) is another reactor product. All these elements enter the human system and are deposited in various parts of the body causing cell damage. In laboratories Sr-90 is mostly used which is beta-active element. Radionuclides have become distributed throughout the environment and can be transmitted to human beings via the food chain. When taken in by humans, some radio nuclides may be concentrated in specific organs where they become stored and can injure our health severely.

Nuclear reaction is the source of electricity:

Nuclear Energy is the power produced during a nuclear reaction. The energy released from a change in the nuclei of an atom produces energy known as nuclear power. This power can be produced in two different ways- by nuclear fission and nuclear fusion. Nuclear energy that is produced naturally is the energy produced from the sun and the stars, which releases light and heat and warms the planet. Fission is the process of splitting the nuclei of atoms (usually uranium atoms) by shooting neutrons at them. Nuclear fusion, on the other hand, is the process of joining the nuclei of two atoms together. The energy produced in the sun uses fusion to produce heat and it can make a hydrogen bomb for national security- where two hydrogen atoms combine to produce helium, thereby releasing large amounts of energy, producing a huge

explosion. The fission reaction has been harnessed in a facility of nuclear reactors to produce electricity. Nuclear reactors produce 14-15 % of the world's electricity in nuclear power plants, and accounts for 7% of the world's energy. France and Japan alone generate electricity in large extent (49%). The America also has been producing 20 % of its electricity from nuclear power from nineteen century.

There is a debate around using nuclear power world wide. It is regarded by many as a clean energy source. The Clean Air act of 1970 puts limits on the amount of nitrogen oxide that can be released into the air because nitrogen oxide is a precursor to smog and sulfur dioxide, which lead to acid rain. These are usually pollutants produced by coal-generated electricity. Nuclear Power plants, however, do not release these pollutants, and for this reason nuclear energy is America's number one source of clean energy. If we talk little more on US, it has 66 active power plants and 103 reactors across the country; thirty-one states have nuclear reactors. Each plant produces varying amounts of electricity depending upon the number of reactors. The Palo Verde plant in Arizona, has three reactors and, thus, the potential to produce 3,942 megawatts in 2010. Similarly, Fort Calhoun in Nebraska has a single reactor and the smallest generating capacity producing 478 megawatts. Japan is looking to ramp down its use of nuclear power due to the nuclear accident caused by a tsunami that occurred at Fukushima Daiichi in 2011. At least 56 Tsunami have occurred in the US, but the US has not responded by closing down plants, but they have taken steps to make the nuclear reactors safer.

Sources of nuclear energy in India:

The isotope of uranium (U-235) is required for a fission reaction and is only available in Jadugoda, Jharkhand. There is also evidence clue that the khasi hills of Meghalaya is a strong source of uranium, but due to local tribal agitation, it could not be explored. The Uranium Corporation of India (UCIL) has taken up activities to start two underground mines in Jharkhand. Uranium reserves have been found in the state of Andhra Pradesh and the construction of an underground mine has started in Cuddapah district. There was criticism from certain sections of the local community that the mining operations of UCIL were resulting in harmful radiation to the public. However medical surveys later conducted showed no proof for the claim and showed that the cancer incidence in the area was less than one-third of the national average. Large deposits of natural uranium, which promises to be one of the top 20 of the world's reserves, have been found in the Tummalapalle belt in the southern part of the Kadapa basin in Andhra Pradesh in March 2011. The Atomic Minerals Directorate for Exploration and Research (AMD) of India, which explores uranium in the country, has so far discovered 49,000 tonnes of natural

uranium.

Internationally, Kazakhstan, Canada, and Australia are the top three producers and together account for 63% of world uranium production. Other important uranium producing countries in excess of 1000 tonnes per year are Namibia, Russia, Niger, Uzbekistan, and the United States. A prominent use of uranium from mining is as fuel for nuclear power plants. Presently USA is supposed to supply uranium to India, but they want to visit the activities that take place in Indian reactors.

Nuclear power plant in India:

Nuclear power is the fourth-largest source of electricity in India if we consider thermal, hydroelectric and renewable sources of electricity. As of 2012, India has 20 nuclear reactors in operation in six nuclear power plants, having an installed capacity of 4780 MW and producing a total of 29,664.75 Gigawatt of electricity while seven other reactors are under construction and are expected to generate an additional 6,100 Megawatt. India drew up “an ambitious plan to reach a nuclear power capacity of 63,000 MW in 2032” in October 2010. After the 2011 Fukushima nuclear disaster in Japan, Indian Nuclear Power Plant sites have launched protests, raising questions about atomic energy as a clean and safe alternative to fossil fuels. There have been mass protests against the French-backed 9900 Megawatt Jaitapur Nuclear Power Project in Maharashtra and the Russian-backed 2000 Megawatt Kudankulam Nuclear Power Plant in Tamil Nadu. The government of West Bengal state has also refused permission to a proposed 6000 MW facility near the town of Haripur that intended to host six Russian reactors. A Public Interest Litigation (PIL) has also been filed against the government’s civil nuclear programme at the Supreme Court.

Despite this movement, the capacity factor of Indian reactors was at 79% in the year 2011-12 compared to 71% in 2010-11. Nine out of twenty Indian reactors recorded an unprecedented 97% Capacity factor during 2011-12. With the imported uranium from France, the 220 Megawatt Kakrapar 2 PHWR reactors recorded 99% capacity factor during 2011-12. The Availability factor for the year 2011-12 was at 89%.

Now India has been making advances in the field of thorium-based fuels, started work on design and develop of a prototype atomic reactor using thorium and low-enriched uranium, a key part of India’s three stage nuclear power programme. This was the dream of Dr. Homi J. Bhabha, father of Nuclear Physics. The country has also recently re-initiated its involvement on fusion power aspect through the international thermonuclear experimental reactor (ITER) initiative in France.

India's three-stage nuclear power programme:

The realization of Dr. Homi J. Bhabha's dream has been targeted by the use of uranium and thorium reserves found in the monazite sands of coastal regions of South India. The ultimate focus of the programme is on enabling the thorium reserves of India to be utilised in meeting the country's energy requirements. Thorium is particularly attractive for India, as it has only around 1–2% of the global uranium reserves. The Indian nuclear establishment estimates that the country could produce 500 Gigawatt for at least four centuries using just the country's economically extractable thorium reserves.

In the year 2012, the first stage consisting of the pressurised heavy water reactors (PHWR) is near completion of its planned goals, the second stage consisting of fast breeder reactors (FBR) is supposed to go into operation within one year, and the third stage consisting of advanced heavy water reactors (AHWR), as one among several technology options, is slated to begin construction so that its commissioning can be done by 2020. The recent Indo-US nuclear deal and the NSG waiver, which ended more than 3 decades of international isolation of the Indian civil nuclear programme, have created many hitherto unexplored alternatives for the success of the three-stage nuclear power programme.

In the first stage, natural uranium fuelled pressurised heavy water reactors (PHWR) produced electricity while generating plutonium-239 as by-product. PHWRs was a natural choice for implementing the first stage because it had the most efficient reactor design in terms of uranium utilisation, and the existing Indian infrastructure in the 1960s allowed for quick adoption of the PHWR technology. India correctly calculated that it would be easier to create heavy water production facilities (required for PHWRs) than uranium enrichment facilities. Natural uranium contains only 0.7% of the fissile isotope uranium-235. Most of the remaining 99.3% is uranium-238 which is not fissile but can be converted in a reactor to the fissile isotope plutonium-239. Heavy water (deuterium oxide, H₂O) is used as moderator and coolant.

All the entire existing base of Indian nuclear power (4780 MW) is composed of first stage PHWRs, with the exception of the two Boiling Water Reactor (BWR) units at Tarapur. The installed capacity of Kaiga station is now 880 MW, making it the third largest after Tarapur (1400 MW) and Rawatbhata (1180 MW). The remaining three power stations at Kakrapar, Kalpakkam and Narora all have 2 units of 220 MW, thus contributing 440 MW each to the grid. The 2 units of 700 MWe each (PHWRs) that are under construction at both Kakrapar and Rawatbhata, and the one planned for Banswara would also come under the first stage of the programme, totalling a further addition of 4200 MW. These additions will bring the total power capacity

from the first stage PHWRs to near the total planned capacity of 10 Gigawatt called for by the three-stage power programme.

The second stage is called fast breeder reactors (FBRs) would use a mixed oxide (MOX) fuel made from plutonium-239, recovered by reprocessing spent fuel from the first stage, and natural uranium. In FBRs, plutonium-239 undergoes fission to produce energy, while the uranium-238 present in the mixed oxide fuel transmutes to additional plutonium-239. Thus, the Stage II FBRs are designed to “breed” more fuel than they consume. Once the inventory of plutonium-239 is built up thorium can be introduced as a blanket material in the reactor and transmuted to uranium-233 for use in the third stage.

The design of the country’s first fast breeder, called Prototype Fast Breeder Reactor (PFBR), was done by Indira Gandhi Centre for Atomic Research (IGCAR). Bharatiya Nabhikiya Vidyut Nigam Ltd (Bhavini), a public sector company under the Department of Atomic Energy (DAE), has been given the responsibility to build the fast breeder reactors in India. The construction of this PFBR at Kalpakkam was due to be completed in 2012. It is not yet complete. A start date in 2015 has been suggested. In addition, the country proposes to undertake the construction of four FBRs as part of the 12th Five Year Plan spanning 2012–17, thus targeting 2500 MW from the five reactors. One of these five reactors is planned to be operated with metallic fuel instead of oxide fuel, since the design will have the flexibility to accept metallic fuel, although the reference design is for oxide fuel.

In Stage III reactor or an Advanced nuclear power system involves a self-sustaining series of thorium-232-uranium-233 fuelled reactors. This would be a thermal breeder reactor, which in principle can be refueled – after its initial fuel charge – using only naturally occurring thorium. According to the three-stage programme, Indian nuclear energy could grow to about 10 GW through PHWRs fueled by domestic uranium, and the growth above that would have to come from FBRs till about 50GW. The third stage is to be deployed only after this capacity has been achieved. It is long way to go, we hope for the best.

Conclusion:

With the limitation of conventional energy source one has to choose for the scope of nuclear energy option for India. At the same time the common people should be made aware on about the radioactive hazards and its safety concern. We have to think for the next generation to keep some alternative source of power- where nuclear fission or fusion can play a vital role. Once India’s power problem is sort out through a three stage nuclear programme, the GDP will increased automatically. GDP directly has a link with a developed

country. Therefore, we must go for nuclear clean energy in addition to the conventional energy sources to prosper at the level of China, USA and the rest.

Work cited:

- <https://en.wikipedia.org/Nuclear-power-in-India>
- B. K. Nayak talk (private), NPD, BARC, Mumbai

MENTAL HEALTH PROMOTION OF STUDENTS : ROLE OF COUNSELING AND THE LEGAL POLICIES IN INDIA

Dr. Moyuri Sarma

Abstract

Mental health indicates the integration of psychological, emotional and social harmony within the person. It implies an individual's quality of life and his/her general well-being. Today, mental health is given the utmost importance because one's mental health condition may prevent him/her from performing well in different fields. The mental health of students in institutions, though often overlooked, is an extremely relevant issue for today's educators. If ignored, mental health problems can impede social development, leaving young people feeling socially isolated, stigmatized and unhappy. This paper attempts to draw attention to the contributing factors leading to mental ill health of students and to put forward certain suggestive measures for promoting positive mental health among students. Further, the paper attempts to enquire the existing policy, programmes and legal provisions in respect to students' mental health issues in India.

Keywords: Mental health and hygiene, mental health challenges of students, counseling, legal rights, parents, teachers

Assistant Professor, Department of Education
Gauhati University

“What will transform education is not another theory or another book or another formula, but a transformed way of being in the world—a life illuminated by spirit and infused with soul” — Parker Palmer.

Introduction:

Mental health refers to the psychological, emotional and social well-being of a person. It determines the way to handle stress and strain relate to others and their own. Mental health occupies a prominent role in the modern fast pacing world. Body and mind constitute the substrata of disease and happiness i.e. positive health. Being mentally healthy is an important aspect of our lives, especially in current competitive arena and opportunities in various fronts. In keeping with the WHO initiatives, mental health is being promoted across countries, mostly through bolstering already established public health services.

The mental health of students in institutions is often overlooked, yet extremely relevant issue for today’s educators. If ignored, mental health problems can impede social development, leaving young people feeling socially isolated, stigmatized and unhappy. An existing avenue for promoting mental health can be advocated at the school level, through the assistance of a counselor in institutions to cope with scholastic pressure and emotional stress. Some mental disorders such as Learning Disabilities and Attention Deficit Disorder, Hyperactivity Disorder put unique and specific challenges to optimize learning outcomes. In severe cases some students develop socially or personally inappropriate behavior, such as school dropout or heavy use of illicit drugs and other intoxicated substance. Thus it is high time to recognize and address these problems and to appropriately refer these students to health professionals for treatment. Hence, this paper attempts to draw attention to the contributing factors leading to mental ill health of students and to put forward certain suggestive measures for improving the conditions for enhancing positive mental health among them.

Objectives of the study:

1. To understand the concept of mental health and hygiene.
2. To explore the mental health challenges of students.
3. To enquire the factors affecting mental health of students.
4. To understand the role of Counseling on mental of health of students
5. To evaluate the existing policy, programmes and legal provisions in respect of students mental health issues.

Concept of mental health and hygiene:

Mental health is not just the absence of mental illness. It is defined as a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community (WHO, 2007). The positive dimension of mental health is stressed in WHO's definition of health as contained in its constitution: "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" This fact highlights the important aspects of mental health and disorders. Therefore, mental health is all about how we feel about ourselves, how we feel about others and how we are able to meet the demands of life. Good mental health is a sense of wellbeing, confidence and self-esteem. It enables us to fully enjoy and appreciate other people, day-to-day life and our environment. When we are mentally healthy we can: form positive relationship, use our abilities to reach our potential and deal with life's challenges.

From the above discussion it is apparent that mental health has two important aspects. It is both individual and social. The individual aspect connotes that the individual is internally adjusted. He is self-confident, adequate and free from internal conflicts and tensions or inconsistencies. But he achieves these internal adjustments in a social set up. Society has certain value systems, customs and traditions by which it governs itself and promotes the general welfare of its members. It is within this social framework that the internal adjustment has to be built up. Only then, the individual becomes a person who is acceptable as a member of society.

The concept of Mental Hygiene is slightly different from mental health. It is a science which deals with the process of attainment and preservation of mental health in the society. Both the terms mental health and hygiene are closely related as the main objective of mental hygiene is to attain mental health. In other words mental hygiene is the means and mental health is the end.

The History of mental hygiene is as old as our civilization. In India, Ayurveda successfully developed a fully fledged system for treating the mentally ill people. Ayurveda suggests the ways to secure one's mental hygiene through appropriate diet, regimen and medicine. There are numbers of procedure like Yoga, Panchakarma by which mind can be protected i.e. can be kept free from being polluted. However, in the west the mental hygiene movement was started in the first decade of 20th century with the writing of the book "*A Mind That Found Itself*" by Clifford Beers who is regarded as the father of mental hygiene. Beers was a graduate of Yale University who went through a series of depression in his life and attempted to commit suicide. But luckily he was saved and treated of his mental illness. After his recovery he wrote the book which is a description

of the treatment he had received. This book created a revolution among the general public for the necessity of mental hygiene.

Mental Health challenges of students:

Children undergo a series of experiences in the school that helps in framing their personality, career and their role as civilized citizens of the country. But it is a true fact the school going period of the children is changing rapidly into the age of mental illness, child abuse, stress, depression, behavioural and emotional disturbances. As a result the children's mental, social, emotional and behavioural development is negatively affected. The challenges like delinquency, drug addiction, alienation, bullying and suicide are one way or the other linked with mental health of children. Now in India, one student commits suicide every hour. According to Lancet report in 2012, India has one of the world's highest suicide rates of youths aged 15 to 29. According to National Crime Record Bureau (NCRB) in 2015, the number suicides stood at 8,934. The number of attempted suicides of many unreported students is likely to be much higher. It is an alarming picture for the future of the nation.

Mental health for young children is a highly sensitive issue. A variety of psycho-social and health problems affect learning and performance in profound ways. From learning disabilities to autism and Down's Syndrome, as well as increasing episodes of depression, school refusal, and panic attacks among school children require expanded intervention. Thus, there is an urgent necessity to assist teachers to equip the students to handle issues at school. Besides emphasis on physical education there is a need to enhance the mental well-being of young children and their families.

Factors affecting mental health:

Emotional disturbances such as aggression, withdrawal, immaturity, learning difficulties are commonly experienced by people. The ability to cope with negative experiences varies greatly from person to person. Some of the factors affecting mental health of the students are as follows-

Self-esteem

This is the value we place on ourselves, our positive self-image and sense of self-worth. People with high self-esteem generally have a positive outlook and are satisfied with themselves most of the time. But students with low self-esteem face problem of mal-adjustment in new environment.

Love and affection

Feeling of love, trust and acceptance by their parents and others are far more likely to have good self-esteem. They are more likely to feel comfortable,

safe and secure and develop positive relationships with others. On the contrary, as the lack of an affectionate relationship with the family may lead to emotional mal-adjustment of the students.

Confidence

Students must be encouraged to discover their unique qualities and acquire the confidence to face challenges and take risks. Due to a lack of confidence, many young people may fail to realize their purpose in life and lead an unsatisfied life full of regrets.

Family breakup or loss

Separation or divorce or the loss of a parent or a sibling is extremely painful. Finding ways to cope with and adjust to the changes wrought by these events is critical for everyone, but particularly for youth. If children have difficulty in coping, professional help is recommended.

Difficult behaviour

When people are unhappy, they either internalize their unhappiness or act out. The latter usually appears as bad or difficult behavior, such as using abusive language, being aggressive or violent, damaging property, stealing, lying, refusing to comply with expectations at school or home etc. If such behavior is serious and persistent, the young person and his or her family might require professional help.

Physical ill health

Diseases, injuries and other physical problems often contribute to poor mental health and sometimes mental illness. Some physical causes such as birth trauma, brain injury or drug abuse can directly affect brain chemistry and contribute to mental illness. More commonly, poor physical health can affect people's self-esteem and their ability to meet their goals, which leads to unhappiness or even depression. In such cases, receiving the best possible treatment for both the physical problem and the resulting psychological consequences is key optimal recovery to good mental health.

Abuse

The mental health of abused children is at great risk. Abused children are more likely to experience mental disorders or mental illness during childhood and into adulthood. Abuse may be physical, psychological, and verbal. It may

not always be evident or easily recognized. Regardless of the form it takes, abuse cannot be tolerated. Children need to be protected from abuse and helped to overcome its negative effects. Abuse can cause feelings of low self-esteem, lack of self-confidence, depression, isolation and anger that impair a child's chance to lead a happy life.

Role of Counseling on the Mental Health of students:

Educational Counseling Services have been a part of our academic scheme for a long time now. The earliest knowledge of guidance and support of this nature can be traced back to the National Policy on Education (1986) and Programme of Action (1992), that introduced counseling services in education and also, emphatically stated the need for parallel infrastructure for vocational and career guidance in educational institutions.

Today, the scope of counseling has expanded to include classroom discussions and mental and physical health issues, along with remedial help for students of all age groups and background. The National Curriculum Framework (2005) views guidance and counseling as a part of the curriculum. It aims to assist and facilitate overall development of students in schools and colleges. The benefits of school counseling program on mental health may be mentioned as under-

- Assisting on Life Skill Education for the overall development of children as well as adolescents.
- Counseling that encompass issues of personal safety such good/bad touch and personal hygiene.
- Adolescent Education Program that focuses on frustration, control of aggression, peer pressure, dating violence and puberty which helps students in effective adjustment during adolescence.
- Counseling to help in dealing with examination stress, parental pressure and personal issues in school.
- School counseling to help overcome classroom biases towards children with special needs by sensitization and acceptance towards inclusion in education.
- Involvement of parents, teachers, counselors and students in meaningful discussion leading to awareness towards mental health and hygiene.

But it must be admitted that the above mentioned facilities are not available in many of the educational institutions. Only a sizable private educational institution offer these facilities under the guidance of trained counselors. There lies a wide disparity between the private and public schools, with the latter lagging behind. The school counseling program lays a strong foundation for children to understand

and express themselves and grow up as sensitive adults. Thus, it is high time to train teachers as counselors to guide the students for a better future.

Existing legal provisions in respect of students mental health in India-

In India there are a number of Mental Health Acts since Pre-Independence period namely,

(i) 1885: Indian Lunatic asylum act of 1858-

The main stress of the act was on preventing the society from dangerousness of mentally ill and taking care that no sane person is admitted in these asylums.

(ii) Indian Lunacy Act of 1912-

The Act is regulated and supervised by a central authority lead to the destiny of Psychiatry in India. Psychiatrists were appointed as full time officers in the hospitals. The main stress was on preventing the society from dangerousness of mentally ill and taking care that no sane person is admitted in these asylums.

(iii) Indian Psychiatric Association established in 1947.

(iv) Mental Health Act 1987-

The Act came into effect in April 1993. Its main purpose was to ensure availability and accessibility of minimum mental health care for all. The Act ensures protection of human rights of mentally ill. It promotes community participation in mental health service development and stimulates self-help in community.

(v) Mental Health Care Act, 2017-

In 2007, India ratified the United Nations Convention on the Rights of Persons with Disabilities, which requires signatory countries to change their laws to give effect to the rights of persons with mental illness. In India before there is no specific stringent provision for protection of Mental Health. The Mental Health Act, 1987 was found inadequate for better treatment and improved access to health service. Thus, the Mental Health Care Bill was introduced in the Rajya Sabha in 2013 to bring the law in consonance with obligations of the UN convention. The Bill was reintroduced in August 2016 with 134 amendments which lead to complete overhaul of the purpose and spirit of UN convention.

The reintroduced Bill was passed by both Houses; it has received Presidential assent and is in force as the Mental Health Care Act, 2017.

Key Features of the Act-

*** Rights of persons with mental illness-**

◆ Every person has the right to access mental health care by both public and private services. Right to access of mental health care includes availability, affordability and accessibility.

◆ It ensures every person shall have a right to access mental health care and treatment from mental health services run or funded by the appropriate government.

◆ It assures free treatment for homeless or people Below Poverty Line, even if they do not possess a BPL card.

◆ No information regarding the person can be released to the media without his consent.

◆ **Advance Directive-** A mentally ill person shall have the right to choose the way of treatment and can nominate a person who can take decision on their behalf.

◆ **Central and State Mental Health Authority-** Authority has the responsibility to

◆ To maintain register of all mental health establishments.

◆ To develop quality service

◆ To train law enforcement officials

◆ To receive complains

◆ To advice the government on the matters relating to mental health

◆ **Mental Health Review Commission and Board:**

It will be quasi-judicial body that will review the use and the procedure for making advance directives and the advice the government on protection of the rights of mentally ill persons.

◆ **Decriminalizing suicide and prohibiting electro-convulsive therapy:** A person attempting suicide is given mental treatment at that particular time and it is not considered as a crime under Indian Penal Code. Electro-convulsive therapy is allowed with the use of muscle relaxants and anesthesia which is prohibited for minors.

◆ **Insurance-**The Act will facilitate insurance facility for both medical insurance as well as physical illness. (Mental Health Care Act,2017)

Drawbacks of the Act-

♦ The act recognizes mental illness only as a clinical issue which can only be treated by medicines and clinical procedures. The important issue of prevention and promotion of mental well-being has been neglected.

♦ Narrow interpretation of the definition of a 'mental health professional' is a matter of conflict regarding who should be include psychotherapists, counselors and psychoanalysts.

♦ Once a person is admitted to mental hospitals he is termed insane or mad by the society. There were no provisions in the act to educate the society against these misconceptions.

♦ Although the act provides for a simpler discharge procedure but no provisions were made for after discharge care and rehabilitation of patients.

♦ No provision for hearing of cases submitted before drafting of the bill.

The Mental Health Care Act, 2017 is a crucial step in treating mental illness of person. But there are few drawbacks of the bill which need to be filled up through the efforts of the government and the stakeholders to ensure rights of persons with mental illness and to meet the UN Convention.

Conclusion:

One of the most important aspects of education is taking care of the emotional well-being of the learners to provide an enabling environment for the learners to learn, grow and glow. Given the amount of complexities of the present times, it is very urgent to sensitize the teachers, guardians and students about psychological counseling to adapt a positive attitude towards life and society. As more and more students suffer from mental health problems like depression and anxiety, it becomes essential to create avenues for proper psychological treatment and care. Teachers have a unique opportunity to play an important role in the health and well-being of their students. Teachers represent a prominent and positive adult role model in the student's life. It is part of their role to be supportive and aware of students' difficulties and direct them to appropriate resources for help if needed. It is therefore imperative that teachers are equipped with practical tools and knowledge required to recognize and intervene appropriately in situations where mental illness may be a concern. Hence, is important to create a healthy institutional climate of co-operation, empathy and interconnectedness among all the stakeholders, Further, it is high time to generate awareness among the masses about the existing policy, programmes and legal provisions in respect of mental health .

Work cited:

Baker,C(2013) School-based mental health services: What can the partnership look like? *Counseling Today*,55(7),58

M.Dhuria, N. Sharma, et al (2009) Assessment of mental health status of senior secondary school children in Delhi, *Asia Pac. J Public Health*, 21 pp.19-25

M. Prince, V. Patel, et al (2007) No health without mental health, *Lancet*, 370, pp. 859-877 hMental Hygiene| Britannica.com

Mental Health Care Act,2017; its provisions and drawbacks
www.iasInsights.in retrieved on 28/2/18

S. Malhotra, B.N. Patra (2014) Prevalence of child and adolescent psychiatric disorders in India: A systematic review and meta –analysis, *Child Adolesc Psychiatry Ment Health*,8,pp.22

WHO(2007)| Mental Health: a state of well-being
www.who.int>features.facilities>ment...

INCEPTION OF ARABIC NOVEL AND ITS SUBSEQUENT DEVELOPMENT TILL NAJIB MAHFOUZ: A STUDY

Arshad Laskar

Abstract:

In the nineteenth century a number of factors continued to make changes in Arabic narratives on modernity. First of all, after Napoleon's occupation of Egypt (1798-1801) and the subsequent establishment of a western motivated ruling dynasty under Muhammad Ali Pasha (d. 1849), Egypt becomes the center of the modern Arabic literary renaissance. The environment of Egypt attracted various Syrian and Lebanese writers, mostly Christians, who had been in touch with Europe since the sixteenth century. Later the impact of the Renaissance spread into other Arab countries, particularly Syria, Lebanon and Iraq. After the second world war, these developments were strengthened by the emergence of Arabic newspapers and periodicals as well as by the spread and modernization of education.

Keywords: Arabic novel, Inception of Arabic novel, Muhammad Ali Pasha, development, Najib Mahfouz, Zainab etc.

Introduction:

The early novels in Arabic were in the form of translations from French and English, followed much later by original writings in fiction. Robinson Crusoe was translated into Arabic by Butrus al-Bustani in the early nineteenth century. More than a hundred novels and tales were translated only from French. Then Jurji Zaidan initiated to write historical novels, after that various Writers written historical novels such as Niqula Haddad (d-1954) Dr. Yaqub Sarruf (d-1927), Farah Anton (d-1927), etc. Although these historical novels played a vital role in developing among the Arabs a sense of mutual identity and a wide readership. They did not focus on the contemporary socio-cultural issues that constructed the main topic of the western novel in the nineteenth century. Muhammad Muwailihy's *Hadith Isa Ibn Hisham* and Muhammad Hussein Haykals *Zainab* are regarded as important milestones in the development of the genuine Arabic novel. These developments set the stage for later authors like- Tawfiq Al Hakim , Nazib Mahfouz, Yahya Haqqi, Ibrahim Abdul Qadir al- Mazni, Muhammad Hussein Haiykal etc.

Inception of Arabic Novel:

The critics have contradicted over the years as to how the modern Arabic novel first came in to existent. Some maintained that Arabs have written novelistic narrative literature since very ancient period. They cited- The epic folk romances of Antra and Saif Ibn Dhi Yazan, The hilarity cycles of chivalric romance, The thousand and one nights, al-Ma'ari's *Risaalat al-Ghufraan*, Ibn Tufailie's philosophical romance *Hayy ibn Yaqzan*, and a number of other works.

Another group of scholars are express their view that the new literary form of modern novel is borrowed from the west in the second half of the nineteenth century. The real fact is that the roots of narrative literature, is known in the tales, myths, and the epic romances, which have existed very early time in every Arabian, European, Asian and African societies. When the novel is discussed in international literary circles, English and French supposed to agree that the novel began in the early decades of the nineteenth century.

In the beginning the translated novels were of minor value. Most of them were love stories, historical and oriental tales, and science fiction and detective stories. In translation, the stories were often rearranged and even deformed. Sometimes translators would pass their translated pleased of for publication under their own names, but other times completely the opposite side was happened. Some writers published their own works under the western writers in the hope of attracting more readers.

Other protective intellectuals tried to revive the Maqama, among this group Muwailihi (1859-1930) was leading, who first published '*Hadith e-Isa Ibn Hisham*' in serialized form between 1898 and 1902, and subsequently had it printed in one volume in 1907, Hafiz Ibrahim (1868-1932) also wrote *Layali Satih* in 1906, in the style of Maqama.

The Syrian Francis al-Marrash (1836-1873) and the Lebanese Salim al-Bustani (1847-1884) were considered as the pioneers in the Arabic prose renaissance. They adopted the Western novel form liberally and without preservation. In 1865, Francis al-Marrash wrote *Ghabat al Haqq*, and it is considered as the first Arabic novel. Salim al-Bustani produced a series of novels in his magazine al-Jinan. His first novel *al-Huyam fi finan al sham* published in 1870, followed by *Zanubiyya* in 1871, and *Budur* in 1872. He wrote nine novels and published in the oncoming years.

The most distinguished Lebanese novelist of this time was Jurji Zaidan (1861-1914). He wrote almost twenty historical novels in literary quality. They also were distinctly superior at least in the way they were present to most of the translated historical romances which were being serialized in periodicals during the same years as Zaidan's novels. There can be no denying the fact that this book occupies an evidential importance in the subsequent development of modern Arabic fiction as far as setting and style is concerned. The changes that occurred in Egyptian society as a result of Westernization have also been nicely portrayed in it.

Muhammad Hussain Haykal's novel *Zainab*, is regarded as the first fully technical and real novel in Arabic in respect of both content and form. The role played by this novel in the development of the Arabic novel on modern outlook is notable for two reasons, First, in it the author touched for the first time on the difficulties of contemporary Egyptian society and its attitude to marriage through a depiction of the oppress of love among the peasants. Secondly, it is written in a direct straight forward style, following which the medieval Maqama influence almost totally disappeared from Arabic fiction.

These developments prepared the way for the rise of authors like- Dr.Taha Hussein (1970), Ibrahim Abdul Qadir al-Majini (1987), Najib Mahfouz etc. who not only discussed hatred or social issues in their novels, but also wrote the meaningful, imaginative, simple and easily understood prose. Thereafter, the genre of novel in Arabic became a powerful literary mode to explore topics of current concern so much so that the above mentioned Egyptian novelist Najib Mahfouz became the novel laureate in literature for 1988.

Development of Arabic Novels:

The liveliness turned up in Arabic literature during the 19th century along with so much of Arabic civilizations and improvements and it is referred

to in Arabic as al- Nahda or renaissance. This resurrection of writing in Arabic was not only perceived by the Arab world only but also on the other side of a great interest in translating of Arabic works in to European languages was survived, many of the figure of speech of the former literature which worked to make it so ornate and complex were dropped.

The peculiarity of the Nahda period of resurgence were two exclusive trends. The neo-classical movement demanded the rediscovering of literary traditions of the past, and secondly it was affected by traditional literary genres such as the Maqama and the thousand and one nights. In contrast, the modernism started by translating western novels in to Arabic.

Eminent authors in Syria, Lebanon and Egypt produced real works by following the classical Maqama. The most distinguished among them was al-Muwailihi, whose book, *Hadith e- Isa Ibn Hisham* critiqued Egyptian culture and society in the period of Ismail. This work is considered as the first step in the development of the modern Arabic novel. This trend was advanced by Jurji zaidan. Following in the footsteps of Zaidan, several writers published historical novels such as Niquila Haddad (d-1954) Dr. Yaqub Sarruf (d-1927), Farah Anton (d-1927), etc. Though these early historical novels played a vital role in developing among the Arab world a light of mutual identity and a wide readership. Two other important writers from this period were Khalil Gibran and Mikhail Nuaimia both are expert in combining philosophical thoughts in to their works.

The general theme of the modern Arabic novel is the study of family life with manifest echo with the widespread family of the Arabic world, many novels have been unable to abstain the politics and disputes of the region to fight after acting as background to seal family Dramas. The works of Najib Mahfouz paint a clear picture of social, political and cultural issues of the life of Egyptian society. He is highly sensitive to political events. He used the 1919 Egyptian revolution as the background of his *Cairo Trilogy*.

The prominent Arab-Islamic philosophers, Ibn Tufail and Ibn al Nafis, were considered as the pioneers of the philosophical novel as they composed the earliest novels dealing with philosophical fiction. Dr. Taha Hussain is the most prominent figure of modern Arabic literature. His novel *al-Ayyam* (The days) is the most celebrated autobiographical novel of the modern Arabic literature. In this novel he talks about his study life, the condition of the village and about Al-Azhar. Muhammad Hussein Haykal (1888-1956) is well known for his novel *Zainab*, written in 1914. The novel *Zainab* often considered the first technically realistic novel in the Arab world. The work of fiction which drawn more attention and accepted more study than the other ones. *Zainab* has been admired as the best grape vine of a mature and completed modern Egyptian novel. Tawfiq al-Hakim is the most imaginative writer of the Arab

world and its greatest playwright. He occupies the highest place as the greatest Arab writer during the first half of the twentieth century. His most extraordinary and technical novel of this period is *Yawmiyyat naib fi al-aryaf* (The diary of a deputy public prosecutor in the country). He painted a vivid picture of his life in his great novel *Audat al-Ruh* (The return of the spirit-1933).

Ibrahim Abdal- Qadir al-Mazini's (1890-1949)19 contributions is remarkable and notable to the development of modern Arabic novel literature, which shown a new path to the development of Arabic novel. He prepared himself as a critic of poetry, but he was most expert in writing short stories and comical stories. Al- Mazini wrote many novels, Among them the mentioning are the most notable- *Ibrahim al-Katib* (Ibrahim the writer, 1931) *Ibrahim al-Thani* (1943) and *Thalathu Rijalun wa imraatun* (Three men and a woman). Mahmud Tahir Lashin is also a great novelist of modern period. His famous novel *Hawwa bila Aadam* (Eve without Aadam-1934) is an important novel because it shown the way to certain developments of Arabic novel.

Ihsan Abd al-Quddus is the another name in the field modern Arabic literature. Among the romantic novelists he occupies a prestigious place and position in the modern period. He has written many novels and short stories. Some of his popular novels are- *Ana Hurr* (I am free 1954), *La Anam* (I can't sleep, 1956), *Zaujat Ahmed* (Ahmed's wife, 1961) and so on.

Nazib Mahfouz made a major contribution to the modern Arabic novel. He is largely regarded as the founding father of the Arabic novel. Mahfouz is the most creditable and productive writer of fiction in the Arab world today. He was born at the beginning of the 19th century. Different from his contemporaries, Mahfouz dedicated himself to the style and way of the Arabic novel. Because of that offer and struggle Mahfouz has become the most famous Egyptian novelist governing the fictional prospect for more than two decades. After knowing the reality to the works of various European writers and literary schools, Nazib Mahfouz produced the western novel in a much more developed form. It had its established tradition and techniques. *Al-Thulathiyyah* (The trilogy) of Mahfouz is surely his best collection of novels. The trilogy consists of three novels namely *Bayn al-Qasrajn*, *Qsar al-Shawq* and *al-Sukkariyyah*. In this family story Mahfouz focused the spirit and intention of the people's effort for freedom. Mahfouz's novels deals with the stories of love, ethics, moral responsibility, and existential crises that characterize a culture that has undergone many external and internal changes. His tales describe the lives of ordinary individuals caught in struggles of identity and faith that reveal the existential, spiritual, and material character of Egyptian society. His novels can be divided into three categories as- Historical Novels, Social Novels and Political Novels

Conclusion:

There were many Arab writers who contributed to and attempted the development of the Arabic Novel before him. But the Arabic novel originally developed and reached its zenith mainly through the efforts of Nazib Mahfouz. He is one of the outstanding figures of this art who have played an important role in its development. He had faced many difficulties to find his way in this untreated ground. Finally, it may be said that the most significant shape in the history of Arabic novel appeared in the hand of Nobel laureate Najib Mahfouz.

Work cited:

- ♦ Allen, Roger, *The Arabic Novel: an historical and Critical introduction*, Syracuse, 1982. ed. *Modern Arabic Literature Library of literary Criticism Series*, New York, 1987.
- ♦ Allen, Roger, *the Arabic Literary Heritage*, Cambridge University Press, 1998.
- ♦ Matti Moosa, *The Origin of Modern Arabic Fiction*, Washington, D. C.: Three continents Press, 1983.
- ♦ Ali B. Jad, *Form and Technique in the Egyptian novel (1912-1971)*, London: Ithaca Press, 1983.
- ♦ Hamdi Sakkut, *the Egyptian Novel and its main Trends (1913-1952)*, Cairo: The American University in Press, 1971.
- ♦ Hilary Kilpatrick, *Modern Egyptian Novel: A Study in social criticism*, London, Itpaca Press, 1974.
- ♦ J. Brugman, *an Introduction to the History of Modern Arabic Literature in Egypt*, Leiden: E. J. Brill, 1984.
- ♦ Trever Le Gassick, ed. *Critical Perspectives on Najib Mahfouz*, Washington D. C.: Three Continent Press, 1991.
- ♦ Ghali Shukri, *Al-Muntami: Al-Muntami: Dirasa fi Adab Najib Mahfouz*, Cairo: Dar al-ma'arif, 2nd edition, 1969.
- ♦ Muhammad Asan Abdullah, *Al-Islamiyya wa al-Riyya fi Adab Najib Mahfouz*, Cairo: Maktatat Misr, 2nd edition, 1978.
- ♦ Badr, Taha, Abdul Mahsin: *Tatawwr al-Rewayat al-Arabja*, 3rd ed., Darul Maarif- 1976.

USAGE OF ARABIC WORDS IN ASSAMESE LANGUAGE: A HISTORICAL SURVEY

Dr. Abul Kalam Choudhury

Abstract

Arabic language is one of the international languages, because it has occupied the fourth position in the recognized languages of the United Nations. The impact of Arabic language and literature to the Assamese society is manifold. Various Arabic words had come into Assamese language during the invasion of Mughal in Assam. We find that in every invasion, the Muslim soldiers were defeated and in those wars a large number of the Muslim soldiers were made captive. Instead of killing these captive Muslim Soldiers, they were engaged in various works and later on they were settled in Assam. Gradually they learned the Assamese language and used the Arabic words also along with the Assamese language and the words stock has made an access to Assamese literature and thereby it has enriched the standard of Assamese language. The Arabic words are the perfect words to express the complete ideas of some Particular subjects. There are numerous Arabic words which are used in Assamese Language as nouns, adjectives, verbs, adverbs, prefixes, conjunctions and interjections. There are various Arabic words which are used in Assamese language relating to administration, Religious ceremonies, prayers, Education, Architecture, Professions, Medical Science, Music, Rebuke, titles & Designations, Revenue & Treasury, Marriage and Business etc.

Keywords: Ahom, Mughal, Muslims, Arabic words, Assamese language and literature.

Assistant Professor, Dept. of Arabic
Gauhati University

Introduction:

Arabic language is one of the six international languages recognized by the United Nations. The impact of Arabic language and literature to the Assamese society is manifold. Various Arabic words had come into Assamese language during the invasion of Mughals in Assam. First I would like to draw the picture, how the Arabic words entered into the Assamese language.

Invasion of Mughals on Assam:

Assam is a frontier province of Indian Territory which is situated on its extreme north-east part. The geographical limits of the province have been permanently marked out by nature, although its political boundaries have varied from time to time. Assam is the most modern name of the province but in ancient time it was a part of the country known as Pragjyotisa, which was mentioned in the great epics, the Mahabharata and the Ramayana. Later on the name of the province Pragjyotisa was changed to 'Kamrupa.

Many times the Mughals invaded the Assam and in every invasion the Muslim soldiers were defeated and a huge number of the Muslim soldiers were made captive in those wars. Instead of killing these captive Muslim Soldiers, they were engaged in various works and in this way they settled in Assam.

When Muhammad bin Bakhtyar Khilji invaded on Tibet in 1206 A.D., who was a desperate military leader under the Sultan of Delhi Qutbuddin Aibak. Then a huge number of Muslim soldiers who invaded in Tibet were captured by the King of Kamrupa and instead of killing, they were settled in his kingdom. In 1228 A.D. after killing the king of Kamrupa Prithu, Nasiruddin of Gauda appointed a tributary king on the throne of Kamrupa. From that time a large number of Muslims from outside of Assam started to enter to Assam, some of them entered here as invitees of the local kings, remaining others entered here as preachers of Islamic faith.

Tughrii Khan a ruler as well as a preacher of Islamic faith had constructed a mosque first time in the history at Kamrup Nagar (Presently it is known as North Gauhati) and started the Friday prayer as well as the reading of Khutbah in 1257 A.D. Most probably there were settled Muslims in Kamrupa Nagar before Tughrii Khan's arrival, so the mosque was required there for them to worship the Creator Allah.

From 13th century the Assamese people began to use Arabic words in Assamese language. A court poet of Durlabha Narayan of Kamata called Hema Saraswati, who first used the Arabic word 'Naphar' in her poetry, which appeared to have been starting point of the flow of Arabic words to the Assamese Language and Literature.

During the 15th century, the Afghan Muslims used Kamrupa as their colony. The Afghan Muslims drove away the local Hindu Chieftains and controlled both the civil and military administration of the territory. Among them, there were two most successful commanders known as Masundar Ghazi and Sultan Ghiyasuddin Awlia who ruled over Kamrupa and Hajo respectively for few years. Sultan Ghiyasuddin Awlia was not only a commander but was also a preacher of Islamic theology who entered Kamrupa with 12,000 horsemen and 13,000 Turkish foot soldiers and occupied the land around Hajo.

Sultan Ghiyasuddin Awlia is believed to be an Awlia (saint of Allah) who built a big mosque on the Gurudachal hillock at Hajo. After his death, he was buried in the same hillock at Hajo whose tomb is famous as Poa Makkah, and is still being venerated by Assamese Hindus and Muslims. The Assamese people believed that he was the first Muslim who propagated Islamic faith in that area. He used various Arabic words along with Assamese words, which were accepted by the local people because these words were the perfect words to express complete ideas of some particular subject.

In ancient time many Mughal Muslim soldiers were made captive by Ahom in various wars, especially the war which was took place between Shuhungmung and Turbak in 1533 A.D. In this war even Turbak's daughter Sawalai was also imprisoned along with other Muslim soldiers. The Ahom king did not kill them but were engaged in various works, some of them were engaged in feeding the elephants, but they proved themselves that they were not proficient in this work; after that they were engaged in the paddy cultivation work but here also they proved themselves useless. At last the king allowed them to live their lives with their own assignment. Later on these imprisoned Mughal Muslims soldiers were known as Marias in Ahom kingdom and they began to survive their live as artisans of brass-metal work.

In the battle of Saraighat which was held on 1681 A.D., a large number of Mughal soldiers were imprisoned by the Ahoms who were not killed, but later on they were settled in the territory of Assam. These Muslim soldiers were allowed to get marry with the local Assamese girls, so they got marry with the Assamese girls and mingled themselves whole-heartedly with the Assamese society and it's culture. Though the mother tongue of those Turk, Afghan and Mughal soldiers were Turkish and Persian but they used a large number of Arabic words. But their wives as well as their children were interacting in Assamese language, so they were compelled to talk in Assamese language with them; therefore, gradually they started to speak Assamese language with their family members as well as other local Assamese people using the Arabic words in their day-to-day life. In this way the local Assamese peoples were also influenced by Arabic words and they started to use the Arabic words in their conversation.

Use of Arabic Words in the Time of Sankardeva:

During the time of Sankardeva (1449 - 1569 A.D.) in Ahom rule, the use of the Arabic words became more frequent among the people. As the words like wasil, baqi, haram, halal etc. were used in the literature of his time. Even the followers of his Vaishnavite faith were also influenced by the Arabic words during the time of their pilgrimage in North India, which were being used among the common people of that area. Later on they began to use such words in their conversation with other local Assamese people and gradually these words entered into the Assamese language.

During that time, many Muslim Mughal Khanikars were invited by some Ahom kings from Mughal kingdom; later on, the king settled them in Assam and engaged them in khanikar khel (guild) where they were very efficient. In course of time these Mughal khanikars forgot their mother tongue and used the Assamese language as their mother tongue, yet they always used Arabic words in their Assamese communication, which began to influence the Assamese language.

Some time the Ahom kings invited the Mughal artists as well as Arabic and Persian knowing scholars to dwell in their kingdom, their only intention was to develop the Assam's Economy and expand the Assamese culture through their valuable skills. The Mughal Muslims contributed a lot in the field of Assamese literature and music. A huge number of Mughal Muslims were appointed in different responsible offices of Ahom kingdom and they were also entrusted with tasks of political importance. In this way these Mughal Muslims mingled themselves with the Assamese people and played their role well in different activities of the Assamese life and culture.

Use of Arabic Words in the Dhikirs and Zaris of Adhan Faqir:

The Dhikir and Zari also contributed a sufficient number of Arabic words to the Assamese language and literature. In 16th century the saint Shah Milan (Miran) was also popularly known as Adhan Faqir, flourished and created his immortal Dhikirs and Zaris in Assamese. He composed fine poetry in a popular and chaste language on the topics of religion, metaphysics and spiritual experiences, which were very popular among the Assamese people even today also.

A large number of Arabic words used in Dhikir and Zari, for which we can't find any native words and which most appropriately expressed and conveyed his thoughts and ideas, as Adhan Faqir mentioned in a Dhikir:

Mor majat ghin bhab nai o Allah
Mor majat ghin bhab nai o Allah,
Hindu ki Musalman eke Allar Farman
Nai kono ghin bhabor man.

Here Allah, Musalman and Farman, these are the Arabic words, which are used among the Assamese people whether they are Hindu or Muslim.

Adhan Faqir composed more than thousand Dhikirs and Zaris using this kind of Arabic words which helped to enrich the Assamese Language and Literature.

In this way the Turk, Afghan and Mughal Muslims whole-heartedly adopted the Assamese language as their mother tongue and later on a large number of Arabic words had penetrated into the Assamese language through these common Muslims and thereby it has enriched the standard of Assamese language and literature.

The Arabic words used in Assamese Language:

The use of Arabic words in Assamese Language is manifold; these are used as nouns, adjectives, verbs, adverbs, prefixes, conjunctions and interjections. A huge number of Arabic words are used in Assamese Language for long time. In recent time, some linguists are trying to replace these Arabic terms with Assamese terms, but it is not that much easy to replace these Arabic terms with Assamese terms because these terms are using by the people for centuries. Other hand, these Arabic terms are more comfortable for the common people than the Assamese terms, so they prefer to use the Arabic terms than the Assamese terms in their conversation. There are various fields where the Arabic words are used because these words are the perfect words to express the complete ideas in some particular subject. Some commonly used words are mentioned bellow:

1. Arabic Words relating to Administration:

There are various Arabic words which are used in Assamese language relating to administration, these Arabic words are commonly used by all Assamese people. These words are as follows:

Arabic Pronunciation	Assamese Pronunciation	Meaning
Adalah	Adalat	Court
Hirasah	Hirasat	Custody
Baligh	Balig	Major
Muqaddamah	Muqaddama	Case
Zamanah	Zamanat	Bail
Mansukh	Mansukh	Cancelled
Dalil	Dalil	Proof
Haq	Haq	Right
Hakim	Hakim	Judge

Wuzir	Wuzir	Minister
Baqi	Baqi	Arrears
Bayan	Bayan	Statement
Insaf	Insaf	Justice
Kharij	Kharij	Dismissed
Wakil	Wakil	Pleader
Majlis	Majlis	Meeting
Bahas	Bahas	Discussion
Hazir	Hazir	Presence
Hisab	Hisab	Calculation
Munsif	Munsif	Judge
Munshi	Munshi	Writer
Mal	Mal	Property etc.

2. Arabic Words relating to Religious Ceremonies and prayers:

There are various Arabic words which are used in Assamese language relating to religious ceremonies and prayers. These technical Arabic words are mostly used by the Assamese Muslims. These terms are as follows:

Arabic Pronunciation	Assamese Pronunciation	Meaning
Allah	Allah	God
Din	Din	Religion
Gusal	Gusal	Bath
Rab	Rab	Lord
Khalifah	Khalifa	Caliph
Nabi	Nabi	Prophet
Rasul	Rasul	Apostle
Ziyarah	Ziyarat	Visit
Zakat	Zakat	Poor tax
Qabar	Qabar	Grave
Awliya	Awliya	Saints
Dua	Dua	Prayer
Iman	Iman	Faith
Rauzah	Rauza	Tomb
Masjid	Masjid	Masque
Nikah	Nikah	Marriage
Eid	Eid	Eid festival

Salam	Salam	Greetings
Fazal	Fazal	Grace
Sunnah	Sunnat	Tradition etc.

3. Words relating to Education:

The Mughals were staunch patrons of learning, so they attached with educational institutions in Assam where they used various Arabic words related to the education. These Arabic words are as follows:

Arabic Pronunciation	Assamese Pronunciation	Meaning
Ilm	Ilm	Knowledge
Lifafah	Lifafa	Envelope
Khabr	Khabar	News
Akhbar	Akhbar	Newspaper
Mehfil	Mehfil	Conference, meeting
Ustad	Ustad	Teacher
Mudarris	Mudarris	Teacher
Madrasah	Madrasa	School
Talim	Talim	Education
Aql	Aql	Intelligence, mind etc.

4. There are various Arabic words which are used in Assamese language relating to Clothes, Architecture, Medical Science, Rebuke, titles & Designations, Revenue & Treasury, Marriage and Business etc.; some of these are as follows:

Arabic Pronunciation	Assamese Pronunciation	Meaning
Makhmal	Makhmal	Velvet
Makkar	Makkar	Cunning
Dukan	Dokan	Market
Hakim	Hakim	Physician
Harami	Harami	Thief, dishonest
Muharrir	Mahari	Writer
Manzil	Manzil	Storey
Mahal	Mahal	Palace
Hauz	Hauz	Reservoir
Mariz	Mariz	Patient

Shaitan	Saitan	Devil, wicked
Alamat	Alamat	Symptom
Sayyad	Sayyad	Sayyad (title)
Qazi	Qazi	Judge
Qari	Qari	Reader
Khadim	Khadim	Servant
Dakhal	Dakhal	Interfere
Nikah	Nikah	Marriage
Nafa	Nafa	Benefit
Istiqbal	Istiqbal	Welcome
Aulad	Aulad	Son and daughter
Mahbubah	Mahbuba	Beloved
Talaq	Talak	Divorce
Taqid	Taqida	Confirm
Naqal	Naqal	Plagiarism
Hazir	Hazir	Attend
Qabul	Qabul	Accept
Amanat	Amanat	Security
Mu'min	Mu'min	Believer
Muhabbat	Muhabbat	Love
Ishq	Ishq	Love
Tijarat	Tijarat	Business / Trade
Talab	Talab	Search etc.

Beside these words there are thousands of words originated from Arabic used in Assamese language in day to day life.

Conclusion:

In this modern age the Arabic Language and literature is playing a vital role in Assam. There are numerous schools, colleges and universities where Arabic language and literature are being taught, which are also helping in the enrichment of Assamese language.

In this way the Arabic words had penetrated into the Assamese language through the Turk, Afghan and Mughal Muslims and thereby it has enriched the standard of Assamese language. Now these words are used by the Assamese people whether he is Hindu or Muslim in their day to day life and become a major part of Assamese language.

Work cited:

- 1 . Barua, B.K. (1969) A Cultural History of Assam, Vol.I, Guwahati.
- 2 . Rajguru, Sarbeswar. (1988) Medieval Assamese Society, Nagaon.

- 3 . Barua, S.L. (1997) A Comprehensive History of Assam, New Delhi.
- 4 . Barpujari, H.K. (1992) A Comprehensive History of Assam,
Vol. II. Guwahati.
- 5 . Barua, S.L. (1997) A Comprehensive History of Assam, New Delhi.
- 6 . Neog, Maheswar. (1983) Asamiya Sahityar Ruprekha, Dibrugarh.
- 7 . Barpujari, H.K. (1992) A Comprehensive History of Assam,
Vol. II, Guwahati.
- 8 . Nathan, Mirza. (1992) Baharistan I - Ghaybi,
(Eng. Tr., by Dr. M.I. Bora), Vol. II, Guwahati.
- 9 . Sarkar, J.N. (1973) History of Bengal, Patna.
10. Barua, Harakanta (Sadr Amin). (1930) Assam Buranji,
Compiled & Edtd., by S.K. Bhuyan.
11. Neog, Maheswar. (1983) Asamiya Sahityar Ruprekha. Dibrugarh.
12. Barua, S.L. (1997) A Comprehensive History of Assam, New Delhi.
13. Rajgoru, Dr. S. (1988) Medieval Assamese Society, Nagaon.
14. Malik, S.A. (1973) Muslims and Assamese Literature,
An article published in Souvenir, Haji Musafir Khana, Guwahati.

ARABIC ISLAMIC STUDIES IN BENGAL

Mizazur Rahman Talukdar

Abstract

Arabic is a Semitic language spoken by people in the Arabian Peninsula and North Africa, whereas Bengali belongs to the Indo-European family spoken in Bangladesh and West Bengal, Assam, Tripura & Jharkhand states in India. There is a little similarity between Arabic and Bengali in terms of vocabulary and grammar. People of Bengal acquainted with Arabic first through trade and then by the advent of Islam. Arab traders used to come to the coastal areas of Chittagong etc. on boats laden with merchandise, would halt over there and then proceed to Myanmar, Malaya and up to China. By the time, Sufi Saints accompanied the traders. They propagated Islam. People converted to the new religion in large numbers. Mosques and Khankas were established for missionary purposes. These institutions provided the facility for learning the holy Quran and Arabic language. This is how the learning of Arabic began in Bengal.

Arabic-Islamic studies in the Indian sub-continent dates back to 13th century. Since then it has undergone so many changes and developments in the course of history. In this article an attempt has been made to deal with the origin of Arabic Islamic studies and its subsequent development in the sub-continent particularly in Bengal.

Key words: Islamic studies, Madrasa reforms, Modernization, Indo-Arab relations, Arabic vocabulary

Assistant Professor, Arabic, Gauhati University

Arrival of Islam to Bengal:

Islam as a political power arrived to Bengal in early thirteenth century (1204 A.D.) at the hands of Ikhtiyaruddin Muhammad Bakhtiyar Khilji. Khilji was a Turkish military general of Qutub uddin Aibek. Bakhtiyar and his men reached the capital Nudiah under the guise of horse traders. This village Nudiah is situated at a place, few miles to the north-east of Rohanpur Railway station in Rajshahi district in Bangladesh.¹

Researchers have differed on whether or not Muslims had a contact with Bengal before the formal Turkish conquest in the early thirteenth century. The majority of the scholars are of the opinion that Muslims arrived in Bengal for business purposes even before the formal Turkish conquest. Arab merchants used to halt at the Chattagram port of Bangladesh while doing their trade with China. Among these traders, there were preachers of Islam who eventually settled down permanently near the Chattagram port and other coastal areas. They developed a good rapport with the native people. After coming into contact with to their (The Arabs) deeds and moral qualities, the common people of Bengal embraced Islam. This trend of the introduction of Islam in the coastal region started from 8th and 9th centuries A.D.² Islam spread to the region by multiple ways, the Arab traders, missionary activities of the Sufis and Turkish conquests.

Between 8th and 12th century A.D. a Buddhist empire under the 'Pala Dynasty' ruled over Bengal. It is believed that, majority of the people in Bengal were Buddhists at that time. After the decline of Pala dynasty, a Hindu empire under the 'Sena dynasty' came to power. But when the Muslim rulers conquered Bengal, many oppressed Buddhists and lower caste Hindus embraced Islam to get read of their sufferings. Large scale conversion to Islam began in the 13th century and continued for 100 of years. On Bakhtiyar Khilji's conquest of Bengal, historian Nihar Ranjan Roy writes:

“Conquest of Nabadwip by Bakhtiyar and the establishment of Muslim rule throughout Bengal within hundred years – is neither a sudden incident, nor a mockery of destiny, it is the ultimate result of national, social and cultural downfall”.³

One of the chief architects of propagating Islam in Bengal was Saint Shahjalal (death 1346 A.D). This legendary Sufi arrived at Syleth (Bangladesh) from Delhi in 1303 A.D. with a group of 360 disciples (known as 360 Aulia) to Preach Islam.⁴ He defeated Raja Gour Govind, the then despotic ruler of Syleth and Propagated Islam to the North-East India.

Arabic-Islamic Studies in Bengal:-

Arabic is a Semitic language spoken by people in the Arabian Peninsula and North Africa, whereas Bengali belongs to Indo-European family spoken in

Bangladesh and West Bengal, Assam, Tripura & Jharkhand states in India. There is a little similarity between Arabic and Bengali in terms of vocabulary and grammar. The people of Bengal became acquainted with Arabic first through trade and then by the advent of Islam. The Arab traders used to come to the coastal areas of Chittagong or Sandwip in boats laden with merchandise, halt there and then proceed to Myanmar, Malaya and up to China. At that time, Sufi Saints accompanied the traders. They propagated Islam. People converted to the new religion in large numbers. Mosques and Khankas were established for missionary purposes. These institutions provided the facility for learning the holy Quran and Arabic language. This is how the learning of Arabic began in Bengal.

Arabic words began to enter the Bengali vocabulary since as early as 7th and 8th century. Many of the Arabic words like Islam, Imam, Zakat, Murtaḍ, and Haj etc. found their way to Bengali. Some of the Arabic words however entered Bengali with considerable changes in spelling and pronunciation. For example, Jera (Bengali), actually Jaraha (arguments) in Arabic. Similarly, mane (Bengali) actually ma'na (meaning) in Arabic. It is an interesting fact that rural dialects of east Bengal, especially those of Chittagong and Noakhali, contain many Arabic words. It is said that 50% of the Chittagonian dialect are either Arabic or Arabic origin. Even the use of negatives prefix before verb in these dialects indicates to the influence of Arabic. The coastal areas of Chattagram and Noakhali are more Arab influenced than any other region, because of their long and close proximity with the Arabs. According to philologists, local dialects of Chattagram and Noakhali have ample presence of Arabic words, idioms and style of language. Even, plenty of Arabic words were being used by the Bengali poets of Chattagram region in fourteenth and fifteenth century A.D. Even today, many Arab customs and games are prevalent in that region".⁵

A large number of Arabic words entered to Bengali during Muslim rule over the sub-continent. At that time, Persian was the official language. Due to the advantage of official language, many Arabic words which are common in Persian entered to Bengali. For example, Persian 'ziyafat' rather than Arabic 'diyafat' (hospitality) in used in Bengali.

There were the Sufis who established mosques, khankas, and madrasas as part of their mission to propagate Islam and its studies. Some of the prominent madrasas of Bengal are:

Mahisun Madrasa

In 13th century, Maulana Taqiuddin Al Arabi established a madrasa in Mahisun in Rajshahi district in Bangladesh. Maulana Taqiuddin was an Arab national. The reputation of his scholarship reached to various parts of then India. In the mid 13th century, Mahisun was a centre of higher learning.⁶ It

was perhaps the first institution of Islamic learning in Bengal.

Sonargaon Madrasa

Sheikh Sharaf uddin Abu Tawwamah established a madrasa at Sonargaon in Dhaka district in later 13th century. Maulana Sharaf uddin Abu Tawwamah was born in Bukhara and studied in Khurasan. He was famous in West Asia as well as India for his scholarship. Standard of this Madrasa was quite high. Even science subjects were also taught in that Madrasa.

Buhar Madrasa

A madrasa was established at Buhar in Burdwan district in 1764 under the sponsorship of Munshi Sadruddin, the Zamindar of Buhar. The reputed Islamic theologian and educationist Maulana Abdul Bari came to Buhar at the request of the zamindar. When this Buhar madrasa was closed down later on, its huge and precious library was added to Calcutta's Imperial Library (now Indian National Library) as the Buhar wing, as per the direction of the British Indian govt.⁷

As the Muslim rule spread, many more madrasas were established. On an average there was one maktab or madrasa for every 400 persons. According to Indologist Max Muller, there were 80,000 madrasas in East Bengal in the early 18th century.⁸

A considerable number of books were written in or translated into Arabic. In 12th century, Kazi Ruknuddin Samarkandi translated Amratkunda (a Sanskrit text on yuga) to Arabic. Allama Abu Tawwamah wrote Arabic "Maqamat" on Sufism. In the late 13th century, Kamil Karim wrote a book on jurisprudence named, "Majmu'i-Khani fi Aynil Maani". Sheikh Kutbul Alam published a collection of hadith called "Anisul Ghuraba" in Arabic. Muhaddis Muhammad Ibn Jajdan copied 3 volumes of Sahih Bukhari in his own handwriting.⁹

In 19th century, a remarkable contribution was made to the Arabic-Islamic literature in Bengal. Maulana Karamat Ali Jaunpuri (R), a missionary and reformer who is widely known as Hadi-e-Bangal (guide to Bengal). He wrote 4 books in Arabic.

- 1) Al-Dawat al-Masnuna – This book is in Arabic-Urdu, quoting Quranic verses for prayers.
- 2) Al-Mulakkhas and
- 3) Barahin-e-Qatiya Fi Mawlid-e- Khairil Bariya – both these books are on milad.
- 4) Nasimul Haramayan – written on Islamic thought & Philosophy.

Another scholar who contributed a lot to the enrichment of Arabic-Islamic literature is Maulana Ubaidullah al Ubaidi Suhrawardy. He was the superintendent of Dhaka Muhsinia Madrasa. He wrote 5 books and composed couple of poems in Arabic.¹⁰

Contribution of Non-Muslims of Bengal to the Arabic-Islamic Literature:-

Richness of Arabic-Islamic Literature lies in the fact that it invited the attention of versatile scholars irrespective of their ideological affiliations. Raja Ram Mohan Roy, the father of modern India was a great scholar in Sanskrit, Persian & Arabic. He studied the holy Quran and got influenced by it. He was a monotheist and did not believe in idol worshipping. He penned down his thoughts on monotheism in his book entitled “Tuhfatul Muwahhidin (A gift to the monotheists). He wrote this book in Persian which has a long preface in Arabic. Another non-Muslim scholar who contributed a lot to the Arabic-Islamic literature in 19th Century was (Maulovi Bhai) Girish Chandra Sen (1835-1910). Due to his extensive research on Islamic studies he was called Maulvi, a title generally attributed to madrasa graduate Islamic scholars. He first learnt Arabic and then translated the holy Quran into Bengali. He also translated some parts of Mishkat Sharif (a book of hadith) into Bengali. He has dozen of books on Islamic issues.¹¹

Arabic Journals:-

Scholars of Bengal have a significant contribution to the enrichment of Arabic journalism in the country. A number of journals were published after independence. Prominent among these journals were ‘Al-Thaqafah’ edited by Ala uddin al-Azhari and “Majallatul Muwassasatil Islamia” published by Islamic Foundation Bangladesh. As of now, both these journals have ceased publication. Department of Arabic, Dhaka University, Bangladesh has been publishing a magazine called “Al-Majallah Al-Arabiah” since 1993. Journal “Iqra” is published from Darul Arabia in Dhaka. Monthly “Al-Kalam” is edited by Harun Islamabadi. Al-Markazul Islami, Dhaka publishes Al-Islah. Moreover, monthly Al-Huda gets published from Dhaka.¹²

A Major Setback:-

In 1765, Mughal emperor in Delhi granted the diwani rights of Bengal to the English. As a result, all institutions imparting Islamic education were shut down, except a few mosque based maktabs. This is considered to be a major setback to the Arabic-Islamic education in Bengal. This resulted to difficulties for the English in administering judicial activities, as till then it was administered as per Muslim law. Several representations by Muslim leaders were made to Warren Hastings, the then governor general of India. In a response to these representations, Warren Hastings established Calcutta Alia Madrasa in 1780. This landmark event is regarded as a restarter for Madrasa education in Bengal. In 1871, Hugli Madrasa was established. In 1873, Madrasa’s were established at Dhaka, Chittagong and Rajshahi. In 1837, English was made state language in India instead of Persian. Realizing the need of learning English language

Calcutta Alia Madrasa started imparting English. Arabic language and literature as an optional subject was introduced in the schools & colleges of Bengal since 1872-73.

In 1971, Bangladesh got independence from the Pakistani regime. After independence, steps were taken to modernize madrasa education system. In 1978, Bangladesh Madrasa Education Board was constituted. In 1978 itself, humanities and science subjects were included in Alim level. In 1980, Fazil degree awarded by the madrasa board was given the equivalent standard of H.S.C. In 1985, Dakhil was accorded the status of SSC. In 1987, Alim was given HSC standard. In subsequent years, humanity, science, business and technical education were incorporated in the madrasa curriculum to enable the madrasa graduates to face modern day challenges. Meanwhile, a law has been passed in the parliament of Bangladesh according Fazil and Kamil degrees with the status of B.A. and M.A. respectively.¹³

University of Dhaka was established in 1921. From the very inception, its Department of Arabic and Islamic studies has been contributing to the enrichment of Arabic-Islamic studies. The mission got its momentum after the establishment of Islamic Foundation, Bangladesh in 1975. Through its translation and compilation department, the foundation has been publishing various books. It has published a considerable number of book's like AKM Ayub Ali's "Aqidatul Islam wal Imam al Maturidi" and Mustafizur Rahman's "Tawilathu Ahlis Sunnah". The Islamic Foundation published a Bengali translation of "The Rise of Islam and the Bengal Frontier (1204-1760)" by Richard M.Eaton, Professor of history in the Arizona University in the U.S.A.

Islamic university in Kushtia in Bangladesh was established in 1985. This university has a faculty of Islamic studies which comprises one department of Arabic and three departments of Islamic studies. These departments of Islamic studies have Arabic as their medium of instruction. Other universities of Bangladesh also have departments for the study of Arabic.

It is interesting to note over here that, the first Muslim student to receive a Ph.D. degree from the University of Dhaka (estd. 1921), Rajab Ali Mirza, was a student of the Department of Arabic.¹⁴

When some changes were made in the madrasa curriculum, and teaching of Arabic was introduced in schools and colleges, Arabic scholars paid their attention to the writing of text books. Significant contribution was made by Maulana Abu Nasar Waheed, Maulana Ala uddin al Azhari, Mufti Syed Muhammad Aminul Insan, Maulana Muhammad Musa and others. They did not only compile the texts but also did some original works. Maulana Muhammad Musa wrote "Subhatul Adab" and "Kitabul Amali". Mufti Aminul Ihsan wrote some valuable books on Tafsir, Hadith and fiqh. His "Qawaidul Fiqh" and "Fiqhus Sunan wal Athar" are two books which deal with the Hanafi School of

Islamic thought. Maulana Ala uddin at Azhari wrote “Al-Adabul Asri” a textbook in Arabic. Maulana Abu Nasar Waheed wrote five books in Arabic based on the new curriculum. Maulana Abdul Awwal Jaunpuri published some 40 books in Arabic on variety of subjects like literature, history and religion. Maulana Abdullah al-Qafi wrote 12 books in Arabic on vivid subjects.

Apart from writing books, some Bengali scholars also composed poem’s in Arabic. Their poems mainly were “Qasida-e-Naatiya” or the poems in praise of the prophet Muhammad (May peace be upon him). Syed Abdur Rashid Shahjadpuri, Mufti Azizul Haque, Hafiz Muhammad Kubbad wrote poems on Prophet Muhammad. Maulana Wilayat Husains “al-Bitaqah” was, for sometime part of the M.A. syllabus in the department of Arabic & Islamic studies of the University of Dhaka. Maulana Abdur Rahman Kashgarhi’s “Az-zaharat” has some fine poems on a variety of subjects.¹⁵

Madrasa Education in Bengal:-

Islam emphasized on acquiring knowledge more than anything else. The very first word of the holy Quran that was revealed to the Prophet Muhammad, was “iqra” i.e. read. During the early days of Islam Prophet Muhammad (S) used to teach his companions in a house called “Dar-e-Arqam”. After migrating to Medina, Prophet established Masjid-e-Nabawi. Companions of Prophet used to assemble in a portico of that mosque and listen to prophet. This portico of the mosque was like a faculty.

During the course of history, Muslim ruler’s conquered various countries, at various point of time. They were attentive towards the spread of education in the conquered countries. After the political conquest of Bengal by Mohammad Bakhtiyar Khilji in 1204 A.D. madrasa education was sponsored by the government, which reached its zenith in the sultane period (1205-1576 A.D.) when this Muslim dominated territory turned into the colony of British, education system was split into two – one, general education, which is sponsored by the government and other is – religious education which operates out of the public donation. Later on, Alia Madrasas were funded and sponsored by the government. After independence, Bangladesh Madrasa Education Board was established in 1978, which is considered to be one of the crucial steps forward in this context.

Madrasa education in Bangladesh, India and Pakistan represents the legacy of spectacular resurgence of Islamic education in late 19th century following the establishment of Deoband seminary in 1867. Establishment of Deoband Madrasa is considered to be a mile stone in the history of Islamic education in this sub-continent, which preserved the mainstream Islamic education and values at a time when Muslim political power was in its decline.

Most of the madrasas in Bengal follow a curriculum known as “Dars-i-

Nizami”. Darsi-Nizami was designed by Mulla Nizam uddin Sihalvi (d.1747), a Lucknow based Muslim scholar. This is the course curriculum that was adopted by the Deoband Seminary in 1867. This is broadly classified into two categories: (1) Al-ulum al-Naqlia (The transmitted Sciences) and (2) Al uloom al Aqlia (the rational sciences). This curriculum consists of 20 subjects in the areas , such as: (1) Grammar (2) Rhetoric (3) Prosody (4) Logic (5) Philosophy (6) Arabic Literature (7) Dialectical theology (8) Life of Prophet (9) Tafsir (10) Hadith (11) Medicine (12) Mathematics (13) Polemics (14) Islamic Jurisprudence etc. out of these subjects only eight can be considered as solely religious.¹⁶

There are two kinds of Madrasas – Quomi and Alia. Quomi madrasa’s teach only the religious subjects. Although, now a days primary level secular subjects are also taught in Quomi madrasas. These madrasas operate on public donation. Alia madrasas operate under the sponsorship as well as supervision of the government. Alia madrasa is a unique system of madrasa education having a synthesis of both religious as well as secular education. The Alia madrasa system has 5 distinct levels –

(1) Ibtidai (Elementary) – at this stage, pupils are mainly taught recitation of the holy Quran.

(2) Dakhil (Secondary) – It is equivalent to class VIII. Islamic jurisprudence, sayings of prophet, Arabic language, History of Islam, Bengali, Mathematics, Social Studies and English etc. are taught in this stage.

(3) Alim (Higher Secondary) – At this stage of madrasa education students pursue higher knowledge of Tafsir and Hadith in detail. Along with that, students study Physics, Chemistry and English on compulsory basis.

(4) Fazil (B.A.) – At this stage, emphasis is given on religious subjects by incorporating subjects such as Islamic logic, law, Arabic literature and history etc. students of this Fazil stage also study English and other basic social science books.

(5) Kamil (M.A.) – This is the highest stage of Islamic religious education which is equivalent to a master degree in Islamic studies from a regular university. An overall view and a broad understanding of Islam are given to the students at this stage. No secular subjects, instead the core religious subjects such as Tafsir, Sihah Sittah (famous 6 compilations of hadith), and biography of Prophet etc. are taught in this stage. Infact, Alia madrasa curriculum is a combination of revised Dars-i-Nizami along with the secular subjects. Government appointed “Bangladesh Madrasa Education Board” supervises all the Alia

madrasas, prescribes their course – curriculum and conducts their examinations. Quomi madrasas in Bangladesh are private; receive no financial assistance from the government. These purely non-government religious institutions are supported by religious endowments, in terms of Zakat, Sadaqa & public donations. Researcher Mumtaz Ahmed opines that this financial autonomy of the Quomi madrasas is the prime source of independent religio-political power base of ulema in Bangladesh. It is because of this autonomy that the Quomi madrasas very often resist to the reforms that the government tries to do. Certificates awarded by the Quomi madrasas have no government recognition. That’s why the passed out students of Quomi madrasas often engage themselves in service to the religious establishments like mosques and madrasas, on a relatively poor salary or remuneration. On the other hand, graduates of Alia madrasa’s merge into the general stream of education and pursue higher studies in colleges and universities. In a survey, it was found that 32% of the University teacher’s (in Bangladesh) in Humanities and social sciences is the graduates of Alia madrasa system.¹⁷

There are another set of elementary level madrasas in Bangladesh which are called “Maktabas” or Ibtedai madrasas. Mumtaz Ahmed in his article “Madrasa Education in Pakistan and Bangladesh” quoted a report of Daily Dinkal, Dhaka dtd: 2/3/1998 which shows that there are 18,000 independent ibtedai madrasas, having 85,000 teachers and near about 2 million students in Bangladesh. These “Ibtedai” madrasas are playing a very crucial role in reducing illiteracy in rural Bangladesh. These are providing elementary education to the far flung remote areas with no primary schools in the locality. One significant aspect of these “Ibtedai” madrasas is that, these are the feeder institutions for both Alia and Quomi madrasas. It is estimated that, more than 70% of Alia madrasa students and more than 50% of the Quomi madrasa students are of Ibtedai background.

In Bangladesh, 80% students of the Quomi madrasas are of poor background. Rural areas of and small town’s of Syleth, Cittagong and some northern districts have traditionally been the main base of recruitment for Quomi madrasas. The student body of the Alia madrasa system is diverse. Now a days student of better off families although a small faction also gets enrolled in Alia madrasas which are dominated by lower middle class background students.

Let me now present an overview of the madrasa education system in Bangladesh in facts and figures. Types and levels of Madrasas in Bangladesh in three consecutive years have been shown in the following table of the development gateway statistics, taken from the Ministry of Education in Bangladesh.

(1) Types and Levels of Madrasas in Bangladesh (1998)¹⁸

Sl. No.	Levels of Madrasas	1995/96	1996/97	1997/98
(1)	Dakhil	4206	4487	4839
(2)	Alim	894	949	997
(3)	Fazil	890	899	953
(4)	Kamil	110	120	126
	Total	6100	6655	6915

(1) Number of students in Madrasas in Bangladesh (1998)¹⁹

Sl. No.	Type of Madrasas	1995/96	1996/97	1997/98
1.	Dakhil	1,174,000	1,296,000	1,370,000
2.	Alim	292,000	307,000	333,000
3.	Fazil	350,000	352,000	358,000
4.	Kamil	59,000	65,000	65,000
	Total	1,875,000	2,020,000	2,123,000

(1) Ibtidai madrasas and maktab's in Bangladesh (2000-01)²⁰

Total no. of Ibtidai madrasas —————18,000

No. of Teachers _____ 85,000

No. of students _____1,377,749

Profile of Madrasa Education in Bangladesh 2000-01²¹

Sl. No.	Type of madrasa	No. of madrasas	No. of teachers	No. of students
1.	Quomi (Private)	6500	13,000	1,462,500
2	Alia (govt. funded)	6906	100,732	1,878,300
	Total (Quomi + Alia)	13,406	230,732	3,340,800

Modern Type Madrasas:-

Things have changed a lot in our times. Now days, mere traditional religious education cannot address the real world problems that a student will encounter in his life. So, it is the necessity of the hour for a student to have an exposure to the modern education. A simultaneous study of religious and secular

subjects is much more needed in the present scenario. Keeping this in mind, **Madrasa Darur Rashad** has been established in Mirpur, Dhaka. This madrasa gives admission only to the college graduates. It offers a 5 year's course on Islamic studies. A brilliant effort which will widen the horizon of madrasa education in Bangladesh. Another such institution is "**Dhaka Cadet Madrasa**" which offers all subjects of general education along with the Islamic subjects. For general subjects medium of instruction is English and for Islamic subject's medium of instruction is of course Arabic. Standard of education in this madrasa is far better than that of public or private sector colleges. Moreover, Nadwa-linked (Nadwatul Ulama, Lucknow, India) madrasas in Chittagong are also an example of this new kind of madrasa education, where both Arabic and English are used as the medium of instruction. After completion of their course, most of the graduates of these madrasas merge to the modern educational institutions and pursue their higher studies. These madrasas also meet the demand for English-Speaking modern educated ulema to act as imams and khatibs for the immigrant Bangladeshi community in UK and North America.²²

Curriculum Reform's in Madrasas of Bengal:

Social, economic and political conditions of Bangladesh have drastically changed in the last few decades. Independence of Bangladesh in 1971 is a milestone in this regard. Islamic scholars (i.e. Ulema) of Bangladesh have adapted themselves to the emerging situations and adopted reforms in the madrasa curricula. Alia madrasa system is a spectacular example of how an adjustment has been made between modern secular education and the traditional religious education. Graduates of Alia madrasa system are in a much more advantageous position in comparison to their counter-parts in Quomi madrasa system. Contrary to the general perception and belief, traditional Quomi madrasa system in Bangladesh also underwent changes and reforms in the last few decades. Some of the changes are-

(1) Urdu has been replaced by Bengali as a medium of instruction in the Quomi madrasas. It is considered as an important step forward towards indigenization of Islamic scholarship in Bangladesh.

(2) Bengali has been made compulsory upto secondary level. Interesting to note over here that before 1972, Quomi madrasa's did not teach Bengali at any level despite the fact that Bengali is the mother tongue in Bangladesh.

(3) Subjects like politics, Economics, and History of Islam in the Indian sub-continent upto the establishment of Bangladesh in 1971 have been incorporated in the madrasa syllabus.

(4) English has been made compulsory at the primary level. Some madrasas even teach English in higher level as well.

(5) Elementary school education has been integrated with the Quomi madrasas wherein all subjects of general education are taught along with usual Islamic education.

(6) A separate subject of comparative religion has been incorporated to the Quomi madrasa syllabus to cultivate a better comparative understanding of several religions among the students.

(7) There are two major federations' of Quomi madrasas in Bangladesh viz. a) wafaqul Madaris, to which around 1500 madrasas have been affiliated and b) Anjuman-e-Ittehadul Madaris. More than 500 Quomi madrasas are affiliated to this federation. These two major federations facilitate centralized system of curriculum in the Quomi madrasas and also conduct the examinations in these madrasas.²³

Backnotes:

¹Islamer Abbhuday Abong Bangladesh. By Richard M. Eaton, page 16

²Sultani Amole Bangladesh Madrasah Sikhkhar utpatti O Bikash.By M. Abdul Karim.Page 11.

³Sultani Amole Bangladeshe Madrasah Sikhkhar utpalti O Bikash.By M. Abdul Karim.Page.15.

⁴<http://en.wikipedia.org/wiki/islam-in-Bangladesh>.

⁵Sultani Amole Bangladeshe Madrasah Sikhkhar utpalti O Bikash.By M. Abdul Karim. Page no. 12.

⁶ Sultani Amole Bangladeshe Madrasah Sikhkhar utpalti O Bikash. By M.Abdul Karim.Page12.

⁷<http://www.banglapedia.org>.

⁸<http://www.banglapedia.org>.

⁹<http://www.banglapedia.org>.

¹⁰<http://www.banglapedia.org>.

¹¹<http://www.banglapedia.org>.

¹²<http://www.banglapedia.org>.

¹³<http://www.bmeb.gov.bd>

¹⁴<http://www.banglapedia.org>.

¹⁵<http://www.banglapedia.org>.

¹⁶Article: Madrasa Education in Pakistan and Bangladesh. By Mumtaz Ahmad Mr. Ahmad is a professor in Hampton University's Department of Political Science.

¹⁷ Article: Madrasa Education in Pakistan and Bangladesh. By Mumtaz Ahmad Mr. Ahmad is a professor in Hampton University's Department of Political Science.

¹⁸ Islamic Education: A Brief History of Madrasas with comments on curricula and Current Pedagogical Practices. By Uzma Anzar.

¹⁹ Islamic Education: A Brief History of Madrasas with comments on curricula and Current Pedagogical Practices. By Uzma Anzar.

²⁰ Article: Madrasa Education in Pakistan and Bangladesh. By Mumtaz Ahmad.

²¹ Article: Madrasa Education in Pakistan and Bangladesh. By Mumtaz Ahmad.

²² Article: Madrasa Education in Pakistan and Bangladesh. By Mumtaz Ahmad.

²³ Article: Madrasa Education in Pakistan and Bangladesh. By Mumtaz Ahmad.

Works Cited:

1. Islamer Abbhuday Abong Bangladesh. By Richard M. Eaton, Published by Islamic Foundation, Bangladesh. Edition 2009
2. Sultani Amole Bangladesh Madrasah Sikhkhar utpatti O Bikash. By M. Abdul Karim
3. Article: Madrasa Education in Pakistan and Bangladesh. By Mumtaz Ahmad Mr. Ahmad is a professor in Hampton University's Department of Political Science.
4. Islamic Education: A Brief History of Madrasas with comments on curricula and Current Pedagogical Practices. By Uzma Anzar.
5. <http://www.banglapedia.org>.
6. <http://www.bmeb.gov.bd>
7. <http://wikipedia.org/wiki/islam> in Bangladesh.

**GUTA OFFICE BEARERS
2017-18**

President

Prof Archana Sharma
Department of Economics
Email : archanasharma@gauhati.ac.in

Vice Presidents

Prof Diganta Kumar Das
Department of Chemistry
Email : diganta_chem@gauhati.ac.in

Prof Bibha Bharali
Department of Assamese
Email : bibha@gauhati.ac.in

General Secretary

Dr Kushal Kalita
Department of Physics
Email : kkalita@gauhati.ac.in

Joint Secretaries

Dr Baharul Ali
Department of Persian
Email : baharulgu@gauhati.ac.in

Dr Tilak Hazarika
Department of Library and Information Science
Email : tilakdlis@gauhati.ac.in

Treasurer

Dr Sunanda Naik
Department of Applied Sciences (GU-IST)
Email : snaik@gauhati.ac.in

Ex-Officio Members

Prof Bhagawat Pran Duarah
(Ex-President)
Department of Geological Sciences
Email : bpduarah@gauhati.ac.in

Dr Jagadish Sarma
(Ex-General Secretary)
Department of Sanskrit
Email : jagadishsarma@gauhati.ac.in

**Members of the Executive Committee
(Representatives of the Academic
Departments)**

Anthropology

Prof Dwipen Bezbarua
Email : dwipen@gauhati.ac.in

Arabic

Dr Mizazur Rahman Talukdar
Email : mizaj@gauhati.ac.in

Assamese

Prof Taranee Deka
Email : taraneedeka@gauhati.ac.in

Bengali

Dr Sanjay Bhattacharjee
Email : brjsanjay24x7@gauhati.ac.in

Botany

Dr Kumananda Tayung
Email : kumanand@gauhati.ac.in

Business Administration

Dr Samir Sarkar
Email : ssarkar@gauhati.ac.in

Chemistry

Dr Rupam Jyoti Sharma
Email : rjs@gauhati.ac.in

Commerce

Dr Tilak Chandra Das
Email : tilak@gauhati.ac.in

Communication and Journalism

Dr Ankuran Dutta
Email : adutta@gauhati.ac.in

Computer Science

Dr Dwipen Laskar
Email : laskardwipen@gauhati.ac.in

Economics

Dr Ratul Mahanta
Email : rmeco@gauhati.ac.in

ECT

Mr Kumaresh Sarma
Email : kumaresh@gauhati.ac.in

English

Dr Farina Hussain
Email : fardinah@gauhati.ac.in

English Language Teaching

Prof Anita Tamuli
Email : anita.tamuli@gauhati.ac.in

Environmental Science	Linguistics
Prof Sarveswar Kalita Email : skalita53@gauhati.ac.in	Dr Seuji Sharma Email : seujisharma@gauhati.ac.in
Foreign Languages	Mathematics
Prof Kandarpa Das Email : kandarpadas@gauhati.ac.in	Dr Chandra Rekha Mahanta Email : crmahanta@gauhati.ac.in
GUIST	MIL & Literary Studies
Dr Kandarpa Kumar Saikia Email : kksaikia@gauhati.ac.in	Prof Dilip Borah Email : dilipborah@gauhati.ac.in
Geography	Philosophy
Dr Dhrubajyoti Sahariah Email : dhrubajyoti@gauhati.ac.in	Prof Sauravpran Goswami Email : sauravpran2@gauhati.ac.in
Geological Sciences	Physics
Dr Bikash Gogoi Email : bikash.gogoi@gauhati.ac.in	Prof Madhurjya P Bora Email : mpbora@gauhati.ac.in
Hindi	Political Science
Prof Dilip Medhi Email : dkmedhi1@gauhati.ac.in	Prof Jayanta Krishna Sarmah Email : jayanta1947@gauhati.ac.in
History	Psychology
Prof Rajib Handique Email : rajibhandique@gauhati.ac.in	Dr Manidipa Baruah Email : drmanidipa@gauhati.ac.in
Instrumentation & USIC	Sanskrit
Prof Utpal Sarma Email : utpalsarma@gauhati.ac.in	Dr Kameshwar Shukla Email : kshukla@gauhati.ac.in
Library and Information Science	Sociology
Prof Rajani Kanta Barman Email : rkbarman@gauhati.ac.in	Dr Kaberi Das Email : kaberi.das@gauhati.ac.in

Statistics

Prof Amit Choudhury
Email : achoudhury@gauhati.ac.in

Zoology

Dr Dandadhar Sarma
Email : sarmadd@gauhati.ac.in

Women's Studies

Dr Polly Vauquiline
Email : pollyvauquiline@gauhati.ac.in
