

Prof. I. P. Goudam

2018



ISSN : 2394-0123

Vol.V, Issue-II
December, 2018
Bi-annual

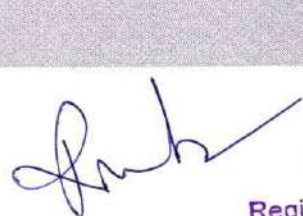
Journal of Research and Innovations in Social Science

(A Peer Reviewed Journal)



The Hermitage

Regd. No. : 7201800475/2018
Rajbati Nagar, At / PO : Athgarh,
Dist : Cuttack, Odisha, India


प्राचार्य/PRINCIPAL
क्षेत्रीय शिक्षा संस्थान
Regional Institute
भुवनेश्वर / Bhubaneswar, Odisha

Contents

Sl. No.	Title	Page No.
1	Science and Teaching Science <i>Dr. Narendra Prasad Das</i>	01
2	Understanding of Nature of Science and its Different Aspects <i>Priyanka Kishore</i> <i>Dr. Gowramma I.P.</i>	05
3	Historical Perspectives of Constructivism and Essential Practices of Constructivist Pedagogy <i>Twinkle Mishra</i>	14
4	Open and Distance Learning : Vision for Future <i>Dr. Saroj Kr. Mishra</i>	21
5	English Teaching in Participatory Mode : A Boon to Secondary School Teachers in Gujarat <i>Mr. Ketan Parmar</i> <i>Dr. Prados Kumar Pati</i> <i>Prof. N.V. Bose</i>	25
6	Problems and Prospects of Engineering Education <i>Saurav Darshana Mohapatra</i>	36
7	Sri Sri Thakur Anukul Chandra on Methods of Education and Discipline <i>Dr. Mandardhar Sahoo</i>	38



 प्राचार्य/ PRINCIPAL
 क्षेत्रीय शिक्षा संस्थान
 Regional Institute
 भुवनेश्वर / Bhubaneswar.

UNDERSTANDING OF NATURE OF SCIENCE AND ITS DIFFERENT ASPECTS

Priyanka Kishore *
Dr.Gowramma I.P.**

A B S T R A C T

Nature of Science (NOS) is considered as the integral part of the process of teaching and learning science. To have a proper understanding on the different aspects of NOS for pre-service teachers is crucial. Therefore, it is very important to know the level of understanding of pre-service teachers on NOS. This study was designed to know the level of understanding of pre-service teachers on the different aspects of NOS. This descriptive research deals with qualitative data collected by using the open ended questionnaire of tool VNOS-C and the given responses was interpreted and analyzed to understand the level of understanding of participants by assigning them score as naïve, transitional and informed level as described in the rubric of the tool.

Keywords : Nature of Science, Different Aspects of NOS, Knowledge and Understanding of Science, Pre-service Teachers.



Introduction

Since time immemorial knowledge of science has prime position in the life of human beings because it covers all most all the dimensions of human existence. According to the position paper National Focus Group on teaching of science (NCF, 2005) human beings always showed curiosity towards the world which surrounds them. The capacity of imagination and being curious lead one to investigate more, look for the meaningful explanation of any pattern and relations and try to seek answer of all the unexplained phenomena of the world. Science conveys the process of interacting with nature and deriving meaning to it to understand the different phenomena of our surroundings. Science is dynamic and it is an expanding body of knowledge which covers all the domains of new experience.

Now the question comes how this knowledge in science is generated? What do we understand by the scientific method? And this answer needs a number of interconnected steps, called as the methodology of scientific research like observation,

* Research Scholar, Utkal University, RIE (NCERT), Bhubaneswar, Odisha

** Professor, Department of Education, RIE (NCERT), Bhubaneswar, Utkal University, Odisha



प्राचार्य/PRINCIPAL
क्षेत्रीय शिक्षा संस्थान
Regional Institute of Education
Bhubaneswar

School Readiness of ST Children in Government ECCE Centers: Quality, Equity and Inclusive perspectives

Dr. Laxmidhar Behera & Dr. I.P.Gowramma

The early six to eight years of child's life are regarded to be the most critical years for lifelong development as the pace of development during these years is extremely rapid. So the National Policy on Education (1986) recognized the importance of early childhood care and education (ECCE) and suggested to make ECCE programmes child oriented with a focus around play and individuality of the child. The 86th Constitution Amendment Act 2002 has altered the article 45 to read, "The state shall endeavour to provide early childhood care and education to all children until they complete the age of six years". Early childhood care education (ECCE) is a critical input for child development. The ECCE programme helps in school readiness.

School readiness has been based on the assumption that there is a predetermined set of skills and abilities that all children need before entering primary school. Most specifically in India, it is assumed that children entering primary schools would have achieved the basics of Reading, Writing and Arithmetic (commonly known as 3R's). A large number of children in our country are first generation learners and come to school without social, academic or language readiness (Govt. of India, 2013). What we expect children to know and do before entering school will be guided by three basic factors:

35	Inclusive Education: Agenda and problems Mr Antarjyarni Gouda	330
36	A National Seminar Paper on RTE Act 2009: A Promise to Quality Education; Issues and Challenges Soumyaranjan Ghadei	335
37	Inclusion of Children with Special Needs: Challenges and Strategies to Overcome Ajit Kumar Barik	346
38	Inclusive Education in India, Challanges and Possible Remedies Prakash Sahoo	357
39	Activity based Approach in Teaching Learning Process Pallavi Mahana	368
40	Perception of Students and Teachers Towards Choice Based Credits System in Higher Education With Regards to Quality and Challenges Jagadish Biswal	376
41	Challenges of Indian Education : Quality, Equity and inclusiveness Lingaraj Naik	388
42	Challenges of Indian Education : Quality, Equity and Inclusiveness Rajendra Kumar Nayak	409
43	Challenges of Indian Education : Quality, Equity and Inclusiveness Hattakishor Pallei	423
44	Challenges of Indian Education : Quality, Equity and Inclusiveness Prahallad Sahoo	441
45	Regional Imbalance in Indian Education System Pabitra Mohan Mahabhoi	458
46	Regional Imbalance in Education Trilochan Pradhan	463
47	Nature and Causes of Regional Imbalance in Education Kalucharan Sarangi	472
48	Towards Quality Elementary Education : A Case Study of Project Upper Primary School of Takiria Berhampur J Kurma Rao	478
49	Challenges of Indian Education : Quality, Equity and Inclusiveness Keshari Behera	486
50	Challenges of Indian Education Quality, Equity and Inclusiveness Manas Kumar Mallik	493



 प्राचार्य/ PRINCIPAL
 क्षेत्रीय शिक्षा संस्थान
 Regional Institute of Education
 भुवनेश्वर / Bhubaneswar-751022

16	Technological Challenges for Teaching Professional in Higher Education Dinesh Maharana	152
17	Inclusive Education at Elementary Level; An Analysis in the light of Policy, Practices And Attitude Of Elementary School Teachers Chandrakala Bagarti	160
18	Determinants of Regional Imbalances in Education : A Reflection Jashobanta Nayak	170
19	Twelfth Five Year Plan and Prospect of Indian School Education System After its Climax Satyabrata Sahoo	179
20	Technological Initiatives in Five Year Plans for Secondary School Education Dhaneswar Behera & Sonalika Biswal	189
21	Challenge and Issues for Educating Marginalized Children Digambar Naik	200
22	Innovative Techniques for Enhancing Learning Outcomes at Elementary Level Mr. Venkateswar Meher & Dr. Iswar Patel	213
23	Accessibility and Quality of educational provision for Children with Special Needs concerning to its equity and inclusion Twinkle Panda	224
24	Inclusive School for Equality and Equity in Education for Learners with Learning Barriers: An Analysis of Theory & Practices Aashish & Sangeeta	239
25	Elementary School Dropouts : Selected Case Studies Simarani Behera	248
26	Reading Performance in English Language at Elementary School Level Twinkle Mishra	258
27	Education of Girls' Children in Inclusive Educational Approach Challenges and Healing Strategies Dr. Ajaya kumar Penthoi	267
28	A Study on Study Habit and Teachers Attitude Towards the Children with Special Needs at Elementary Level Prasanta Kumar Panigrahi	276
29	Special Education 'A Need' Dr. Santosh Kumar Rath	282
30	Challenges of Inclusiveness of Street Children in Universalization of Elementary Education Chintamani Majhi	288
31	Identification of Hearing Impaired Children in Inclusive Education Bhaktiprasa Pradhan	300
32	Addressing Issues Education of Marginalized Group Pravat Kumar Sahoo and Anadi Charan Behera	306
33	Challenges of Quality in Education of SC/ST Children in Schools Ramakanta Pradhan	317
34	Provisions of Right to Education Act, 2009 in Maintaining Quality, Equity and Inclusiveness in Elementary Education Anuradha Parida	321

Contents

	Foreword	i
	Preface	iii
	Recommndation of the seminar	vii
1	Challenges of Indian education: Quality, equity and Inclusiveness Kishore Chandra Mohanty	1
2	Awareness of Elementary School Teachers about Inclusive Education Dr. Sudarshan Mishra	6
3	School Readiness of ST Children in Government ECCE centers: Quality, Equity and Inclusive perspectives Dr. Laxmidhar Behera & Dr. I.P.Gowramma	20
4	Practicing 5E Model of Teaching in B.Ed Colleges of Odisha : Ground Level Realities Dr. Manoranjan Pradhan	35
5	Recent Trends of Open and Distance Learning in Higher Education Dr. Gyanendra Kumar Rout	42
6	Challenges of School Education : Quality & Equity Dr. Tarulata Devi	57
7	Improvement in Teaching-Learning Practices for Quality Higher Education Dr. Sabita Mishra	65
8	Revamping of Higher Education in Odisha through Rashtriya Uchchatar Shiksha Abhiyan Dr. Bimal Charan Swain	72
9	Quality Education - Panacea for all Problem Dr. Chitta Ranjan Panda	85
10	Inclusive Education : Policy and Implementation Perspectives in India Dr. Krupasindhu Karan	87
11	Development of Constructivism at the Elementary Education Level Dr. Mrs. Surekha Sundari Swain	99
12	Elementary School Dropouts : Selected Case Studies Dr. Gitanjali Mohanty	112
13	NAAC : Quality Assurance in Higher Education Dr. Swachha Salila Mohapatra	126
14	Higher Education in 12th Five Year Plan- Strategies for Enhancing Access, Equity and Quality Dr. Rajalakshmi Das	136
15	Online Teaching: An Innovative Way of Disseminating Knowledge Dr. Akshya Kumar Panda	146



 प्राचार्य / PRINCIPAL
 क्षेत्रीय शिक्षा संस्थान
 Regional Institute of Education
 भुवनेश्वर / Bhubaneswar-751 003

Quality Equity and Inclusiveness in School Education
Vision, Policy and Implementation Issues

© Shiksha Vikash Samiti, Odisha
First Edition - 2018
ISBN : 978-81-926149-4-6

Editors :

Nityananda Pradhan
Sidhanath Sahoo
Tarulata Devi

All rights reserved. No part of this work may be produced, stored in a retrieval system or transmitted in any form or by any means-electronic, mechanical, photocopying, micro-film recording, or otherwise or translated in any language without prior written permission of the publisher. The ideas or opinions expressed in each of individual chapters are of the concerned author(s).

Printed in India at :

PIONEER PRINTING SOLUTIONS PVT. LTD.
Mancheswar, Bhubaneswar, Odisha.

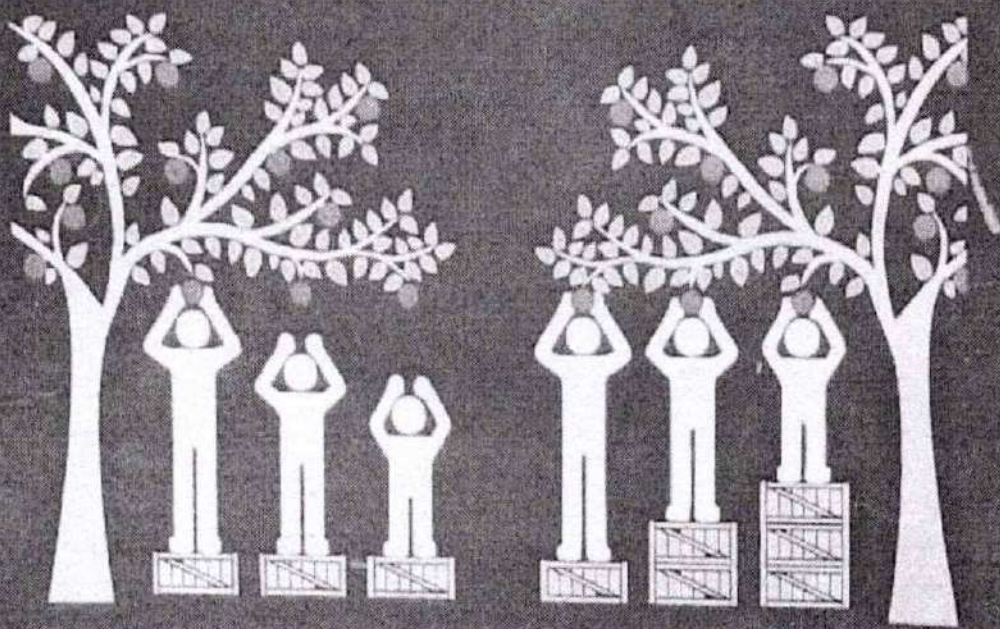
Published by :



Shiksha Vikash Samiti, Odisha
Saraswati Kunja, E-59, Sector-A, Zone-A
Mancheswar Industrial Estate,
Bhubaneswar-751010, Odisha

Quality Equity and Inclusiveness in School Education

Vision, Policy and Implementation Issues



Shiksha Vikash Samiti, Odisha

2018

Book
Chapter

1. P.O



[Signature]
Principal
Regional Institute of Education
Bhubaneswar / Bhubaneswar-751022



International Journal of Applied Research

ISSN Print: 2394-7500
ISSN Online: 2394-5869
Impact Factor: 5.2
IJAR 2017; 3(6): 984-988
www.allresearchjournal.com
Received: 27-04-2017
Accepted: 29-05-2017

Gouranga Biswas
Student, Department of
Education, RIE, Bhubaneswar
Odisha, India

Dr. Dhanya Krishnan
Assistant Professor,
Department of Education,
RIE, Bhubaneswar Odisha,
India

A study on dropout of tribal students at secondary level in Hooghly district, West Bengal

Gouranga Biswas and Dr. Dhanya Krishnan

Abstract

The present study examines dropout issue among tribal students at secondary level in Hooghly District of West Bengal. A qualitative survey method was adopted wherein 8 schools from 2 blocks (randomly) of Hooghly district were selected as sample. School records, questionnaire and interview schedule were used to examine the dropout rate, male-female comparison and factors affecting dropout. The study found that dropout rate has been increased from 2014-15 to 2015-16 among tribal students at secondary level. It is also found that the percentage of boys who had dropped out is more than that of girls among tribal students. A qualitative analysis of interview data revealed that major factors associated with dropout are poor economic condition, lack of conducive learning environment at home, attitude of parents towards schooling, lack of aspiration and attitude of non-tribal students towards tribal students.

Keywords: dropout, tribal students, Hooghly, qualitative survey, factors associated

Introduction

In the context of modernisation and globalisation, importance of education cannot be neglected as it is the most singular and important means for building human capabilities - the essential and individual powers to reflect, make choices, seek a voice in the society and improve personal endowments. Hence education serves as one of the most powerful instruments known for reducing poverty and inequality and for laying the basis for sustained economic growth. Especially school education during the 14-16 years of age raises the capacity of people to perform their social, economic, political and other functions efficiently. If we need to develop and compare ourselves in the race for development in the world we will have to begin from secondary education in terms of quantity, quality and equity.

The Scheduled Tribe population represents one of the most economically impoverished and marginalized groups in India. With a population of more than 10.2 crores, India has the single largest tribal population in the world. This constitutes 8.6 percent of the total population of the country (Census of India, 2011). Education is in fact, an input not only for economic development of tribes but also for inner strength of the tribal communities which helps them in meeting the new challenges of life. It is time that we recognize the rising levels of democratic consciousness and social aspirations among the young people particularly from the deprived sections of society, for a greater share in nation's political, social and techno-economic life. Another reason to entreat for Universal Secondary Education is related to the issue of equality and social justice as enshrined in the Constitution. As per CAME report (2005) [13, 18] on Universalizing Secondary Education, such a crucial policy for benefiting the Dalits and tribal cannot benefit the majority of these historically exploited sections of the society. This is because a large majority of children and youth belonging to SC and ST community do not have access to secondary education; without secondary or senior secondary education, benefits of reservation to SCs/STs will remain elusive. In view of this, the Central and the State/UT governments had initiated to implement the agenda of universal secondary education in the first phase by the year 2015 and then to senior secondary education in the second phase by the year 2020. It can be concluded that secondary education will be meaningful only if education reaches to all the sections of the people otherwise it will fail to achieve the target of Universalization of Secondary Education. The inequity in provision is further accentuated as the quality of education provided remains quite unsatisfactory particularly disfavours the progress of children from disadvantaged groups.

Correspondence
Gouranga Biswas
Student, Department of
Education, RIE, Bhubaneswar
Odisha, India

[Handwritten signature]

[Handwritten signature]

प्राचार्य/ PRINCIPAL
क्षेत्रीय शिक्षा संस्थान
Regional Institute of Education
भुवनेश्वर / Bhubaneswar-751022

Alternative Conceptions in Physics among Secondary School Students

DHANYA KRISHNAN*

Abstract

Considering the explorative nature of Physics and its intricate disciplinary characteristics, science educationists were always curious to explore how children learn Physics. It is a well-acknowledged fact that concept acquisition is a very active process wherein learners identify essential attributes and construct new conception integrating with already built conceptions in the mind. During the process of acquisition of concepts, learners may view the world in the form of concepts which are deviant from accepted notion of knowledge which are termed as alternative conceptions. If the alternative conceptions are not dealt at the secondary level, the probability of sustaining those alternative frameworks of conceptions may continue at higher learning too. This research paper attempts to identify alternative conceptions in Physics among secondary school students of D.M. School of Regional Institute of Education (RIE), Bhubaneswar, Odisha. All 9th standard students of D.M. School were considered as the sample. A two-tier concept attainment test and a semi-structured interview were used to collect the data. The data was qualitatively analysed with specific intention to explore students' alternative conceptions in the themes—Motion, Force, Sound, Light and Electricity. The findings suggest that a well-constructed system of pedagogical design is to be integrated in the teaching-learning process so that alternative conceptions in Physics could be redirected to conceptual change among learners.

INTRODUCTION

Physics is an exciting intellectual endeavour which tries to explore knowledge about nature and is

an inevitable component of school science as a part of integrated science at secondary level and as a disciplinary study at senior secondary

* Assistant Professor, Regional Institute of Education, Bhubaneswar, Odisha, India.



प्राचार्य/ PRINCIPAL
क्षेत्रीय शिक्षा संस्थान
Regional Institute of Education
भुवनेश्वर/ Bhubaneswar-751022

विद्यया ऽ मृतमश्नुते



एन सी ई आर टी
NCERT

JOURNAL OF INDIAN EDUCATION

Volume XLIII

Number 2

August 2017

CONTENTS

EDITOR'S NOTE	3
Life, Ideals and Learning(s) to be a 'Teacher' in B.Ed. Interactions, Observations and Learning ALEX M. GEORGE AND RAM MURTI SHARMA	5
Teaching Competencies of Newly Recruited Faculty of Agricultural Universities An Analysis D. THAMMI RAJU, P. RAMESH, G.R.K. MURTHY AND S. SENTHIL VINAYAGAM	25
A Study on the Acquisition of Paralinguistic Features of Oral Presentation Skills Challenges to the Rural Students DEVIKA	36
Alternative Conceptions in Physics among Secondary School Students DHANYA KRISHNAN	43
Cooperative Learning An Innovative Practice for Enhancing Leadership and Decision-making Skills through Science Teaching MARY VINEETHA THOMAS AND R.G. KOTHARI	51
Academic Achievement of Senior Secondary School Students An Analysis on the basis of Self-regulated Learning and Some Demographic Variables MADHU GUPTA AND DIMPLE MEHTANI	60
Plagiarism in Education Programmes Legitimised Dishonesty or Lack of Awareness? HEMA RAMACHANDRAN, DIVYA SINHA AND MEDHA S. RAJADHYAKSHA	76

Sh

Agarwal
प्राचार्य/ PRINCIPAL
क्षेत्रीय शिक्षा संस्थान
Regional Institute of Education
भुवनेश्वर / Bhubaneswar-751022

ISSN 0377-0435 (Print)
0972-5628 (Online)

2017



Journal of Indian Education

Volume XLIII

Number 2

August 2017

विद्यया ऽ मृतमश्नुते



एन सी ई आर टी
NCERT

राष्ट्रीय शैक्षिक अनुसंधान और प्रशिक्षण परिषद्
NATIONAL COUNCIL OF EDUCATIONAL RESEARCH AND TRAINING

Handwritten signature

Handwritten signature

प्राचार्य/ PRINCIPAL
क्षेत्रीय शिक्षा संस्थान
Regional Institute of Education
भुवनेश्वर

Gender Sensitivity and Responsiveness of Schools in Odisha

Prof. Ritanjali Dash*

It is widely accepted that gender differences are constructed in the society and school being a miniature society reinforces these differences by attributing certain behaviours and characteristics to one gender over the other and then acting accordingly. Researchers suggest that schools reflect practices in societies.¹ Key points shown by research into gender differences in education indicate that boys and girls produce constructions of gender (masculinity and femininity) that 'fit' social norms in the peer group and in wider society.² These include giving preference and more time to particular behaviours, interests, and school subjects whilst shunning or avoiding others. These gendered behaviours 'are deep-seated, and children enact these without being unconsciously aware of them,' but they vary depending on the child's social class and ethnicity; constructions of gender difference by teachers, pupils and other stakeholders.³ It is expected that the gender related issues can be managed by challenging notions of gender itself. This paper makes an effort to use gender, concerning problems and expectations of both boys and girls in schools.

Addressing these gender issues require not only intellectual understanding and effort but also sensitivity and open mindedness to accept views, perspectives and values different from the existing ones. Sensitivity of schools in general, sensitivity of teachers and parents towards the needs and experiences of both genders in particular is essential for fulfilling the objective of gender equality. This study makes a humble attempt to analyse how sensitive are the teachers, community and the stakeholders to the different needs of girls and boys and how do they respond to their problems.

OBJECTIVES OF THIS RESEARCH ARE THE FOLLOWING

1. To examine the gaps in gender sensitivity and responsiveness of secondary schools of Odisha with respect to the following:
 - Security and health issues
 - School and classroom activities
 - Guidance and Counselling
 - Teaching and Learning materials
 - Student participation in decision making
 - Responsiveness of Teachers, Community and Parents

METHODOLOGY

For analysing the sensitivity and responsiveness of schools to the needs and expectations of both the genders, certain parameters have been taken into consideration. Checklist prepared by CBSE and the training Manual prepared by UNESCO was referred to for selection of the parameters. The checklist for Gender Sensitivity consists of gender sensitive parameters which should be followed to promote gender sensitivity in classroom transaction and extra-curricular activities. The checklist identifies the specific standards that the schools should conform to in order to build and support

*Prof in Economics & Head of the Department of Education in Social Sciences & Humanities, Regional Institute of Education (NCERT).



प्रधान/PRINCIPAL
क्षेत्रीय शिक्षा संस्थान

Vol. XIII
Number-1

R.O.



ISSN 2319-8265

Jan.-Feb. 2018 (Special Issue)

EDUCATION TIMES

**A Peer Reviewed Journal of
Education & Humanities**

APH PUBLISHING CORPORATION

Handwritten signatures in blue ink.

Regional Institute of Education
Singapore

Gender Bias in Schools

Prof. Ritanjali Dash*

Gender bias and gender inequality exists everywhere. Gender bias is behaviour that shows favouritism towards one gender over another. Gender bias occurs when people make assumptions regarding behaviours, abilities or preferences of others based upon their gender.¹ Gender bias is believed to be socially constructed. These gender bias results in gender inequality which have a negative impact on both individual and societal development. Individuals do get affected by such inequalities related to gender by having a low self-esteem, frustrations and resentment. Boys and girls fail to achieve their full potential, their roles in society and family gets restricted because of biased expectations. Gender inequalities impede economic growth, social cohesion and social justice. Gender inequalities in family and the broader society also provide negative models for children and young people of 'legitimate' ways of treating others unfairly, of exploiting them and depriving them of their human rights.

Researchers are of the opinion that schools reflect practices in societies. Gender bias and problems are socially and culturally constructed. Cultural and societal practices affect children in schools, especially the way they look at their peers of the opposite sex.² Cultural beliefs and societal structures influence attitude of one gender towards the other, their expectation from the other gender.

Since 1970s concern had been expressed that formal education system reproduces gender differences and inequalities instead of eliminating it. Research studies indicate that Schools affect gender differentiation. Teachers and peers directly influence gender differentiation by providing boys and girls with different learning opportunities and feedback. However curricular materials that contain gender stereotypic behaviour, too exercise influence on the children as per the societal norms.³ Though teachers are often blamed for this, in actuality the caution must be exercised by the curriculum developers while writing down text books and other resource materials. Effort needs to be made to keep stereotypes away from textual materials. Children internalize gender stereotypes and prejudices, which in turn guide their own preferences and behaviours.

Many educators endorse cultural gender stereotypes (e.g., math is easier for boys than girls) and prejudices (show preferences for same-gender individuals).⁴ Sometimes consciously and sometimes unconsciously teachers exercise biases in their classroom behaviours.

Teachers' gender stereotypes and prejudices shape their classroom behaviour in three ways. First, teachers often model gender stereotypic behaviour. Teachers often exhibit differential expectations for males and females. Third, teachers facilitate children's gender biases by marking gender as important by using it to label and organize students.⁵

Like teachers, peers contribute to the socialization of gender difference in multiple ways. Children encounter large numbers of peers and seniors, many of whom model traditional gender behaviour, producing and reinforcing the content of gender stereotypes.

Gender segregation is found everywhere in schools. Children play, do activities, with children of the same sex group. They hardly share things with children of the opposite group. The school space remains segregated for boys and girls for all curricular and co-curricular experiences. Such gender segregation, however affects their experiences, their behaviour towards the opposite gender leading them to conform to such stereotypes in the future. Peers also contribute to gender differentiation by

* Bhubaneswar.

Vol. XIII
Number 1

Prof. R.D.



ISSN 2319-7129

May 2018



EDU WORLD

**A Peer Reviewed/Refereed Journal of
Education and Management**



APH PUBLISHING CORPORATION

Handwritten signature

ISSN 0019-4700 (Print)
ISSN 0972-561X (Online)

Indian Educational Review

Volume 56

Number 2

July 2018

RESEARCH REVIEW ARTICLE

Research in Education of Children with Disabilities

RESEARCH PAPERS

How Distant is 'Inclusion'? A Study of Delhi School Teachers

Effect of Gender, Region and Type of School on Social, Cognitive and Affective Skills of Higher Secondary School Students



राष्ट्रीय शैक्षिक अनुसंधान और प्रशिक्षण परिषद्
NATIONAL COUNCIL OF EDUCATIONAL RESEARCH AND TRAINING

[Signature]

प्राचार्य/PRINCIPAL
क्षेत्रीय शिक्षा संस्थान
Regional Institute of Education
राजस्थान / Rajasthan 361022

ANWESHAN: JOURNAL OF EDUCATION

(A Bi-annual Interdisciplinary
Research Journal of Education)

Systemic Reform of Teacher Education India: Issues and Challenges

Dr. Gowramma IP* & Dr. Elizabeth Gangmei**

Abstract

Over the last decades, teachers have often been identified as 'key' players for the improvement of education system, as such teacher education programme continued to be a major concern globally as well as in India. It is also well acknowledged that teacher education system is the fulcrum which must support tapping and nurturing manpower potentiality in the field of education. Moreover, it is generally agreed that knowledge societies demand teachers who can think critically, reflective practitioner, and work collaboratively, which is the product of a robust system of teacher preparation. Thus, to bring changes and transformations in the system, it is pertinent to identify the issues, analysing the root cause and find ways of addressing them. Thus, the main focus of the paper is to comprehensively discuss the issues and challenges and give suggestion for effective practices in teacher education programme in India.

Keywords: teacher education, systemic concerns, issues & challenges

Introduction

Teachers are central to the enterprise of education and there is no dispute to the fact that the availability of the well trained teachers and teacher educators are vital to the school improvement efforts. As such, over the years, recommendations of policy documents and commission reports have reiterated to strengthen teacher education for preparing teachers as active agents of social change. Teachers' preparation and development is a significant contributor towards efforts to equitably improve access to quality education as observed by the Joint Review Mission – Teacher Education (JRM – TE, 2013) constituted by the Ministry of Human Resource Development. The present paper examines the teacher education scenario in India which was also addressed by UNESCO world education report,

* Professor in Education RIE, Bhubaneswar, gowriip@yahoo.co.in

** Assistant professor in Education RIE, Bhubaneswar, gangmele@yahoo.com

Technological Pedagogical Content Knowledge of Secondary Teacher Educators of Jharkhand; An Analysis

Mr. Sandip Kumar

Research Scholar, Regional Institute of Education (NCERT), Bhubaneswar, India

Dr. Elizabeth Gangmel

Assistant Professor, Department of Education, Regional Institute of Education (NCERT), Bhubaneswar, India

Abstract: This paper focuses on assessing TPACK skills among teacher educators are teaching in secondary teacher education college of Jharkhand in India. The purpose of this study was; to assess Technological Pedagogical Content Knowledge of teacher educators teaching in Secondary Teacher Education College. Descriptive survey method was used and the instrument used in data gathering was questionnaire, observation and interview. This study revealed that: The TPACK of teacher educator was low. The maximum percentage (50%) of teacher educator lie in low, 16% have high level, and 34% have average TPACK. Those teacher educators have less content knowledge they, have not good infrastructure of college, have no attitude towards teaching and didn't take participate in the ICT base orientation program or seminar or workshop. Those teacher educators have high TPACK, their classroom activities were good. The study also found out about 90% of teachers used smartphone but they were not able to use in the classroom for teaching learning process. So it is big challenge for Government and teacher education institution to uplift and enhance the quality of education.

Keywords: Teacher Educator, Information and Communication Technology (ICT), Pedagogical Content Knowledge (PCK), Technological Pedagogical Content Knowledge (TPCK)

1. INTRODUCTION

The advancement of information and communication technology (ICT) in education has been greatly influenced to the teacher education and teaching learning process. It is possible to bring the process of learning beyond the boundaries of classroom by exploring new technology. All over the world, Teacher Education College are being forced to find better pedagogical methods to cope new challenges. The Teacher education needs to acquire the technological skills to use the tools and the pedagogic skills to develop materials and activities. When learning takes place through ICT, it opens new opportunities, like; no limitations of time and place. As an innovative tool, technology has played a central role in improving teaching and learning in light of educational reforms around the globe (Kahveci, Sahin and Genc, 2011).

With an emphasis on preparing teacher for 21st century, it appears to be important for educators to incorporate 21st century skills in teacher education college programme. The National Council for teacher education accepted that the effective usage of ICT in the classroom is correlated to positive academic outcomes, including higher test scores, better attitudes towards school, and better understanding of abstract concept. Teacher educators need to acquire the technological skills to use the tools and the pedagogic skills to develop materials and activities. This requires educators to provide opportunities for their students to experience representations of the content within a technology framework (Crowe, 2004; Keeler, 2008; Moore, 2006). Lee Shulman (1986) proposed the concept of pedagogical content knowledge; Mishra and Koehler's (2006) developed TPACK conceptual framework combines three forms of teacher knowledge; Content, Pedagogy, and Technology. The framework, in which infuse technology with content is called as technological pedagogical content knowledge. Originally TPACK framework is now known as TPCK, or Technology Pedagogy Content Knowledge. The development of TPACK skills among teacher educator is critical to effective teaching with technology. Combination of three forms of teacher knowledge are necessary for effective teaching with technology; Content, Pedagogy, and Technology. The interaction of these bodies of knowledge, both theoretically and in practice, produces the types of flexible knowledge needed to successfully integrate technology use into teaching. The framework for teacher educator knowledge for technology integration

ISSN 0377-0435 (Print)
0972-5628 (Online)

विद्यया ऽ मृतमश्नुते



एन सी ई आर टी
NCERT

JOURNAL OF INDIAN EDUCATION

Volume XLIV

Number 1

May 2018

CONTENTS

Editor's Note	3
Ethics within a Spiritual/Metaphysical World View towards Integral Value-based Education—European Educationists: Steiner and Montessori ALBERT FERRER	5
Analysing the Philosophical Ideas of Nel Noddings on Empathy and Care SHALINI YADAVA	37
Teacher's Perception Regarding Inculcation of Values through Mathematics T.P. SARMA AND KOMAL	47
Cartoon: A Constructive Pedagogical Instrument ARUNRAJ AND M. SUGANTHI	57
Teaching Chemical Reaction: Focus on Nature of Science STUTI SRIVASTAVA	66
Digital ICT in Education: Deconstructing Myths and Realities V. RAMADAS	72
✓ Educational Challenges of the Minority Educational Institutions at Odisha ELIZABETH GANOMEI AND GOWRAMMA I.P.	89

R/

Principal

प्राचार्य/ PRINCIPAL
क्षेत्रीय शिक्षा संस्थान
Regional Institute of Education
भुवनेश्वर/ Bhubaneswar-751022

विद्यया ऽ मृतमश्नुते



एन सी ई आर टी
NCERT

ISSN 0019-4700 (Print)
ISSN 0972-561X (Online)

HALF-YEARLY JOURNAL OF EDUCATIONAL RESEARCH

INDIAN EDUCATIONAL REVIEW

Volume 56

Number 2

July 2018

CONTENTS

EDITORIAL 3

RESEARCH REVIEW ARTICLE

Research in Education of Children with Disabilities 7
ITTIRA POOVAIAH GOWRAMMA, ELIZABETH GANGMEI, AND
LAXMIDHAR BEHERA

RESEARCH PAPERS

How Distant is 'Inclusion?': A Study of Delhi School Teachers 94
YUKTI SHARMA

Effect of Gender, Region and Type of School on Social, Cognitive and Affective Skills of Higher Secondary School Students 114
SHABANA AND KHALIDA ALAM

Appendix 129

प्राचार्य/ PRINCIPAL
क्षेत्रीय शिक्षा संस्थान
Regional Institute of Education
भुवनेश्वर / Bhubaneswar-751022

Research Article

Uses of Pedagogical Content Knowledge (Pck) By Social Science Teachers in Classroom Transaction at Elementary Level

Mrs.P.Sujata Dora¹, Dr. Ramakanta Mohalik²

¹Teacher Educator, District Institute for Education and Training, Keonjhar, Odisha.

²Associate Professor in Education, Regional Institute of Education, (NCERT) Bhubaneswar, Odisha.

Abstract: The main purpose of this study is to investigate the uses of PCK in classroom transaction by social science teachers in relation to qualification. The qualitative research method was applied for studying the uses of PCK with 30 social science teachers selected purposefully from Government elementary schools of Bhubaneswar city, Odisha, India. Out of 30 teachers, 15 are having degree with D.EL.Ed. and 15 are having degree with B.Ed. Self-developed observation schedule consisting of 28 items based on uses of general pedagogy, content knowledge, knowledge of context and learners was used for data collection. The collected data were analyzed by using percentage and accordingly interpretations are drawn. The study found that i) 73.33% of teachers frequently use teaching learning strategy and play way techniques during classroom transaction. But more percentage of B.Ed. teachers use teaching learning strategy and more percentage of D.EL.Ed. teachers use play way techniques ii) 80% of teachers not at all analyze students' mistakes and reasons of mistakes to facilitate learning, iii) only 6.66% of teachers fulfill students' needs and conducts activities as per interest of the learners in social science learning situations iv) 76.66% of teachers not at all facilitates the students according to individual difference v) and 70% of teachers are liberal and friendly to students in the class. The study has suggested implications for teachers, teacher educators as well as educational planners of both the pre-service and in-service teacher education programme.

Key Words:- Pedagogical Content Knowledge, Social Science Teachers, Classroom Transaction, Elementary Level.

Conceptualization of the Problem

Elementary education is the foundation of the pyramid of education system because the initial study starts with elementary education without which none of our aims will be realized. The quality of elementary education is mainly depends on teachers' teaching strategy. Elementary school teachers must be positive and use fun and unique approaches to learning to help keep each student interested and engaged in learning. They should keep things stimulating and fresh to hold students' attention and keep them interested in their learning. The Odisha Primary Education Programme Authority (2008-12) reported that in 80% primary schools teachers were using traditional methods of teaching. Since students' participation wasn't encouraged during classroom teaching learning process and students were not spontaneous in responding to or making queries to the teachers. The students were less enthusiastic because classroom teaching was not lively. It is essential to enable the teachers to act as agents of modernization, social change, development and transmittance of national thinking and scientific temper. Because, in the absence of an effective teacher, all these will prove in fraction so far as pupils' learning are concerned. Kabir (1956) rightly stated without good teacher even the best of the systems is bound to fail. With good teacher, even the defect education system can be largely overcome.

Elementary education introduces children to mathematics,

language, science and social science. The last one encompass diverse concerns of society and include a wide range of content drawn from the disciplines of history, geography, political science, economics, sociology and anthropology. In social science field, selecting and organizing material in to a meaningful curriculum and enable students to develop a critical understanding of society is a challenging task. So, the social science teacher should carry a normative responsibility of creating a strong sense of human values, namely: freedom, trust, mutual respect and respect for diversity and social science teaching should aim at generating in students a critical moral and mental energy and making them alert to the social forces that threaten these values. The teacher again needs to understand subject matter deeply and flexibly so they can help students to create useful cognitive maps, relate one idea to another and address misconceptions. Teachers need to see how ideas connect across fields and to everyday life. This kind of understanding provides a foundation for pedagogical content knowledge (PCK) that enables teachers to make ideas accessible and clear to others. This form of teacher knowledge, according to Shulman (1989) "goes beyond knowledge of subject matter as per to the dimension of subject matter knowledge for teaching". The integration of content, pedagogy, school environment and knowledge of learners constitute pedagogical content knowledge. PCK is a new form of knowledge developed by teacher by integrating different

Role of Panchyati Raj Institution Members in Managing Elementary Education in Bihar

Mr. Vishal Kumar¹, Dr. Ramakanta Mohalik²

Research Scholar, Regional Institute of Education, Bhubaneswar, Odisha, India
Associate Professor, Regional Institute of Education, Bhubaneswar, Odisha, India

ABSTRACT: Elementary education is one of 29 delegated responsibilities upon Panchayati Raj Institution (PRI). This study examined the role of PRI members in managing elementary education. It was conducted on 27 PRI members and 8 head teachers of two blocks of Patna district Bihar, selected through multistage sampling technique. Self-developed interview schedule was used for collecting relevant information on the role of PRI members in elementary education. The study found that i) only 19.23 % of the PRI members are involved in procuring infrastructure for the school, mainly involved in developing separate toilet for boys and girls, hand pumps for drinking water, ii) no PRI members are involved in developing boundary wall, classroom, kitchen for mid-day meal and bench desk, iii) no PRI members are involved in procuring the TLM for school like black board, chalk, duster, chart, model, T.V, Computer etc, iv) all the PRI members are involved in preparation, distribution and monitoring the quality of mid-day meal and v) 90% of PRI members want to take training about roles on school management. The study has suggested for orientation of PRI members on their roles and responsibilities so that they can get better involve in functioning of school.

Keywords: PRI, SMC, School Development Plan, RTE Act, Monitoring School

CONCEPTUALISATION OF THE PROBLEM

There has been growing concern among economists and social scientists world over for enhancing access to education because of the economic and social benefits attached to it. The Indian Constitution recognizing the importance of education and made provision for "free and compulsory education for all children until they complete the age of fourteen years", in article 45 of the Directive Principle of State Policy. After 86 amendments (2002) of the Constitution, elementary education is a fundamental right as per the article 21(a) to provide free and compulsory education to all children of 6-14 years. The success of constitutional mandate is only possible through community participation in education.

For democratic decentralisation of administration and the empowerment of local political bodies, the Panchayati Raj Institutions (PRI) are created which are more accountable to local citizens and appropriate to local needs and preferences. Panchayati Raj Institution is a three-tier system of administration at the grass root level for the development of rural areas, with the Gram Panchayat at the Panchayat level where chairman of Panchayat (Mukhiya) is the head, the Panchayat Samiti at the block level where chairman of Panchayat Samiti (Pramukh) is the head, and Zila Parishad at the district level where chairman of Zila Parishad is head.

M K Gandhi the father of nation, in 1946 had aptly remarked that the Indian Independence must begin at the bottom and every village ought to be a republic or Panchayat having a power. The Panchayati Raj movement was firstly launched in

2nd Oct 1961 in Rajasthan. The 73rd and 74th amendments of the Indian Constitution (1992) were historic attempts to empower local self-governments by giving them constitutional status and identifying 29 areas including elementary education over which they can legitimately have jurisdiction. It recommended for the delegation of authority related to education, including primary and secondary schools, technical training and vocational education, adult education and non-formal education, and spread of literary and cultural activities to Panchayati Raj bodies (Article 243G of the Eleventh Schedule). In pursuant to the 73rd and 74th amendments each Indian state passed their own Panchayati Raj Acts. The section 22 of the Bihar Panchayati Raj Act 2006 identifies some important roles of Panchayats in the area of elementary education.

Community participation in educational management was suggested by Kothari Commission (1964-66). The need for decentralized planning of school education especially of primary education has been strongly stressed in but also a movement towards empowering the local community to take major management decisions in this regard. In 1993 Veerapan Committee recommended that decentralisation of educational planning: through involvement of Panchayati Raj Institution. In District Education Primary Programme (DPEP), decentralisation and community participation are being put into practice on large scale. Sarva Shiksha Abhiyan (SSA) which is an elaborative nationwide programme formulated by the Government of India (GOI) to universalize elementary

Perception of Teacher Educators Towards Professional Development

Mr. Ravi Ranjan Kumar

Research Scholar, Regional Institute of Education (NCERT), Bhubaneswar, India

Dr. Ramakanta Mohalik

Associate Professor in Education, Regional Institute of Education, Bhubaneswar, India

Abstract: This paper investigated the perception of teacher educators towards professional development. The survey method was used with sample of 59 teacher educators working in five Regional Institute of Educations. Self developed perception scale consisting of 59 items based on different aspects of professional development was used as tool. The study found that i) 69.49% of teacher educators strongly perceived that professional development programme develops positive attitude towards school education and teacher education among teacher educators, ii) 74.58% of teacher educators strongly agreed that professional development helps teacher educators to discharge their duties in evaluating, encouraging student, for maintaining discipline inside the classroom, iii) 61.02% of teacher educators strongly agreed that institutions must create opportunities to practice new skills acquired during different programmes for PD, iv) 55.93% of teacher educators strongly agreed that professional development programmes should be based on the needs of TEs and on relevant topics and v) 74.58% of teacher educators strongly agreed that developing e-content and video content brings PD among TE. The present study has its implications for teacher educators, principals, educational administrators and planners of teacher education.

Keywords: Teacher Educator, Professional Development, Perception of Teacher Educators, Positive Attitude.

1. INTRODUCTION

Well trained and well-prepared teacher educators are central to preparing high quality teachers for school education. In decade years, work in practice-based teacher education has focused on identifying and elaborating Pedagogies that teacher educators can employ to prepare novice teachers for socially and intellectually ambitious teaching Practices (Kazemi, Ghouseini, Cunard & Turrou, 2016; Lampert et al., 2013; McDonald & Grossman, 2008; Kumar, 2017). Educators have genuine information, which led to emancipation from unreality to reality, from darkness to light, from death to immortality and teacher educators are the person who could show this path of liberation/strivings/salvation. The teacher educators believe in the worth and dignity of man. They recognize the supreme importance of the pursuit of truth, devotion to excellence and the nature of democratic citizenship (Kumar, 2017).

Professional development for teacher educators provides a framework of principles to guide them in discharging their obligations towards students, parents, colleagues, and community. Increased awareness of the principles governing profession is essential to ensure "professionalism". The teacher educator engages in ongoing professional learning and uses evidence to continually evaluate his/her practice; particularly effects of his/her choices and actions on others (learners, families, other professionals, and the community) and adapt practice to meet the needs of each learner. There is a need to delineate the value addition components of professional development of teacher educators, in terms of service related issues covering improving qualifications, contributing professionally by way of attending conferences, seminars, symposiums on the one hand and output performance indices to achieve benchmarks in the transaction of the curriculum and excelling in one's own profession on the other.

The professional development of teacher educators will have to be individual need-based and must be able to cater to the needs as and when needed by teachers and teacher educators. The ICT mediation indeed can contribute to the enhancement of quality in teaching-learning if used meaningfully. But there is a need to study different models of ICT which can suit best at different levels and for different contents. ICT can also be a specialized area for teacher educators. It is not out of place to think of roping in the IT companies in honing up the skills of teacher educators

Leadership Style of Head Teachers at Secondary Level in West Bengal

Mr. Shankar Barman^[1]Dr. Ramakanta Mohalik^[2]

Abstract:

The main purpose of this paper is to study the leadership style of head teachers at secondary level as perceived by teachers. Survey research method was applied for studying the leadership style of head teacher with nine head teachers and 22 assistant teachers selected purposefully from Government secondary schools of Coochbehar district, West Bengal, India. Self-developed questionnaire consisting of 56 items, based on head teacher leadership style was used for data collection. The collected data were analyzed by using percentage, frequency and accordingly interpretations are drawn. The study found that i) 77.3% of teachers agreed that HT have a deep rooted understanding of the school functioning, ii) 81.8% of teachers believe that HT shares visions with the teachers, iii) 81.8 % of teachers agreed that HT acts as a guide for all the staff, iv) 77.3% of teachers supported that HT provide resources needed for all round development of the school, and v) 86.4% of teachers pointed out that HT works according to the rules of the school. The study has suggested implications for head teachers to develop leadership style, school administration, overall development all staff and student as well as organising professional development programmes.

Article History: Received: 14th August 2018, Revised: 17th September 2018, Accepted: 24th September 2018, Published: 30th September 2018.

I. CONCEPTUALIZATION OF THE PROBLEM

The expansion of education, particularly at school level since Independence is one of the unparalleled events in the history of Indian education. Despite the impressive expansion of school education in almost all the states in India, there are still wide among rural, urban and tribal areas. One of the reasons may be the quality and leadership style of Head Teacher (HT) who practically implements all the policies at school level. The effectiveness of school mainly rests on the leadership style of Head of the school. The National Policy on Education 1986 and its Programme of Action laid great emphasis on the role of head teacher as an implementer of educational programmes. They are one of the few who facilitates creation of excellence in the teaching learning process. HT is the pivot of educational system as he/she is directly responsible for implementing new educational programmes from time to time. Much of the initiative and skill required for day-to-day administration as well as the dynamism and foresight needed for school planning and appraisal of activities comes from head teacher. HT has to be able organiser, efficient administrator, tactful in handling men and matters.

The Head of the educational institution is to be a guide and counsellor to the teaching staff under his charge. A great deal of performance and activity status depends upon the leadership of head teacher. He has to perform several innovative and creative functions. He interacts, motivates, inspires his subordinates and guides them for better performance. He has to perform many duties namely academic, administrative, co-curricular activities, co-ordination and understanding between different departments and units of the school. In fact organisations compete by means of their leaders then by their products. Leader gives

life to the organisation, to be more effective for the attainment of goal. Leadership is an important attribute for the development of school that set apart a successful organisation from unsuccessful organisation without leadership. Leadership is the personal quality of an individual who organises the effect of follower and directs their activities towards the attainment of organisation goal. Leadership is regarded as the process of influencing the activities of an individual or a group in effort towards goal achievement in a given situation. In school context, HT need to manage and supervise all the academic and non-academic activities of school. HT required to guide teachers in developing their effectiveness so that they can contribute for the betterment of school as well students.

II. RATIONALE OF THE STUDY

Head teacher has significant role for the development of school and students. He is the main agent for supervising the implementation of curriculum at school level. He is the source of motivation and inspiration for both teachers and students in school. Hence leadership style of head teacher has great bearing on school effectiveness and teacher professional development. Realising the importance of the leadership style of head teachers, many researches are done at National and International level. Some of the relevant studies are discussed in the following paragraph.

Arya (2017) indicated that there are two types of leadership styles of school Principal, namely supportive leadership and participative leadership styles which have significantly affecting teacher effectiveness. Kumar (2017) stated that there is no significant difference in the leadership styles of

^[1] Research Scholar, Regional Institute of Education (RIE) Bhubaneswar, Odisha.

^[2] Associate Professor in Education, RIE Bhubaneswar, Odisha.

Education of Teacher Educators: A New Discipline

M. Goswami¹³

R. Mohalik¹⁴

K. B Rath¹⁵

Abstract

The main objectives of the study are to identify the crucial factors shaping the professional development and to assess the impact of context, working environment and institution on professional development of teacher educators. Survey method was adopted for examining the process and factors of professional development of teacher educators. 20 teacher educators of different secondary teacher training institutes located in Bhubaneswar and Cuttack, Odisha, India were purposefully selected as sample. The data was collected through semi structured interview. All interviews were conducted face to face in the audio video studio of Regional Institute of Education (RIE), Bhubaneswar. Interviews were conducted on an individual basis; so that each participant can express their ideas, feelings and experience exclusively. Each interview lasted for approximately 30 minutes and was digitally recorded. Digital recordings of the interviews were transcribed to MS word and were available for review and analysis by programme coordinators/interviewer. The interview data were analyzed using a content analysis approach. The data collected were analyzed under four heading such as i) essential shaping factors, ii) changing perspectives, iii) reflective analysis of own practices (self study) and iv) professional learning group and institutional support. The study found that i) intense desire to excel in profession among teacher

¹³ Regional Institute of Education, Bhubaneswar

¹⁴ Regional Institute of Education, Bhubaneswar

¹⁵ Regional Institute of Education, Bhubaneswar

* 2017

Education India



**A Quarterly Refereed Journal
of Dialogues on Education
(ISSN 2278-2435)**

Paper-8

**Education of Teacher Educators: A New
Discipline**

M. Goswami
R. Mohalik
K. B Rath

Education India Journal: A Quarterly Refereed Journal of Dialogues on Education,
ISSN 2278-2435, Vol. 6, Issue-3, August-2017.

Page 93

B

Regional Institute of Education
Bhubaneswar-75

Implementation of the Right of Children to Free and Compulsory Education Act 2009 in Jharkhand: A Status Study

Dr Ramakanta Mohalik

Associate Professor in Education, Regional Institute of Education, (NCERT), Bhubaneswar, Odisha, India.

Abstract: *The Right of Children to Free and Compulsory Education Act 2009 (RTE) has been implemented in all states of India except Jammu and Kashmir since 1st April 2010. Hence it is relevant to study the status of the implementation of the Act at school level. The main objective of this paper is to study the status of implementation of the RTE Act 2009 and issues in its effective implementation. The study adopted survey method with 44 elementary schools selected from the state of Jharkhand, India by using multistage sampling method. The study indicates that most of the provisions of the RTE Act 2009 relating to school provisions, infrastructure and teaching learning materials, teachers and Head Masters etc have not been fully implemented in elementary schools. Hence it is suggested that all the stakeholders must work together for the effective implementation of the Act.*

Keywords: *The RTE Act 2009, Out of School Children, Children with Special Needs, Age Appropriate Admission, Issues in RTE Implementation.*

1. CONCEPTUALIZATION OF THE PROBLEM

A good quality education is the birthright of every child. In India, lot of efforts had been made after Independence to provide free and compulsory elementary education to every child without any discrimination. The Article 45 of the Constitution provided a basic framework for free and compulsory elementary education. Afterwards, various Commissions and Committees appointed by the Government of India also given recommendations to universalize elementary education and various programmes such as Education for All, Mid-Day-Meal, Shiksha Karmi Project, Operation Black-Board, District Primary Education Programme, Sarva Shiksha Abhiyan and the Right of Children to Free and Compulsory Education Act (RTE) etc were initiated in this direction.

The latest initiative to universalize the elementary education is making elementary education as a fundamental right of every child up to 14 years of age. The Right of Children to Free and Compulsory Education Act or Right to Education Act is an act of the Parliament of India enacted on 4th August 2009, which describes the modalities of the implementation of free and compulsory education for children between the age of 6 to 14 years in India under Article 21A of the Indian Constitution. India became one of 135 countries to make education a fundamental right of every child when the act came into force on 1st April 2010.

The main provisions in the RTE Act include the responsibilities of appropriate government and local authorities towards establishing neighbourhood schools; sharing of financial and other responsibilities; prohibition of capitation fee and screening procedure for admission; prohibition of detention, expulsion and corporal punishment; specification of norms and standards for schools including those related to the infrastructure and teachers; laying down of teacher qualifications and their duties; prohibition of deployment of teachers for non-educational purposes; and ensuring that curriculum and evaluation is in accordance with the Constitution of India and as per child-centred principles and values. Children with special needs, children from socially disadvantaged section, weaker section and those belonging to minority communities are also covered under the Act. All the norms and standards prescribed in the RTE Act must be met by the states in all primary and upper primary schools by 2013. It is the responsibility of state Government to provide basic infrastructure, teaching learning material and teachers for quality elementary education.

In the light of the RTE Act 2009, the Government of Jharkhand has made The Jharkhand Right of Children to Free and Compulsory Education Rules in 2011. This rule consists of total nine chapters, which include all the seven chapters of the RTE Act 2009 and two chapters is added extra; one for school management committee and one for teachers. In the school management committee chapter, it describes the composition and function of the school management committee and the teacher chapter deals with minimum qualification and duties for teachers.

Status of Secondary Education in Jharkhand in the Context of RMSA

Dr. Ramakanta Mohalik¹⁵

Dr. Rasmirekha Sethy¹⁶

Abstract

The main objective of this paper is to study the status of secondary education with reference to infrastructure, teaching learning material, position of teachers and management of school. Survey was conducted on 50 secondary schools of Jharkhand. The sample was selected from five districts such as Chatra, Deoghr, Palamu, Ranchi and West Singhbhum by using multistage sampling techniques. Data was collected from HMs by using self developed questionnaire and analysed in terms of frequency, percentage and average. The study found that majority of secondary schools in Jharkhand lacks basic infrastructure facilities, teaching learning resources, regular HMs and teachers. The study has suggested for equipping all secondary schools with minimum facilities such as good condition school building, separate toilets for girls, ramps for disable, science and mathematics kits, science, mathematics and computer laboratory and appointment of regular HM.

Key Words: Secondary education, RMSA, NCF

Conceptualization of the Problem-

The secondary education has been playing a great role for the National and Individual development. The significance of secondary education has been highlighted in different reports of committees and commissions constituted by the

¹⁵ Associate Professor in Education, Regional Institute of Education, Bhubaneswar. email- mohalikrk@gmail.com

¹⁶ Assistant Professor in Education, Regional Institute of Education, Bhubaneswar.

* 2018

Education India



**A Quarterly Refereed Journal
of Dialogues on Education
(ISSN 2278-2435)**

Paper-9

**Status of Secondary Education in
Jharkhand in the Context of RMSA**

Dr. Ramakanta Mohalik
Dr. Rasmirekha Sethy

Regional Institute of Education
Bhubaneswar-751005



* 2018

USES OF DIGITAL TECHNOLOGY BY TEACHERS AND STUDENTS AT SENIOR SECONDARY LEVEL

Ms. Mitarani Barik¹ & Ramakanta Mohalik², Ph. D.

¹Research Scholar, Regional Institute of Education, Bhubaneswar

²Associate Professor, Regional Institute of Education, Bhubaneswar

Abstract

The main purpose of this study was to investigate the uses of digital technology by teachers and students for teaching, professional development and learning at senior secondary level. The survey was conducted on 20 teachers and 155 students of senior secondary CBSE affiliated schools located in Bhubaneswar, Odisha, India. Self-developed questionnaire consisting of 51 items for teachers and 36 items for students based on different aspects of digital technology was used as tool. The study found that (i) 95% of teachers are aware of internet and are using effectively in their teaching as well as professional development, (ii) all teachers have knowledge on software like MS Word, MS Power Point, MS Excel etc. and they agreed that digital technologies are helping them in teaching effectively, (iii) all students have Smartphone at their residence, (iv) 96.12% of students are familiar with software like MS Word, MS Power Point, MS Excel etc and know how to use it for learning, and (v) 72.25% of students admitted that lack of time due to heavy homework are the barriers for not using digital technology for learning. The study has suggested implications for teachers, students, schools and also for Government.

Keywords: Digital Technology, Professional Development, ICT, Educational Applications, Digital Devices



Scholarly Research Journal's is licensed Based on a work at www.srjis.com

Introduction

Digital technology plays an important role in facilitating student's learning. It encompasses digital devices, tools, systems, techniques and resources that generate, process and store data and information including gaming application, social media, learning application, productivity application and mobile devices. It not only enhances the teaching, but also exposes the learners to new and different kinds of learning. Digital technology includes all types of electronic equipments and applications that communicate with the human being by taking raw data and transferring it in the form of information. It is now considered as a basic need in 21st century and it is spreading like a spider wave. Most important advantage is that now days some digital technologies are affordable and can be used by many people for their advancement in any field, because digital technology can help a person in any aspect of life. Digital technology becoming a part of classroom transaction in 21st century classroom. Now

Copyright © 2017, Scholarly Research Journal for Interdisciplinary Studies


प्राचार्य/PRINCIPAL
क्षेत्रीय शिक्षा संस्थान
Regional Institute of Education
भुवनेश्वर / Bhubaneswar-751006

JOURNAL

ISSN 0377-0435 (Print)
0972-5628 (Online)

Journal of
**Indian
Education**

Volume XLIII

Number 4

February 2018

विद्यया ऽ मृतमश्नुते



एन सी ई आर टी
NCERT

राष्ट्रीय शैक्षिक अनुसंधान और प्रशिक्षण परिषद्
NATIONAL COUNCIL OF EDUCATIONAL RESEARCH AND TRAINING

भारतीय प्रिंसिपल
क्षेत्रीय शिक्षा संस्थान
Regional Institute of Education
भदवनेर/ Bhopal

THE HISTOLOGICAL, BIOCHEMICAL AND HEMATOLOGICAL ALTERATION IN ANABAS TESTUDINEUS (CUVIER) EXPOSED TO INSECTICIDE MONOCROTOPHOS.

VEENA ANSHUJALI, SURESH K. HALDAR, DEEPTIKHA,
ANIMESH KUMAR MOHAPATRA & PRIYAMVADA

Department of Life Science Education, Regional Institute of Education, Bhubaneswar, Odisha, India

ABSTRACT

Monocrotophos is an organophosphorus insecticide widely used in agricultural fields for controlling various of insect pests. Extensive use of pesticides has led to contamination of water bodies thereby affecting the aquatic biota. This study was carried out to evaluate the possible histological, biochemical and hematological alterations in *Anabas testudineus* exposed to sublethal concentration of monocrotophos (50ppm). Histopathological changes in liver like discoloration of hepatic parenchyma, pyknotic nuclei, leucocytic infiltration and in kidney like multifocal cloudy cytoplasmic vacuolization, necrosis of glomerular tissues were observed. Biochemical analysis showed increased total serum protein in the initial period of exposure and then depletion in later stage in hepatic and renal tissues accompanied with enhanced catalase activity. A decrease in total erythrocyte count, hemoglobin content and increased total leucocytes count was observed. The histological, biochemical and hematological alterations led to conclusion that monocrotophos has deleterious effects on *Anabas testudineus* and may jeopardize the health of other aquatic organisms.

KEY WORDS: Monocrotophos, Protein, Catalase, Erythrocyte, Leucocytes & Liver and Kidney

Received: May 13, 2019, Accepted: Jun 04, 2019, Published: Sep 23, 2019, Paper ID: IJZRDEC20192

INTRODUCTION

In India, pesticides are used extensively in agricultural sector to control pest for improving crop production to meet the high food demand of fast growing population. These pesticides find their way into the aquatic environment mostly through runoff water from agricultural fields and cause various deleterious effects on aquatic biota. The organophosphorus pesticides are extremely toxic to non-target species of freshwater biota that damages the population dynamics, complex food web and food web energetic (Chandra et al., 2003). Bioaccumulation of pesticides affect the survival of fishes by disrupting the ecological relationships between organisms and loss of biodiversity (Abdel et al., 2011). Prolonged exposure of fishes to pesticides induces histopathological damages, biochemical changes and hematological alterations (Mishra et al., 2008; Figueira et al., 2014; Pandey et al., 2014; Ullah et al., 2014; Ullah and Zaman, 2015; Gade et al., 2010). Several researchers have shown pathological lesions in different tissues of fish due to various pesticide exposure (Jing et al., 2009; Ullah, 2009; Ojha et al., 2013; Eshwari et al., 2010).

Severe biochemical and enzymatic alterations have been observed due to secondary metabolites of pesticides in fishes (Kumar et al., 2012; Tripathy and Singh, 2009). Several researchers have reported reduction in tissue protein content under toxicity stress and this might be due to high protein hydrolytic activity because of increased protease activity (Mishra et al., 2007; Prasad and Nandagopal, 2009; Tripathy and Singh, 2009). The level and activity of antioxidant enzymes like catalase and glutathione peroxidase are affected by toxic pollutants and are used as biomarkers to assess the health of fish (Van der Oost et al., 2003). Hematological parameters are considered

1279

editor@transstellar.org



Environmentally relevant concentrations of Cadmium impair morpho-physiological development and metamorphosis in *Polypedates maculatus* (Anura, Rhacophoridae) tadpoles

Srikant Ojha, Anurban Roy^{1,*}, Animesh Kr. Mohapatra

Department of Botany and Microbiology (DBM), Regional Institute of Education (RIET), Bhubaneswar-751022, Odisha, India

ARTICLE INFO

Article history:

Received 1 October 2020

Received in revised form 24 March 2021

Accepted 20 March 2021

Available online 11 March 2021

Keywords:

Cadmium

EC₅₀

Metamorphosis

Polypedates maculatus

Tadpoles

Toxicity

ABSTRACT

Cadmium (Cd) poisoning has been globally reported causing detrimental health issues with severe toxic effects on certain physiological systems. Here the effects of different concentrations of Cadmium were assessed on the metamorphosis and development of common Indian tree frog (*Polypedates maculatus* Gray, 1830). The tadpoles were exposed to environmentally relevant concentrations (up to 0.7 mg/L) of Cd in dechlorinated water from the larval stage to adult stage. Survival, growth traits (body length and body mass), external deformities and movement were some of the morpho-physiological characters compared between control and experimental samples. Followed by the determination of acute toxicity (median lethal concentration-LC₅₀ after 24 h (5.633 mg/L) and 48 h (4.911 mg/L) of exposure), impacts associated with chronic toxicity of Cd to the tadpoles were inspected. The study showed multiple physiological deformities in the tadpoles (chronically exposed to 0.5 and 0.7 mg/L Cd) that included morphological malformations, pale skin colour, unspotted molting, delayed metamorphosis and even high mortality. In addition to that, the tadpoles treated with 0.5 and 0.7 mg/L Cd showed significantly lesser growth traits than the controls over the study period. The paper aims to contribute in increasing toxicological knowledge of an anuran species from which there is not much information of this type. Given the wide geographical distribution of the study species, it can serve as a bio-indicator of cadmium contamination, considering its applicability across a large swath of aquatic ecosystems in the Indian subcontinent.

1. Introduction

Human activities leading to the accumulation of heavy metals in the ecological habitats is causing an unprecedented decline in the global population of aquatic organisms at an alarming rate [1,2]. Among all aquatic organisms, amphibians have shown a high vulnerability to exposure to heavy metals [3,4].

Amphibians possess permeable skin, loss of epidermal outgrowths, and shall live (as anurans) in eggs, thus being directly exposed to external pollutants present in their habitats [5–7]. Behavioural studies with tadpoles suggest that they chiefly consume detritus, periphyton and soft leaves, and are often associated with the benthic habitat from which they need to absorb late nutrients in their bodies [8–9]. Several toxicological studies have reported the lethal impact of heavy metals on amphibians, cadmium toxicity being

one of them. James et al. [10] reported that cadmium contamination can cause high mortality and delayed metamorphosis in two anurans, *Rana americana* and *Rana sphenocphala*. Chronic exposure of cadmium caused disruption in the activities of adrenal glands in an anuran *Trionyx carolinensis* [11]. In a similar study by Fatah et al. [12], it was concluded that cadmium toxicity in water can affect the life history traits and cause DNA damage in *Rana lessonae*. In a recent study, it was inferred that cadmium accumulation in *Xenopus laevis* is highest in kidneys followed by sex organs and muscles, thus indicating physiological stress in affected individuals [13]. In another study, it was observed that cadmium exposure disturbed the internal microbial community in *Rana chrysomena* [14].

Cadmium (Cd) is one of the PBTs (persistent, bioaccumulative and toxic) chemicals recognized as primary toxicant, found at low concentrations in natural water [15]. Anthropogenic activities like lead mining and

* Corresponding author.

E-mail address: anurbanroy27@gmail.com (Anurban Roy).

Present Address: National Institute for Research in Ecology and the Environment, PO Box 187, New Delhi, India.



Production and hosting by Elsevier on behalf of KeAi


Principal


Principal

Fecundity of inbred fruit fly *Drosophila melanogaster* on different solid culture media: An analysis

Animesh Kumar Mohapatra*

Department of Life Science, Regional Institute of Education (NCERT), Bhubaneswar - 751022 (Odisha), INDIA

Priyamvada Pandey

Department of Life Science, Regional Institute of Education (NCERT), Bhubaneswar - 751022 (Odisha), INDIA

*Corresponding author. E-mail: akmcncert@gmail.com

Abstract

In the present study, wild-type *Drosophila melanogaster* collected from stock culture were sub-cultured in three different types of solid culture media (corn, barley and wheat) and control medium for two weeks to produce F₁ generation. The duration of larval and pupal development, number of pupal cases and hatched flies were scored for first generation. The results were analyzed by using one-way ANOVA, Bonferroni multiple comparison test and paired sample t-test. The control medium showed no pupal cases and hatched flies. Among all the three solid culture media tested, corn meal, barley meal and wheat meal, the latter showed highly significant results at p<0.001 than others. However, this parameter was not affected by the carbohydrate amount in the media. The present investigation is an attempt to evaluate the influence of different formulated solid culture media on the life span and reproduction of fruit flies.

Keywords: ANOVA, *Drosophila melanogaster*, Fecundity, Pupa, Solid culture media

Article Info

DOI: 10.31018/jans.v10i4.1788

Received: June 6, 2018

Revised: September 17, 2018

Accepted: October 7, 2018

How to Cite

Mohapatra, A.K. and Pandey, P. (2018). Fecundity of inbred fruit fly *Drosophila melanogaster* on different solid culture media: An analysis. *Journal of Applied and Natural Science*, 10(4): 1109-1114

INTRODUCTION

Drosophila melanogaster, commonly known as the fruit fly, is the most extensively used model organism in research due to its high fecundity rate, short life span and adaptation time (Demerec, 1950; Ranganath, 1999; Ashburner and Roote, 2000; Mitrovski and Hoffman 2001; Markow and O'Grady, 2006; Kenney and Borisy, 2009). The life cycle of the fruit fly has four main stages; egg, larva, pupa, and adult; and duration of its development depends largely on different culturing conditions such as high carbohydrate and protein content, controlled conditions ranging between 20°C and 25°C, yeast for fermentation, absence of predation pressure and optimum pH range of 3 to 4 (Burnell et al. 1991; Purves et al, 1998; Wayne et al., 2006; Dirkson, 2009; Parvathi et al, 2009; Sandhyarani, 2010). *D. melanogaster* can be easily bred on overripe and fermented fruits. Earlier studies have shown that different types of media such as corn meal medium, banana jaggery medium, sucrose dextrose medium and maltose corn medium comprising different nutritional value and sugar contents affect the rate of development in fruit fly. Several varieties of yeast and additives including fruits, tomatoes, sugar, raisins, rice, molasses, and oat hulls were

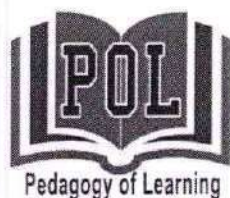
used for the standardisation of the *Drosophila* culture media (Baumberger, 1917; Bridges and Darby, 1933; Tatum, 1939; Robertson and Sang, 1944; Jaenike, 1986). The media like agar and cereals like corn flour, oat, wheat etc. are used as the most common ingredients for the solidification and high nutritive supplements for the fruit fly culture media (Spencer, 1943; Flagg, 1998; Tee Sui Yee, 2010).

Past researches have shown that laboratory rearing of these flies is often limited by the longevity and shelf-life of the fruit culture medium used for rearing (Demerec and Kaufmann, 1996). This has prompted researchers to develop an effective solid culture medium supplemented with yeast for laboratory culturing of these flies in large numbers (Wollard et al., 2006). Earlier studies are primarily dedicated towards understanding the effect of culture medium on the fruit fly development. Little is known about whether the reproduction rate depends on different developmental nutrition in fruit flies. Studies conducted by Widdowson and McCance (1935), Keller (2007) and Lushchak (2012) have revealed that fruits consumed by *Drosophila* species are rich in a mixture of fructose, glucose, sucrose and other carbohydrates; but they are generally not rich in proteins. Taking natural food sources into account, the present

[Signature]

PRINCIPAL
Regional Institute of Education
Bhubaneswar - 751022

[Signature]

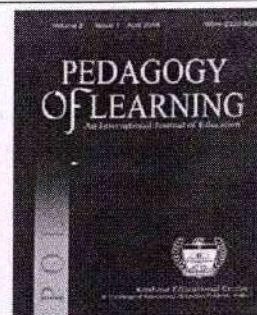


PEDAGOGY OF LEARNING (POL)

International Refereed/Peer Reviewed
Journal of Education

E-ISSN: 2395-7344, P-ISSN: 2320-9526

Abstracted and indexed in: Google Scholar,
Research Bib, International Scientific Indexing
(ISI), Scientific Indexing Services (SIS),
WorldCat, Cite Factor, Impact Factor: 0.787(GIF)
Website: <http://pedagogyoflearning.com>



Familiarity and Adoption of Web 2.0 Technologies in Higher Education

Praveen Bobby Binjha

Assistant Professor, Department of Education, Ravenshaw University, Cuttack, India
Ph.D Scholar, Utkal University (RIE, NCERT) Bhubaneswar, India
E-mail: bobby452@gmail.com

Prof. H.K. Senapaty

Director, NCERT, New Delhi

Corresponding Author: Praveen Bobby Binjha

E-mail: bobby452@gmail.com

Article History:

Received: 10 February 2018, Received in revised form: 14 March 2018

Accepted: 17 April 2018, Published online: 21 April 2018

Abstract

The term of information and communication technology (ICT) in the field of education is no more surprise. Integrated role of information technology and communication technology enhances the pedagogical practices and learning outcome. The classroom enriched with diverse technologies leads to flexible learning environment. The purpose of the present study is to explore various media and its usage. The objective of the study is to identify the level of familiarity with social-media of student. To compare the level of adoption of social media in learning by students. Descriptive research design was followed for this study. A sample of 310 students from Ravenshaw University Cuttack was selected purposively. A questionnaire on Web 2.0 technologies was used for data collection; and data were analyzed through percentage. The findings of the study show that the majority of the students are highly aware of some technologies of Web2.0 but adoption of those technologies for learning is still in nascent stage. The familiarity and adaptation levels of boys are comparatively higher than girls. The findings of the study have both theoretical as well as practical implication for academicians, learner, teacher educator, policy maker to improve the quality practices in higher education.

Keywords: Web 2.0 Technology, Adoption, Higher Education

Handwritten signature

Handwritten signature

प्राचार्य/ PRINCIPAL
क्षेत्रीय शिक्षा संस्थान
Regional Institute of Education
भुवनेश्वर/ Bhubaneswar-751022

Research Review Article

Research in Education of Children with Disabilities

ITTIRA POOVAIAH GOWRAMMA*, ELIZABETH GANGMEI**
AND LAXMIDHAR BEHERA***

ABSTRACT

The review presents a systematic and comprehensive framework concerning the state of research in the field of education of children with disability/disabilities (CwD/CwDs) from the year 2000 to 2017, with a view to identify the key areas and generate questions for future research. Published studies, doctoral dissertations and institutional research were considered for mapping the current status. The analysis indicates that the area of study is expanding reflecting tremendous growth, research percolating various aspects of disability with a focus on empowering them through education. The time following the global flagship of Education for All (EFA) with a rights based approach for disability has made significant contribution to expansion of research ideas and scope. Fostering learning through various strategies, understanding the relationship of psychosocial factors in development and learning, academic performance, impact of significant people in development, and supporting learning through material development emerged as prominent choice of researchers. However, the analysis also shows that the research still seems to be considering disability as a deficit, and the need for shifting the focus to capacity approach by magnifying personal capabilities and dignity of CwD is strongly felt. There is paucity of researches based on critical perspective, serving both informative and transformative

* Professor, Regional Institute of Education, Bhubaneswar (e-mail: gowriip@yahoo.co.in)

** Assistant Professor, Regional Institute of Education, Bhubaneswar (e-mail: gangmeie@yahoo.com)

*** Associate Professor, Regional Institute of Education, Bhubaneswar (e-mail: behera17@yahoo.co.in)

Acknowledgment: The support received from Gautam Kumar and Tanushree Mohanty, Junior Project Fellows is acknowledged.



प्राचार्य/ PRINCIPAL
क्षेत्रीय शिक्षा
Regional Institute
Bhubaneswar

विद्यया ऽ मृतमश्नुते



एन सी ई आर टी
NCERT

ISSN 0019-4700 (Print)

ISSN 0972-561X (Online)

HALF-YEARLY JOURNAL OF EDUCATIONAL RESEARCH

INDIAN EDUCATIONAL REVIEW

Volume 56

Number 2

July 2018

CONTENTS

EDITORIAL

3

RESEARCH REVIEW ARTICLE

Research in Education of Children with Disabilities

7

ITTIRA POOVAIAH GOWRAMMA, ELIZABETH GANGMEI, AND
LAXMIDHAR BEHERA

RESEARCH PAPERS

How Distant is 'Inclusion'? A Study of Delhi School
Teachers

94

YUKTI SHARMA

Effect of Gender, Region and Type of School on Social,
Cognitive and Affective Skills of Higher Secondary
School Students

114

SHABANA AND KHALIDA ALAM

Appendix

129

प्राचार्य/ PRINCIPAL
क्षेत्रीय शिक्षा संस्थान
Regional Institute of Education
भुवनेश्वर / Bhubaneswar-751022



COMPUTATIONAL SCIENCE | RESEARCH ARTICLE

On the approximate evaluation of oscillatory-singular integrals

M.K. Hota^{1*}, A.K. Saha², P. Ojha³ and P.K. Mohanty³

Received: 25 October 2016

Accepted: 18 March 2017

First Published: 22 May 2017

*Corresponding author: M.K. Hota,
Department of Mathematics, Nayagarh
Autonomous College, Odisha, Nayagarh,
Odisha 752069, India
E-mail: manoj.hota1974@gmail.com

Reviewing editor:
J. Alberto Cantero, Universidad
Politécnica de Valencia, Spain

Additional information is available at
the end of the article

Abstract: In this paper an efficient numerical scheme is proposed for the numerical computation of the Cauchy type oscillatory integral $\int_{-1}^1 \frac{\cos wx}{x} f(x) dx$; where $f(x)$ is a well-behaved function without having any kind of singularity in the range of integration $[-1; 1]$. The scheme is devised with the help of quadrature rule meant for the approximate evaluation of Cauchy principal value of integrals of the type $\int_{-1}^1 \frac{f(x)}{dx}$, and a quasi exact quadrature meant for the numerical integration of Filon-type integrals. The error bounds are determined and the scheme numerically verified by some standard test integrals.

Subjects: Science; Mathematics & Statistics; Advanced Mathematics; Analysis - Mathematics; Mathematical Numerical Analysis

Keywords: analytic function; Cauchy principal value; Filon's integral; Quasi-exact method; holder's condition; error bound

AMS 2010 classification: 65D30; 65D32



A.K. Saha

ABOUT THE AUTHORS

M.K. Hota is presently working as a faculty in Mathematics, Nayagarh Autonomous College, Nayagarh, Odisha, India. His research interest includes issues related to Numerical Analysis, Artificial Neural Network (Nero-fuzzy system) and Graph Theory. He is reviewer of many international and national journals. His great deal of research studies published at different national and international journals as well as conference proceedings.

A.K. Saha is an asst professor in Mathematics, Department of Education in Science and Mathematics, Regional Institute of Education (NCERT), Bhubaneswar, Odisha, India, is a research Scholar of the Department of Mathematics, School of Applied Science, KIIT University, Odisha of India. Presently, he is doing research on numerical quadrature rules for integrals of real and complex plane.

PUBLIC INTEREST STATEMENT

Integrals frequently appeared in sciences and engineering. In practice, we are confronted with different kinds of difficulties in evaluating integrals analytically. Thus, an alternating technique becomes absolutely necessary in order to evaluate, which has given birth to the technique of numerical integration or mechanical quadrature.

In adopting this technique the exact value of the integral needs to be sacrificed and we have to be content with its approximate value. For this reason numerical integration is widely known as "Approximate integration".



On the approximate evaluation of oscillatory-singular integrals

M.K. Hota, A.K. Saha, P. Ojha & P.K. Mohanty |

To cite this article: M.K. Hota, A.K. Saha, P. Ojha & P.K. Mohanty | (2017) On the approximate evaluation of oscillatory-singular integrals, Cogent Mathematics, 4:1, 1314066, DOI: [10.1080/23311835.2017.1314066](https://doi.org/10.1080/23311835.2017.1314066)

To link to this article: <https://doi.org/10.1080/23311835.2017.1314066>



© 2017 The Author(s). This open access article is distributed under a Creative Commons Attribution (CC-BY) 4.0 license



Published online: 13 Aug 2017.



Submit your article to this journal [↗](#)



Article views: 491



View related articles [↗](#)



View Crossmark data [↗](#)



Citing articles: 1 View citing articles [↗](#)

Full Terms & Conditions of access and use can be found at
<https://www.tandfonline.com/action/journalInformation?journalCode=oama23>

[Handwritten signatures]

प्राचार्य/ PRINCIPAL
क्षेत्रीय शिक्षा संस्थान
Regional Institute of Education
भुवनेश्वर / Bhubaneswar-751012

2017
ISSN. No. 2249-3794


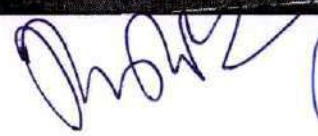
ANWESHAN

JOURNAL OF EDUCATION

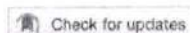
(UGC APPROVED S.No: 63243)

A Peer Reviewed Journal
A Bi-Annual Interdisciplinary Research Journal of Education

Vol. VII No. 02, Dec. 2017


भाचार्य/ PRINCIPAL
क्षेत्रीय शिक्षा संस्थान
Regional Institute of Education
भुवनेश्वर / Bhubaneswar-751022

2018



Disulfide metathesis *via* sulfur...iodine interaction and photoswitchability†

Cite this: *Org. Biomol. Chem.*, 2021, 19, 8539

Ashish Mathuri, Milan Pramanik, Amarchand Parida and Prasenjit Mal*

Received 11th August 2021
Accepted 10th September 2021
DOI: 10.1039/d1ob01581h
rsc.li/obc

The idea of constitutional dynamic chemistry (CDC) and dynamic combinatorial chemistry (DCC) is widespread in the literature using the chemistry of disulfides. The synthesis of unsymmetrical diaryl disulfides is challenging due to the presence of a weak S–S bond. We report herein the synthesis of unsymmetrical diaryl disulfides from two symmetrical disulfides *via* a cross-metathesis reaction which was controlled by a weak sulfur...iodine (S...I) interaction. The unsymmetrical disulfides were stable in acetonitrile solution in the presence of *N*-iodosuccinimide (NIS), and found to be reversibly photoswitchable to the symmetrical disulfides under visible light irradiation.

Introduction

The concept of constitutional dynamic chemistry (CDC)¹ and dynamic combinatorial chemistry (DCC)² is well known in disulfide chemistry.³ Due to the presence of weak S–S bonds, the formation of many products is possible in equilibrium.³ Among disulfides, unsymmetrical disulfides are challenging to synthesize due to the chemoselectivity factor.⁴ The synthesis of unsymmetrical disulfides is possible using thiols as cross dehydrogenating coupling partners. However, the use of thiols for the synthesis of unsymmetrical disulfides has less practical utility because of their unpleasant odors.⁵ In addition, disulfide exchange reactions are also reported by using thiolate ions,⁶ solid-state exchange processes in the presence of a basic catalyst,⁷ irradiation with UV light,⁸ etc. The disulfide exchange methodology is also popularly used for the construction of various supramolecular architectures.⁹

Disulfides are ubiquitously found in many organic and inorganic compounds of biological importance.¹⁰ Selective examples of disulfides used as drugs are shown in Fig. 1a. The cleavage and recombination of organo-disulfides or polysulfides generally lead to the disulfide exchange process. The exchange process is adapted to generate, alter, and degrade biologically active materials and substances.⁴ The sulfur-sulfur (S–S) bond in disulfides is easily cleavable in a reversible way using various chemical processes.¹⁰ The S–S bond cleavage is known to occur both heterolytically and homolytically. During homolytic cleavage, sulfenyl radicals are mainly gener-

ated through heating, photolysis, and oxidation processes. On the other hand, heterolytic cleavage requires ionic scission to produce a sulfenium ion (cation)¹¹ either under acidic/electrophilic conditions or from mercaptides under basic/nucleophilic conditions.¹²

Small molecule system chemistry has gained significant attention in supramolecular chemistry because it has revolutionized the constitution of complex molecular architectures.¹³ Noncovalent or weak interactions have substantial effects on organic systems to obtain selectivities in product formation by mimicking biological phenomena.¹⁴ The use of noncovalent interactions like chalcogen bonding,¹⁵ hydrophobic effect,¹⁶ halogen bonding,¹⁷ anion- π ,¹⁸ cation- π ,¹⁹ S–H... π ,²⁰ S...O,²¹ etc., which have utilities in organic synthesis, is emerging at a fast pace.²²

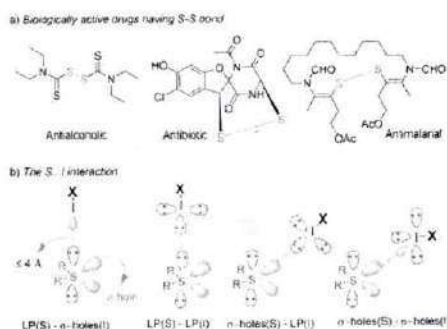


Fig. 1 (a) Examples of disulfides in natural products and drugs. (b) Types of S...I interaction.

School of Chemical Sciences, National Institute of Science Education and Research (NISER), HBNI, Bhubaneswar, PO Bhubaneswar-Pudumphur, Via Jatni, District Khurda, Odisha 752050, India. E-mail: prasenjit.mal@niser.ac.in
† Electronic supplementary information (ESI) available: NMR spectra and data. See DOI: 10.1039/d1ob01581h

Amarchand Parida

Principal

प्राचार्य/ PRINCIPAL
क्षेत्रीय शिक्षा संस्थान
Regional Institute of Education
भुवनेश्वर/ Bhubaneswar-751022

3D Monte-Carlo study of toroidally discontinuous limiter SOL configurations of Aditya tokamak

Bibhu Prasad Sahoo,¹ Devendra Sharma,¹ Ratneshwar Jha,¹ and Yühe Feng²

¹Institute for Plasma Research, HBNI, Bhat, Gandhinagar 382428, India

²Max-Planck-Institut für Plasmaphysik, Wendelsteinstr. 1, Greifswald D-17491, Germany

(Received 24 February 2017; accepted 4 July 2017; published online 21 July 2017)

The plasma-neutral transport in the scrape-off layer (SOL) region formed by toroidally discontinuous limiters deviates from usual uniform SOL approximations when 3D effects caused by limiter discreteness begin to dominate. In an upgrade version of the Aditya tokamak, originally having a toroidally localized poloidal ring-like limiter, the newer outboard block and inboard belt limiters are expected to have smaller connection lengths and a multiple fold toroidal periodicity. The characteristics of plasma discharges may accordingly vary from the original observations of large diffusivity, and a net improvement and the stability of the discharges are desired. The estimations related to 3D effects in the ring limiter plasma transport are also expected to be modified and are updated by predictive simulations of transport in the new block limiter configuration. A comparison between the ring limiter results and those from new simulations with block limiter SOL shows that for the grids produced using same core plasma equilibrium, the modified SOL plasma flows and flux components have enhanced poloidal periodicity in the block limiter case. These SOL modifications result in a reduced net recycling for the equivalent edge density values. Predictions are also made about the relative level of the diffusive transport and its impact on the factors limiting the operational regime. *Published by AIP Publishing.* [<http://dx.doi.org/10.1063/1.4994534>]

I. INTRODUCTION

The plasma transport analysis for scrape-off layer (SOL) region in tokamaks having toroidally discontinuous limiters needs to consider 3D version of the effects that already complicate toroidally symmetric plasma-target setups (e.g., either a belt limiter or divertor). One such issue is an excessive wall recycling of the plasma resulting from strong ionization in relatively long connection length zones of the SOL. Unlike the extreme heat flux realizable only at ITER scale and optimized predictively,^{1,2} the limiting influence of particle flux related issues, such as excessive wall recycling, is already evident in various small to medium size devices that witness a variety of density limits.^{3–8} In ALCATOR C, for example, it was noticed that an enhanced recycling in main chamber invokes the possibility of an alternate density limit, capable of restricting essential reactor relevant studies in a moderate size device.⁴ The conclusions related to Main Chamber Recycling (MCR) from ALCATOR C observations also indicate that this effect might influence the operations of a reactor scale device where the tight baffling of the divertors may not offer control over the main chamber neutral density and therefore over the charge exchange heat losses and sputtering of the main-chamber walls, as generally expected. Many present small and medium devices aim to achieve the conditions that allow addressing a range of issues specific to reactor like environment, and their modifications and upgrade are therefore partly motivated by these issues. An upgrade version of Aditya tokamak,⁹ presently in its testing phase, is also expected to provide a detailed opportunity to address several relevant issues considering that a well-studied toroidally localized poloidal ring limiter configuration will be

upgraded to a set of discrete low-field-side (LFS) block limiters and a continuous high-field-side (HFS) belt limiter.⁹ The second phase of upgrade will also aim to access single and double null divertor configurations. Prior to its full scale upgrade version operations, the predictive 3D simulations of the limiter SOL plasma region is carried out for obtaining many desirable estimates for upgrade operations. These estimates are desired in terms of connection length distributions, total recycling flux for aimed operational conditions, density gradient scale lengths, and flow field patterns which may be compared to highly explored original ring limiter operations. The bulk of experimental activity in Aditya has been related to edge turbulence.^{10–13} With the modifications largely made to plasma facing components (PFC) and far SOL environment, the SOL plasma transport simulations additionally allow the understanding of a more guided optimization of the initial upgrade plasma operations in terms of overall particle balance and recycling rates that influence both particle and energy inputs. The knowledge of modified flow patterns is also expected to guide new physical setup of edge diagnostics. Implementation to a newer plasma configuration may additionally enrich the database, essential for refining the predictive capacity of the available complex 3D computational tools.^{14,15}

While the transport in original ring limiter SOL configuration was simulated using 3D computations,¹⁵ an upgrade relevant toroidally discontinuous block limiter configuration was recently implemented for generating predictive results. Besides the discrete limiter configuration of startup phase operations in ITER,^{1,2} these studies are also relevant to the SOL formed at higher toroidal mode numbers, in the presence of 3D magnetic field perturbations,^{16,17} or during the

Bibhu Prasad Sahoo

Principal
Aditya Tokamak
Regional Institute of Education
Bhubaneswar-751 005

Increasing frequency of large-scale die-off events in the Bay of Bengal: reasoning, perspectives and future approaches

Biswaranjan Paital^{1,*}, Abhipsa Bal¹, Georgina A. Rivera-Ingraham^{2**} & Jehan-Hervé Lignot²

¹Department of Zoology, Orissa University of Agriculture and Technology, College of Basic Science and Humanities, Bhubaneswar 751003, India

²UMR 9190 MARBEC, Université de Montpellier, Place Eugène Bataillon, 34095, Montpellier, France

*[Email: biswaranjanpaital@gmail.com]

Received 06 March 2017; revised 04 May 2017

The Bay of Bengal has been suffering from increasing frequency of large-scale die-off events for the past decades. Most frequently, these events are attributed to high-speed human development and its harmful effects on environment, which is nevertheless, the biggest challenges currently faced by the world. Increasing urbanization, environmental pollution and climate change are leading to unsustainable ecosystem exploitation and raising health and disease management challenges. Considerable modulations in major ecosystems and major disturbances in the global food chain are some of the most significant consequences of this uncontrolled urbanization. Global warming and El Niño events are few particular phenomena that drive mass deterioration of terrestrial foliage and fauna as well as aquatic organisms, respectively. We here review and discuss the die-off events occurring in the Bay of Bengal for the last decades as well as all the data obtained from the analyses of such events to provide a future perspective on potential management and monitoring strategies directed towards the protection of the flora and fauna of several major ecosystems from such die-off events.

[**Keywords:** Aquatic environment, Bay of Bengal, climate change, conservation strategies, natural disasters, catastrophic events, satellite monitoring].

Introduction

High-speed human development is one of the biggest challenges faced by the world. Increasing urbanization and unsustainable lifestyle often leads to preoccupying levels of waste accumulation and alterations of the physico-chemical properties of the environment, challenging organisms at the lowest biological levels¹. The loss of sensitive species from impacted ecosystems leads to changes in biodiversity composition, major disturbances in the global food chain, opens windows to biological invasions and the development of pathogens and eventually leads to significant problems with human health and disease management¹⁻⁵. Global warming in particular is a cause for considerable concern due to its multiple and diverse consequences, including the mass deterioration of terrestrial foliage and fauna as well as aquatic organisms⁶⁻⁸.

As previously mentioned, change in environmental conditions challenges organisms by disturbing energetic balances and triggers changes in their

molecular and biochemical pathways⁹⁻¹¹. As a result of exceeding, for example, the thermal tolerance limits, ectotherms and other homeotherms lose control over the cellular mechanisms responsible for fueling vital processes. This causes organisms to be pushed to their physiological limits, limiting their capacity to withstand small additional shifts in their environmental conditions and eventually leading to unsustainable metabolic rates and finally, collapse¹². The resulting, sudden large-scale mortality of animals in mega ecosystems such as oceans (including coastal ecosystems) and rivers is increasing in frequency across the world. Thus, identifying the reason(s) behind these events becomes a challenging issue for current ecophysiologists, whilst conservationists seek suitable monitoring programs allowing highlighting potential conditions of vulnerability. There is however, cases where the reason(s) behind large die-off events remained unknown¹², leaving ecophysiologists facing the open challenge of understanding the physiological factors determining the sensitivity of such species, compared to other closely related organisms from catastrophic death

**Present address: Laboratoire Environnement de Petit Saut, HYDRECO, BP823, Kourou, Guyane Française.



Magnetization reversal and tunable exchange bias in $\text{GdCr}_{1-x}\text{Mn}_x\text{O}_3$ ($x=0-0.50$)

Bibhuti B. Dash, S. Ravi*

Department of Physics, Indian Institute of Technology Guwahati, Guwahati 781039, India



ARTICLE INFO

Keywords:

Gadolinium chromites
Weak ferromagnetism
Magnetization reversal
Tunable exchange bias

ABSTRACT

Single phase samples of $\text{GdCr}_{1-x}\text{Mn}_x\text{O}_3$ ($x=0-0.50$) were prepared and their magnetic properties were studied by measuring temperature and field variations of magnetization. The Neel temperature, T_N is found to decrease from $T_N=174$ K for $x=0$ to 91 K for $x=0.50$. The magnetization reversal persists upto 5 at% of Mn substitution with a magnetic compensation temperature, T_{comp} of 136 K and 139 K for $x=0$ and 0.05 respectively. However, spin reorientation induced magnetization reversal emerges for $x=0.40$ and 0.50 samples around 30 K. Tunable positive and negative exchange bias fields in the range of -1.0 kOe to $+1.6$ kOe have been observed. The origin of magnetization reversal and exchange bias field is explained in terms of antiparallel alignment of canted ferromagnetic component of Cr^{3+} ions and the paramagnetic moments of Gd^{3+} and Mn^{3+} ions under the influence of negative internal field due to antiferromagnetically ordered Cr^{3+} ions.

1. Introduction

The presence of magnetization reversal and exchange bias in orthochromites (RCrO_3) have made them as one of the important class of interesting materials due to their potential applications in magnetic recording and switches [1–4]. Magnetization reversal (MR) is a process of alignment of magnetic moments opposite to the direction of the applied field under field cooled condition thereby showing a negative magnetization. It was Neel, who first predicted MR in certain ferromagnetic spinel compounds [5] due to different temperature dependences of sublattice magnetizations. The MR behavior has been also reported in other classes of materials such as orthovanadates [6,7], manganites [8,9], orthoferrites [10], molecular magnets [11] and double perovskites [12]. In antiferromagnetic rare earth orthochromites like $\text{La}_{1-x}\text{Pr}_x\text{CrO}_3$ [13], $\text{La}_{0.5}\text{Gd}_{0.5}\text{CrO}_3$ [14], $\text{SmCr}_{1-x}\text{Mn}_x\text{O}_3$ [15] etc. the antiparallel coupling between the magnetic moments of rare earth ions (R^{3+}) and ferromagnetic component of canted Cr^{3+} ions gives rise to MR. In some of orthochromites, in addition to negative magnetization, exchange bias behavior [16,17] which has wide applications in magnetic recording devices has been reported [18,19]. The signature of exchange bias (EB) effect in a system is the unsymmetrical magnetic hysteresis loop leading to two different coercive fields at positive and negative fields or in other words the shifting of the center of loop to either towards positive or negative field axis. This usually arises as a result of anisotropic exchange interaction at the interface of ferromagnetic (FM) and antiferromagnetic (AFM) regions. Co-CoO

[20,21] nanostructure is an example of such a system where the exchange bias occurs due to the interaction between the ferromagnetic Co and antiferromagnetic CoO at their interface. This property has been widely studied in various heterostructured systems like bilayer or multilayer of FM/AFM, FM/ferrimagnet and FM/spin glass [18]. However EB is also reported in bulk samples such as $\text{La}_{1-x}\text{Pr}_x\text{CrO}_3$ [1], $\text{Sr}_2\text{YbRuO}_6$ [22] and NdMnO_3 [23] and the mechanism of EB in these systems is different from those of bilayer and multilayer.

GdCrO_3 is a well known perovskite having canted antiferromagnetism behavior with a Neel temperature of 170 K [24] and it is also known to exhibit magnetization reversal in both bulk and nanocrystalline forms. In the case of bulk sample, the origin of MR is due to the antiparallel alignment of Gd^{3+} and Cr^{3+} sublattice moments and their different temperature dependence [24,25] whereas in nanocrystalline material it is attributed to the core shell model [26]. In order to further tune the magnetic compensation temperature and exchange bias field we have taken up the detailed study of Mn^{3+} substitution at Cr^{3+} site of GdCrO_3 . The structural and magnetic properties of $\text{GdCr}_{1-x}\text{Mn}_x\text{O}_3$ samples are presented in this report.

2. Experimental details

Polycrystalline samples of $\text{GdCr}_{1-x}\text{Mn}_x\text{O}_3$ ($x=0-0.50$) were prepared from stoichiometric ratio of Gd_2O_3 , $\text{Cr}(\text{NO}_3)_3 \cdot 9\text{H}_2\text{O}$ and manganese acetate all with 99.9% purity, using the standard sol-gel method. The starting oxide compound Gd_2O_3 was dissolved in nitric

* Corresponding author.

E-mail address: sravi@iitg.ernet.in (S. Ravi).

<http://dx.doi.org/10.1016/j.jmmm.2017.01.042>

Received 4 October 2016; Received in revised form 2 December 2016; Accepted 13 January 2017

Available online 16 January 2017

0304-8853/ © 2017 Elsevier B.V. All rights reserved.

Bibhuti B. Dash

S. Ravi

Principal
Regional Institute of Education
Sector 12, Gurgaon, Haryana 122002

ions 4f-4f electronic transitions. The observed PL emission is schematically described with the help of a band diagram (Figure 4(a)) and/or energy level diagram in (Figure 4(b)).

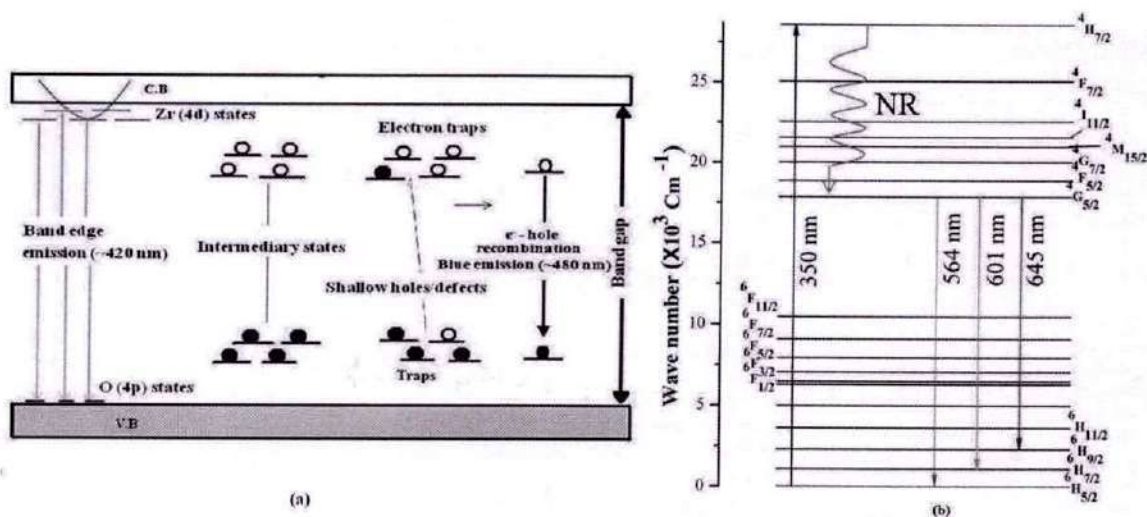


Figure A.4. Proposed wide band model diagram facilitating intrinsic PL emission from BZO (a) and energy level diagram of Ba_{1-x}Sm_{2x/3}ZrO₃ showing Sm³⁺ transitions in the visible region (b).

To summarize, we have investigated the structural and photophysical properties of Sm³⁺ substituted BZO ceramics. A decrease in optical band gap with increase in Sm³⁺ concentration is explained on the basis of defects and disorderness resulted due to Sm³⁺ ion substitution. This is in agreement with the calculated Urbach energy for all the samples. It is also confirmed that tunable band gaps can be obtained by varying concentration of samarium in BaZrO₃ perovskite. The PL spectra of all the composition is dominated by BaZrO₃ intrinsic emission in the violet-blue region. The localized states turn out to be the fundamental conditions for photoluminescence behavior in these materials. The photoluminescence emission is explained on the basis of a proposed wide band model and energy level diagram of Sm³⁺ ion. However, the study of luminescence efficiency, lifetime and branching ratios of the excited states may give better explanation of the interaction of substituted ion in the host BZO matrix and the energy transfer mechanism in the material, which is the future scope of the work.

Monocrotophos induced histopathological and biochemical Changes in gills, stomach and intestine of *Anabas testudineus* (Cuvier)

Sapana Yadav

PGT Biology, Mildredian Sacred Senior Secondary School, Tundla, Firozabad (UP), India

Shreoshi Haldar

Department of Life Science Education, Regional Institute of Education, Bhubaneswar-751022 (Odisha), India

Deepshikha

Department of Life Science Education, Regional Institute of Education, Bhubaneswar - 751022 (Odisha), India

Animesh Kumar Mohapatra*

Department of Life Science Education, Regional Institute of Education, Bhubaneswar-751022 (Odisha), India

*Corresponding author. E-mail: akmcncert@gmail.com

Article Info

DOI:10.31018/jans.v11i2.2110

Received: May 6, 2019

Revised: June 5, 2019

Accepted: June 10, 2019

How to Cite

Yadav, S. *et al.* (2019). Monocrotophos induced histopathological and biochemical Changes in gills, stomach and intestine of *Anabas testudineus* (Cuvier). *Journal of Applied and Natural Science*, 11 (2): 534 - 544 <https://doi.org/10.31018/jans.v11i2.2110>

Abstract

Monocrotophos, an organophosphate pesticide is used frequently in paddy fields of India. Although its impact of toxicity has been reported in many organisms, its effect on digestive and respiratory organs in *Anabas testudineus* is scanty. The Present investigation was conducted to evaluate the impact of histopathological and biochemical indices on freshwater fish *A. testudineus* exposed to sub-lethal concentration (45 ppm) of an organophosphorous pesticide monocrotophos (MT). Severe histoarchitectural and biochemical changes were observed in fishes exposed to monocrotophos when compared to fishes of control group. Exposure of fishes to the pesticide resulted in induction of histological abnormalities in gills, stomach and intestine. This was accompanied with reduction in total protein content and an elevation in catalase activity in gills, stomach and intestine. These structural alterations of the gills, stomach and intestine could affect respiration, digestion and absorption of nutrients which in turn could adversely affect growth and survival of the freshwater fish *A. testudineus*. The result of this investigation serves as a biomonitoring tool for the effects of organophosphorous pesticide MT on the aquatic biota.

Keywords: Catalase, Gills, Histopathology, Intestine, Monocrotophos, Protein, Stomach

INTRODUCTION

Freshwater ecosystem has been polluted by continuous discharge of wastewater from agricultural practices. The wastewater contains various amounts of chemical substances, such as pesticides that results in potential health hazards to live stock, especially fishes. Fishes are among the group of non-targeted aquatic organism. They serve as bioindicator of water quality and the effect of pesticides can be studied by analysing the histoarchitecture and biochemical parameters of various organs (Rao and Pillai, 2001; Bartoskova *et al.*, 2013; Faggio *et al.*, 2014a, b; Gobi *et al.*, 2018). A wide variety of pesticides and insecticides are used in agricultural fields (Sumithion, Lorsbon, Aluminium chloride, Endosulfan, Monocrotophos, Chlorpyrifos, Dichlorvos, Almix 20WP, Profenofos,

Diethylphthalate, Dimethoate, Phosalone). Among them monocrotophos, an organophosphorous pesticide is used by many for rice cultivation as it is cost effective.

Review of available literature on fish and environmental pollutants indicate that the sub-lethal doses of most of the pesticides cause behavioural changes, varying extent of histopathological injuries to different organs in fishes and biochemical changes; the amount of damages are usually dependent on dose, duration of exposure and type of pesticide (Tilak *et al.*, 2005; Cengiz and Unlu, 2006; Mishra *et al.*, 2006, 2008; Ghanbahadur and Ghanbahadur, 2012; Oguei *et al.*, 2013; Senapati *et al.*, 2013; Pandey *et al.*, 2014; Ullah *et al.*, 2014; Ullah and Zorriehzakra, 2015). Recently, Marigoudar *et al.* (2018), and Zahran *et al.* (2018) reported that chlorpyrifos induced patho-

Role of parents in the development of social competency among adolescents

Indu Bala Agarwal & Prakash Chandra Agarwal

To cite this article: Indu Bala Agarwal & Prakash Chandra Agarwal (2018): Role of parents in the development of social competency among adolescents, Journal of Human Behavior in the Social Environment, DOI: [10.1080/10911359.2018.1465004](https://doi.org/10.1080/10911359.2018.1465004)

To link to this article: <https://doi.org/10.1080/10911359.2018.1465004>



Published online: 25 Apr 2018



Submit your article to this journal [↗](#)



Article views: 16



View Crossmark data [↗](#)

Full Terms & Conditions of access and use can be found at
<http://www.tandfonline.com/action/journalInformation?journalCode=whum20>

प्रदेशीय शिक्षा संस्थान
Regional Institute of Education
भुवनेश्वर / Bhubaneswar-751022



Structural, magnetic and electrical properties of Fe substituted GdCrO_3

Bibhuti. B. Dash, S. Ravi*

Department of Physics, Indian Institute of Technology Guwahati, Guwahati, 781039, India



ARTICLE INFO

Keywords:

Weak ferromagnetism
Magnetization reversal
Impedance spectroscopy
Gd(Cr, Fe)O series

ABSTRACT

Single phase samples of bulk $\text{GdCr}_{1-x}\text{Fe}_x\text{O}_3$ were prepared for $x = 0$ to 0.50. The lattice parameters obtained from Rietveld refinement based on $P6_{3mm}$ space group show that they increase systematically with Fe concentration, i.e. with $a = 5.3145 \text{ \AA}$, $b = 5.5249 \text{ \AA}$ and $c = 7.6068 \text{ \AA}$ for $x = 0$ to $a = 5.3330 \text{ \AA}$, $b = 5.5670 \text{ \AA}$, and $c = 7.6382 \text{ \AA}$ for $x = 0.50$. Magnetization measurement shows that all samples exhibit antiferromagnetic transition. Their Neel temperature (T_N) gradually decreases upto $x = 0.20$ and beyond that it increases quite sharply due to considerable concentration of $\text{Fe}^{3+} - \text{O}^{2-} - \text{Fe}^{3+}$ networks. The magnetization reversal observed in the parent compound (GdCrO_3) is found to be suppressed upon Fe substitution and however for $x = 0.40$, magnetic compensation is observed at $T_{\text{comp}} = 125 \text{ K}$. They are explained by considering the variation in the magnitude of weak ferromagnetic moment for different Fe concentrations. Complex impedance spectra measured at different temperatures above room temperature show the thermally activated relaxation of charge carriers with contribution from both grains and grain boundaries. The relaxation frequency of charge carriers and dc conductivity follow the Arrhenius law with comparable activation energy values.

1. Introduction

Rare earth orthochromites RCrO_3 ($R = \text{rare earth or Y}$) with orthorhombically distorted perovskite (ABO_3) structure draw significant research interest due to their rich and unique magnetic properties like magnetization reversal (MR) and exchange bias (EB) [1–8]. MR and EB have been reported in several RCrO_3 ($R = \text{Gd, Sm, Tm}$) compounds due to the competition between the R^{3+} moment and the canted weak FM component of Cr^{3+} ions [9–11]. The structural and magnetic properties of RCrO_3 compounds are greatly tuned by substituting R and Cr ions by other rare earth and transition elements. The substitution of Cr by Fe ion in YCrO_3 induces MR with a compensation temperature of 265 K even though such MR is absent in both YCrO_3 and YFeO_3 compounds [12]. Recent reports on HoCrO_3 suggest that Fe substitution leads to increase in T_N value while the Gd substitution at Ho site gives rise to magnetocaloric behavior at low temperature [13,14]. The substitution of Mn and Fe at Cr site of NdCrO_3 is known to induce MR with a maximum magnetic compensation temperature of 169 K in $\text{NdCr}_{0.85}\text{Fe}_{0.15}\text{O}_3$ compound [15,16]. Similarly, the substitution of Y or Ho for Dy in DyCrO_3 lowers the magnetocaloric response while the Er substitution gives rise to increase in the magnetocaloric effect [17]. In addition, several RCrO_3 ($R = \text{Dy, Ho, Yb, Lu, Y}$) compounds are known to exhibit magnetoelectric and multiferroic properties simultaneously due to the coexistence of both magnetic and ferroelectric ordering

[5,18,19]. However, the origin of multiferroicity in these materials is still not understood completely. Such multiferroicity and ME behaviors have been observed in Fe and Mn substituted materials such as $\text{Dy-Fe}_{0.50}\text{Cr}_{0.50}\text{O}_3$ [20] and $\text{YCr}_{1-x}\text{M}_x\text{O}_3$ ($M = \text{Fe or Mn}$) [21]. The strength of ME coupling is greatly influenced by the substitution at the rare earth site [22].

GdCrO_3 is one of the interesting orthochromites having a magnetic rare earth ion with an orthorhombic crystal structure ($P6_{3mm}$ space group). It undergoes antiferromagnetic ordering with G-type magnetic structure and Neel temperature (T_N) of 170 K [9,23]. Interesting MR behavior has been reported in this compound due to the antiparallel alignment of Gd^{3+} moment with that of weak ferromagnetic (FM) component of Cr^{3+} ions due to spin canting [23]. The substitution of Mn at the Cr site and Y at the Gd site of GdCrO_3 show the magnetization reversal and tunable exchange bias behavior [24,25]. The Fe substitution for Cr leads to a giant magnetocaloric effect with a typical magnetic entropy change (ΔS) value of 29 J/Kg·K [26]. In the present work, a series of $\text{GdCr}_{1-x}\text{Fe}_x\text{O}_3$ ($x = 0-0.50$) samples were prepared by citrate based sol-gel method and their structural, magnetic and electrical properties are investigated.

2. Experimental details

Polycrystalline samples of $\text{GdCr}_{1-x}\text{Fe}_x\text{O}_3$ for $x = 0, 0.05, 0.10, 0.20,$

* Corresponding author.

E-mail address: sravi@iitg.ernet.in (S. Ravi).

<https://doi.org/10.1016/j.solidstatesciences.2018.07.018>

Received 11 May 2018; Received in revised form 25 July 2018; Accepted 26 July 2018

Available online 27 July 2018

1293-2558/ © 2018 Elsevier Masson SAS. All rights reserved.

Bibhuti B. Dash

S. Ravi
Regional Institute of Education
भारतीय शिक्षा संस्थान
भुवनेश्वर / Bhubaneswar-751022

- [27] S. Badwal, Investigation of the stability of ceria-gadolinia electrolytes in solid oxide fuel cell environments, *Solid State Ionics*, 121 (1999) 253-262.
- [28] D.J. Seo, K.O. Ryu, S.B. Park, K.Y. Kim, R.-H. Song, Synthesis and properties of $\text{Ce}_{1-x}\text{Gd}_x\text{O}_{2-x/2}$ solid solution prepared by flame spray pyrolysis, *Materials Research Bulletin*, 41 (2006) 359-366.
- [29] A.S. Babu, R. Bauri, Rare Earth Co-Doped Nanocrystalline Ceria Electrolytes for Intermediate Temperature Solid Oxide Fuel Cells (IT-SOFC), *ECS Transactions*, 57 (2013) 1115-1123.
- [30] C. Sun, R. Hui, J. Roller, Cathode materials for solid oxide fuel cells: a review, *Journal of Solid State Electrochemistry*, 14 (2009) 1125-1144.
- [31] E. Fabbri, D. Pergolesi, E. Traversa, Electrode materials: a challenge for the exploitation of protonic solid oxide fuel cells, *Science and technology of advanced materials*, 11 (2010) 044301.
- [32] H. Yokokawa, T. Horita, Chapter 5 - Cathodes, in: S.C. Singhal, K. Kendall (Eds.) *High Temperature and Solid Oxide Fuel Cells*, Elsevier Science, Amsterdam, 2003, pp. 119-147.
- [33] R. Bauri, Development of Ni-YSZ cermet anode for solid oxide fuel cells by electroless Ni coating, *Journal of Coatings Technology and Research*, 9 (2009) 229-234.
- [34] T. Priyatham, R. Bauri, Synthesis and characterization of nanocrystalline Ni-YSZ cermet anode for SOFC, *Mater Charact*, 61 (2010) 54-58.
- [35] N.T.Q. Nguyen, T.A. Trieu, H.H. Yoon, Preparation of La/Co/Ni-based anode catalyst for biogas-fueled solid oxide fuel cells, *Journal of Electroceramics*, 35 (2015) 75-80.
- [36] M. Oishi, K. Yashiro, J. Hong, Y. Nigara, T. Kawada, J. Mizusaki, Oxygen nonstoichiometry of B-site doped LaCrO_3 , *Solid State Ionics*, 178 (2007) 307-312.
- [37] Y. Chen, X. Lu, Y. Ding, X. Liu, G. Meng, Microwave assisted synthesis, sinterability and properties of Ca-Zn co-doped LaCrO_3 as interconnect material for IT-SOFCs, *Journal of Rare Earths*, 28 (2010) 153-157.
- [38] K.D. Kreuer, Proton-Conducting Oxides, *Annual Review of Materials Research*, 33 (2003) 333-359.
- [39] S.M. Haile, Materials for fuel cells, *Materials Today*, 6 (2003) 24-29.



Research articles

Magnetization reversal and exchange bias study in bulk $\text{Gd}_{1-x}\text{Y}_x\text{CrO}_3$ ($x = 0.0-1.0$)

Bibhuti B. Dash, S. Ravi*

Department of Physics, Indian Institute of Technology Guwahati, Guwahati 781039, India



ARTICLE INFO

Article history:

Received 5 October 2017

Received in revised form 21 April 2018

Accepted 23 April 2018

Available online 24 April 2018

Keywords:

Orthochromites

Weak ferromagnetism

Magnetization reversal

Tunable exchange bias

ABSTRACT

Single phase samples of $\text{Gd}_{1-x}\text{Y}_x\text{CrO}_3$ ($x = 0.0-1.0$) were prepared by sol-gel method. Lattice parameters obtained from the Rietveld refinement are found to decrease from $a = 5.3129 \text{ \AA}$, $b = 5.5210 \text{ \AA}$, and $c = 7.6040 \text{ \AA}$ for $x = 0$ to $a = 5.2428 \text{ \AA}$, $b = 5.5208 \text{ \AA}$ and $c = 7.5340 \text{ \AA}$ for $x = 1.0$. The temperature variation of magnetization measurements show that all samples exhibit antiferromagnetic transitions and the Neel temperature (T_N) decreases from $T_N = 174 \text{ K}$ for $x = 0.0$ to 142 K for $x = 1.0$. Interesting magnetization reversal behavior is observed as the temperature is lowered from T_N under field cooled condition and the magnetic compensation temperature, T_{comp} is found to decrease from 136 K for $x = 0$ to 42 K for $x = 0.70$. These samples exhibit tunable positive and negative exchange bias fields with a maximum negative value of -1.17 kOe for $x = 0.50$. The origin of magnetization reversal and exchange bias field is explained by considering the competition between the paramagnetic moment of Gd^{3+} ions under the influence of negative internal field and the weak ferromagnetic component of Cr^{3+} ions due to canted antiferromagnetic ordering.

© 2018 Elsevier B.V. All rights reserved.

1. Introduction

The study of exchange bias has drawn a great deal of interest due to its potential technological applications in magnetic recording devices, spin valves, spintronic devices and in magnetic random access memory devices [1–7]. The Exchange Bias (EB) in a system is manifested as a shift in the center of the isothermal magnetic hysteresis loop towards either positive or negative field axis. Such shifting towards positive and negative field axes is known as positive exchange bias (PEB) and negative exchange bias (NEB) respectively. This behavior is mainly observed in various heterostructured system having bilayer and multilayer of ferromagnet (FM)/antiferromagnet (AFM), FM/ferrimagnet (FIM), etc. [1,7–10]. The EB arises as a result of the anisotropic exchange interaction at the interface of FM and AFM layers when the sample is cooled down in the presence of an external magnetic field through the Neel temperature (T_N) of the AFM material [7]. The EB effect was first discovered by Meiklejohn and Bean [9,10] in the Co-CoO nanostructured system where it is attributed to the exchange coupling between the ferromagnetic Co and the antiferromagnetic CoO at their interface. Recently, the EB behavior has been reported in various bulk single phase materials, like double

perovskite, manganites, cobalites, etc. where different types of mechanisms plays a role [11–14]. For, example in NdMnO_3 [12] the local ordering of Nd^{3+} moments and their antiferromagnetic coupling with the net ferromagnetic component of Mn^{3+} ions gives rise to exchange bias. The competition between the single ion anisotropy and Dzyaloshinskii-Moriya (DM) interaction leads to the EB in YCrO_3 system [14]. In perovskite rare earth orthochromites (RCrO_3), the antiparallel coupling between the weak ferromagnetic component of Cr^{3+} ions and magnetic moment of rare earth (R^{3+}) ions gives rise to EB [15–17]. In $\text{La}_{1-x}\text{Pr}_x\text{CrO}_3$ and NdMnO_3 compounds, interesting tunable EB is observed by just changing the magnitude of cooling magnetic field [12,15]. Tunable positive and negative EB is reported by changing the magnitude of cooling field and varying the temperature in $\text{Sr}_2\text{YbRuO}_6$, and TmCrO_3 [11,18]. It has been reported in some polycrystalline materials that the EB behavior co-exists with another interesting behavior known as magnetization reversal (MR), where the M switches its sign with the change in temperature [11,15,19]. It arises due to the alignment of the magnetic moments opposite to the direction of the applied field under field cooled condition. In antiferromagnetic RCrO_3 , the magnetization reversal is observed either due to the alignment of magnetic moment of rare earth ions opposite to that of net ferromagnetic component of Cr^{3+} ions or due to the paramagnetic moment under the negative internal field [15,16].

* Corresponding author.

E-mail address: sravi@iitg.ernet.in (S. Ravi).

प्राचार्य/ PRINCIPAL
क्षेत्रीय शिक्षा संस्था
Regional Institute of Education
भुवनेश्वर/ Bhubaneswar, Odisha, India

- [13] D. Sánchez, S. Ubertini, J.M. Muñoz de Escalona, R. Chacartegui, Potential of molten carbonate fuel cells to reduce the carbon footprint of large reciprocating engines, *International Journal of Hydrogen Energy*, 39 (2014) 4081-4088.
- [14] T. Watanabe, Molten Carbonate Fuel Cells, (2012) 1729-1754.
- [15] N.Q.M.a.T. Takahashi, Science and Technology of Ceramic Fuel Cells, (1995).
- [16] T. Ishihara, N.M. Sammes, O. Yamamoto, Electrolytes, (2003) 83-117.
- [17] S. Singhal, Advances in solid oxide fuel cell technology, *Solid State Ionics*, 135 (2000) 305-313.
- [18] A.B. Stambouli, E. Traversa, Solid oxide fuel cells (SOFCs): a review of an environmentally clean and efficient source of energy, *Renewable and Sustainable Energy Reviews*, 6 (2002) 433-455.
- [19] Y. Fujita, T. Nishimura, T. Yagi, M. Matsumura, Degradation of the Components in Molten Carbonate Fuel Cells with Li/Na Electrolyte, *Electrochemistry*, 71 (2003) 7-13.
- [20] H. Yokokawa, Overview of Intermediate-Temperature Solid Oxide Fuel Cells, (2009) 17-43.
- [21] P.E. Dodds, I. Staffell, A.D. Hawkes, F. Li, P. Grünwald, W. McDowall, P. Ekins, Hydrogen and fuel cell technologies for heating: A review, *International Journal of Hydrogen Energy*, 40 (2015) 2065-2083.
- [22] S. Badwal, S. Giddey, C. Munnings, A. Kulkarni, Review of progress in high temperature solid oxide fuel cells, *ChemInform*, 46 (2015).
- [23] H. Taroco, J. Santos, R. Domingues, T. Matencio, Ceramic materials for solid oxide fuel cells, *Advances in Ceramics-Synthesis and Characterization, Processing and Specific Applications*, (2011) 423-446.
- [24] S. Badwal, Scandia-zirconia electrolytes for intermediate temperature solid oxide fuel cell operation, *Solid State Ionics*, 136-137 (2000) 91-99.
- [25] V.V. Kharton, E.N. Naumovich, A.A. Yaremchenko, F.M.B. Marques, Research on the electrochemistry of oxygen ion conductors in the former Soviet Union, *Journal of Solid State Electrochemistry*, 5 (2001) 160-187.
- [26] V.V. Lakshmi, R. Bauri, Phase formation and ionic conductivity studies on ytterbia co-doped scandia stabilized zirconia (0.9ZrO₂-0.09Sc₂O₃-0.01Yb₂O₃) electrolyte for SOFCs, *Solid State Sci*, 13 (2011) 1520-1525.



Research articles

Effect of Yttrium substitution on the structural and magnetic properties of GdCrO_3 

Bibhuti B. Dash, S. Ravi*

Department of Physics, Indian Institute of Technology Guwahati, Guwahati 781039, India

ARTICLE INFO

Article history:

Received 27 January 2017

Received in revised form 23 May 2017

Accepted 11 June 2017

Available online 13 June 2017

Keywords:

Gadolinium chromites

Yttrium substitution

Magnetization reversal

ABSTRACT

We report the preparation of single phase samples of $\text{Gd}_{1-x}\text{Y}_x\text{CrO}_3$ ($x = 0-0.30$) compounds using the sol-gel method. Analysis of X-ray diffraction patterns shows a systematic decrease in lattice parameters a , c and volume of the unit cell with increase in Y concentration. Raman spectra recorded at room temperature shows a systematic shift of various modes towards higher wave number suggesting the presence of lattice distortion. The temperature variation of magnetization measurements show the presence of magnetization reversal and the magnetic compensation temperature is found to decrease upon Y doping. The origin of magnetization reversal is explained by considering competition between the paramagnetic moment of Gd^{3+} ions under the influence of negative internal field and the weak ferromagnetic component of Cr^{3+} ions due to canted antiferromagnetic ordering.

© 2017 Elsevier B.V. All rights reserved.

1. Introduction

Rare earth orthochromites with general formula RCrO_3 ($R = \text{rare earth or Y}$) are an important class of multifunctional materials due to their rich physical properties like magnetization reversal (MR), exchange bias, magnetocaloric effect and multiferroicity which find potential applications in magnetic recording, data storage, thermomagnetic switches and magnetic refrigeration [1–8]. RCrO_3 with an orthorhombically distorted perovskite structure exhibits canted antiferromagnetism below their Neel temperature (T_N) and the canting arises due to the antisymmetric Dzyaloshinskii-Moriya interaction (DM) [9,10] which also accounts for the origin of weak ferromagnetism in these materials [11]. In these orthorhombically distorted perovskite materials, the magnetic exchange interaction between Cr^{3+} ions and the rare earth ions (R^{3+}) leads to spin reorientation transition at low temperature [12].

GdCrO_3 is known to exhibit canted antiferromagnetic structure with a Neel temperature (T_N) of 170 K and moreover it undergoes spin reorientation transition from $\Gamma_4(G_x, A_y, F_z)$ to $\Gamma_2(F_x, C_y, G_z)$ phase at $T_{SR} = 7$ K [11]. GdCrO_3 is also one of the promising materials for magnetic refrigeration due to its large magneto-caloric effect with a typical change in magnetic entropy (ΔS) value of 32 J/kg-K at 5 K [8]. It also exhibits an interesting behavior of temperature induced magnetization reversal in both polycrystalline and nanocrystalline forms [1,13]. Magnetization reversal has also

been reported in other class of materials such as ferrimagnetic compounds [14], orthovandates [15] and double perovskites [16]. In ferrimagnetic compounds like spinel oxides the origin of MR is attributed to the different temperature dependences of magnetization in the two antiferromagnetically coupled sublattices. For orthovandates such as YVO_3 , the competition between single ion anisotropy and antisymmetric DM interaction causes the reversal of magnetization [15] and the same mechanism is found to play a role in $\text{BiFe}_{0.5}\text{Mn}_{0.5}\text{O}_3$ [17] and $\text{YFe}_{0.5}\text{Cr}_{0.5}\text{O}_3$ [7]. In double perovskites like $\text{Sr}_2\text{YbRuO}_6$ [16], the alignment of paramagnetic Yb^{3+} moments opposite to the ordered Ru^{3+} moments facilitates MR. In case of polycrystalline orthochromites like GdCrO_3 , the origin of magnetization reversal is mainly ascribed to paramagnetic moment of the rare earth ions such as Gd^{3+} whose direction is opposite to that of canted moment of Cr^{3+} ions [1,11]. In this work, we have prepared a series of Y^{3+} doped GdCrO_3 samples by using the sol-gel method. The effect of doping on the structural and magnetic properties is presented. MR is observed in the parent compound as well as in the substituted samples. The origin of observed magnetization reversal is explained by considering the competition between the rare earth (Gd^{3+}) moments in the negative internal field and the ferromagnetic component of canted Cr^{3+} moments.

2. Experimental details

Polycrystalline samples of $\text{Gd}_{1-x}\text{Y}_x\text{CrO}_3$ ($x = 0.0, 0.10, 0.20, 0.30$) were prepared from the stoichiometric ratio of Gd_2O_3 , Y_2O_3 , and Cr

* Corresponding author.

E-mail address: sravi@iitg.ernet.in (S. Ravi).<https://doi.org/10.1016/j.jmmm.2017.06.068>

0304-8853/© 2017 Elsevier B.V. All rights reserved.

माचार्य/PRINCIPAL
केन्द्रीय शिक्षण संस्थान
Regional

References

- [1] S. Basu, Proton Exchange Membrane Fuel Cell Technology: India's Perspective, Proceedings of the Indian National Science Academy, 81 (2015).
- [2] <https://powermin.nic.in/>.
- [3] <https://mnre.gov.in/>.
- [4] D.K. Niakolas, M. Daletou, S.G. Neophytides, C.G. Vayenas, Fuel cells are a commercially viable alternative for the production of "clean" energy, *Ambio*, 45 Suppl 1 (2016) S32-37.
- [5] S. Wang, S.P. Jiang, Prospects of Fuel Cell Technologies, *National Science Review*, (2017) nww099.
- [6] N.H. Behling, Fuel Cells and the Challenges Ahead, (2013) 7-36.
- [7] P. Costamagna, C. Yang, A.B. Bocarsly, S. Srinivasan, Nafion®115/zirconium phosphate composite membranes for operation of PEMFCs above 100 °C, *Electrochimica Acta*, 47 (2002) 1023-1033.
- [8] M. Rikukawa, K. Sanui, Proton-conducting polymer electrolyte membranes based on hydrocarbon polymers, *Progress in Polymer Science*, 25 (2000) 1463-1502.
- [9] A. Chandan, M. Hattenberger, A. El-kharouf, S. Du, A. Dhir, V. Self, B.G. Pollet, A. Ingram, W. Bujalski, High temperature (HT) polymer electrolyte membrane fuel cells (PEMFC) – A review, *Journal of Power Sources*, 231 (2013) 264-278.
- [10] S.V.M. Guaitolini, J.F. Fardin, Fuel Cells: History (Short Remind), Principles of Operation, Main Features, and Applications, (2018) 123-150.
- [11] D.E. Eapen, S.R. Suseendiran, R. Rengaswamy, Phosphoric acid fuel cells, (2016) 57-70.
- [12] A.L. Dicks, Molten carbonate fuel cells, *Current Opinion in Solid State and Materials Science*, 8 (2004) 379-383.

Dr. Kalinga Kelake



2018

ISSN : 0976-1160

EDUSEARCH



(Bi-annual & Bi-lingual)

PEER GROUP REVIEWED
JOURNAL OF EDUCATIONAL RESEARCH

UGC ENLISTED

➤ VOLUME - 9

➤ NUMBER - 1

➤ APRIL - 2018



RESEARCHERS ORGANIZATION BILASPUR CHHATTISGARH

(Regd.No. 13554/11)

website : www.researchorgbsp.org

Ketaki
Principals

प्रधानाचार्य/PRINCIPAL
क्षेत्रीय शिक्षा संस्थान
Regional Institute of Education
भुवनेश्वर/Bhubaneswar

2018

EDUSEARCH
ISSN: 0976-1160
Vol. 9, No.1, Apr. 2018

Human Rights Education in 21st Century: An overview

*Dr. Kalinga Ketaki**

Key Words : Human Rights, Values, Genocide, Peace and Security

Abstract

Human rights education (HRE) is an emergent field of educational theory and practice gaining increased attention and significance across the globe. The international human rights movement, spurred by the efforts of nongovernmental organizations, the United Nations and other regional human rights bodies, has broadened its focus, by seeking to integrate human rights concepts, norms and values within the mainstream educational systems of world states. This effort, which has gained momentum since the early 1990s, has spawned a growing body of educational theory, practice and research that often intersects with activities in other fields of educational study, such as citizenship education, peace education, anti-racism education, genocide education, education for sustainable development and education for intercultural understanding. In addition, there are primary resources available in relation to the practice of human rights education, such as teaching resources, syllabi, curricular policies as well as secondary resources such as conference proceedings. The purpose of this article is to provide an overview of some of the research that has been carried out to date, some preliminary findings, and some promising areas for future research.

Introduction

In 21st century human rights education is an important field of educational theory and practice and gaining increased attention and significance across the world. The international human rights movement, spurred by the efforts of nongovernmental organizations, the United Nations and other regional human rights bodies, has broadened its focus since the late 1970s, by seeking to integrate human rights concepts, norms and values within the mainstream educational systems of world states. This effort, which has gained momentum since the early 1990s, has

spawned a growing body of educational theory, practice and research that often intersects with activities in other fields of educational study, such as citizenship education, peace education, anti-racism education and genocide education, education for sustainable development and education for intercultural understanding. The recognition of the importance of human rights education for the implementation and for the respect of human rights has grown in the recent years. It is expected to be reinforced even further by the United Nations Declaration on Human Rights Education and Training. As human rights education has expanded

Ketaki

प्राचार्य/ PRINCIPAL
क्षेत्रीय शिक्षा संस्थान
Regional Institute of Education
भुवनेश्वर/ Bhubaneswar-751022

शैक्षिक मंथन

(द्विभाषी मासिक)

शैक्षिक क्षेत्र की प्रतिनिधि पत्रिका

वर्ष : 9 अंक : 9 1 अप्रैल, 2017

(चैत्र-वैशाख, विक्रम संवत् 2074)

संरक्षक
मुकुन्द कुलकर्णी □ के.नरहरि

परामर्श
डॉ. विमल प्रसाद अग्रवाल
जगदीश प्रसाद सिंघल

सम्पादक
सन्तोष पाण्डेय

सह सम्पादक
विष्णुप्रसाद चतुर्वेदी □ भरत शर्मा

संपादक मंडल
प्रो. नन्दकिशोर पाण्डेय
डॉ. नाथू लाल सुमन
डॉ. एस.पी. सिंह
डॉ. ओमप्रकाश पारीक

प्रबन्ध सम्पादक
महेन्द्र कपूर

व्यवस्थापक
बजरंग प्रसाद मजेजी

प्रेषण प्रभारी
बसन्त जिन्दल □ नौरंग सहाय भारतीय
कार्यालय प्रभारी
आलोक चतुर्वेदी : 9782873467

प्रकाशकीय कार्यालय
82, पटेल कॉलोनी, सरदार पटेल मार्ग,
जयपुर (राज.) 302001
दूरभाष : 9414040403

दिल्ली ब्यूरो :
शैक्षिक महासंघ सदन, 606/13,
कृष्णा गली नं.9, मौजपुर, दिल्ली-110053
दूरभाष : 011-22914799

E-mail :
shaikshikmanthan@gmail.com
Visit us at :
www.shaikshikmanthan.com

एक प्रति 20/- वार्षिक शुल्क 200/-
आजीवन (दस वर्ष) 1500/-

पृष्ठ संयोजन : सागर कम्प्यूटर, जयपुर

शैक्षिक मंथन मासिक
में प्रकाशित सामग्री से संपादक मण्डल
का सहमत होना आवश्यक नहीं है।

अधिगम स्तर : वर्तमान परिदृश्य व चुनौतियाँ □ डॉ. इन्दुबाला अग्रवाल

भारत को स्वतंत्र हुए 70 वर्ष पूरे हो रहे हैं। हम अब भी न्यूनतम अधिगम पर अटकते हैं। आवश्यकता है कि विशिष्ट कौशलों के विकास की जो बालक को जीवन में स्वावलम्बन व रोजगार दे सकें। जो परिवारों को भविष्य की अनिश्चितताओं की चिंता से मुक्त कर सकें। ऐसे स्रोतों का विकास गाँव-गाँव,



7

चौपाल-चौपाल और घर-घर हो, ताकि ना केवल बालक वरन् प्रौढ़ भी स्वतः शिक्षा प्राप्त कर सकें, व बच्चों को कर्मठ बनने की प्रेरणा मिले जिससे शिक्षा की अलख घर-घर जगा पाए। शिक्षा के प्रति आस्था उत्पन्न हो।

अनुक्रम

- | | |
|--|--------------------------|
| 4. न्यूनतम अधिगम स्तर व शिक्षा की गुणवत्ता | - सन्तोष पाण्डेय |
| 9. बढ़ता बोझ, घटता अधिगम | - विष्णुप्रसाद चतुर्वेदी |
| 11. शिक्षण की प्राथमिकता-अधिगम | - डॉ. रेखा भट्ट |
| 13. कैसे बढ़े शिक्षा की गुणवत्ता | - बजरंगी सिंह |
| 15. शिक्षा की दशा व दिशा | - श्रीमती ममता मंजुनाथ |
| 19. प्रतिभा नवोन्मेष की आधारशिला-अधिगम | - प्रो. मधुर मोहन रंगा |
| 22. शिक्षा : परिसर का परिवेश | - एम.जे. वारसी |
| 24. नींव ही कमजोर है | - अश्विनी कुमार |
| 26. M.L.L. and Some Thoughts | - Dr. TS Girishkumar |
| 28. कुछ नया सोचें नई सरकारें | - जगमोहन सिंह राजपूत |
| 30. देश सर्वोपरि - बाबा साहेब | - बजरंग प्रसाद मजेजी |
| 32. हिन्दुत्व और सामाजिक समरसता | - डॉ. ओम प्रभात अग्रवाल |
| 35. Gandhi Can Never Die | |
| 36. शैक्षिक समाचार | |
| 39. गतिविधि | |

Need of Attainment of Minimum Levels of Learning

□ Dr. Prakash Chandra Agarwal

Concept of MLL is not new. The NPE 1986, revised in 1992 and POA 1992 emphasise that the minimum levels of learning should be laid down and children's learning should periodically be assessed to keep a track of their progress towards ensuring the achievement of NPE goal that all children should acquire at least MLLs. MLLs were developed class-wise and subject-wise for



16

primary stage in 1992 in the form of competencies to put into practice the NPE formulations. However later on it was realised that development of class-wise competencies made this exercise more product and rubric-oriented rather than facilitating overall development of children and improving the quality of learning.

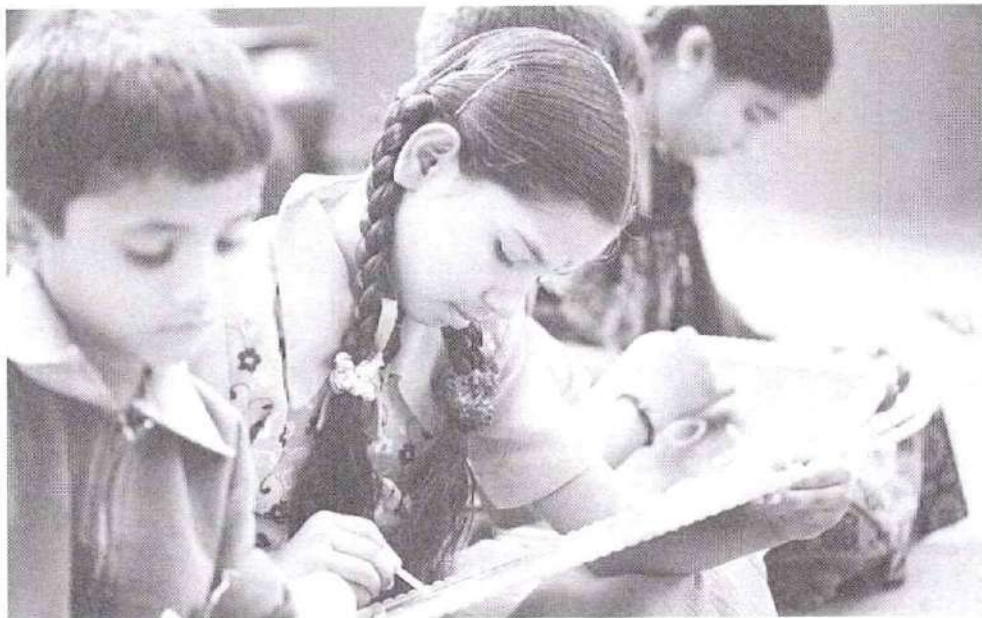
शैक्षिक मंथन (मासिक) 1 अप्रैल 2017

3

प्रमुख/ PRINCIPAL
क्षेत्रीय शिक्षा संस्थान
Regional Institute of Education
भुवनेश्वर / Bhubaneswar-751022



Concept of MLL is not new. The NPE 1986, revised in 1992 and POA 1992 emphasise that the minimum levels of learning should be laid down and children's learning should periodically be assessed to keep a track of their progress towards ensuring the achievement of NPE goal that all children should acquire at least MLLs. MLLs were developed class-wise and subject-wise for primary stage in 1992 in the form of competencies to put into practice the NPE formulations. However later on it was realised that development of class-wise competencies made this exercise more product and rubric-oriented rather than facilitating overall development of children and improving the quality of learning.



Need of Attainment of Minimum Levels of Learning

□ Dr. Prakash Chandra Agarwal

The development of any nation depends utmost on its educational scenario. In ancient times our country's educational scenario was so splendid that India was used to be known as 'Visva-Guru'. Later on aggression and intrusion of several groups of outsiders including Mughals and Britishers and taking over power as rulers not only ruined its wealth but also distorted and deformed its educational scenario to meet their requirements and leading the country intentionally in an educationally backward one. This resulted in a fast degradation of cultural and social values. Self esteem of citizens lowered down to a great extent. A large number of people became uneducated and illiterate. Vocational structure and skilful engagement of citizens also came down. In post independent era there have been consistent efforts on provid-

ing access of educational opportunities to all the citizens. Recently a lot of emphasis has been given on Education For All (EFA). Sincere efforts are going on for Universalization of Elementary Education (UEE) since a long back with its further extension to Universalization of Secondary Education (USE). A large amount of money is being spent in Sarva Shiksha Abhiyan (SSA) and Rashtriya Madhyamic Shiksha Abhiyan (RMSA) to achieve these goals. Inclusive school system or common school system along with enactment of RTE 2009 has further emphasized that none in age group of 6-14 years is left out from getting elementary education. In Rajasthan Child Tracking Scheme (CTS) was a sincere effort for this. In inclusive growth, it is intended that every child should be covered under the umbrella of access to the basic education irrespective of caste, locality, religion, socio-economic-status etc. Not only children of disadvantaged groups

शैक्षिक मंथन

(द्विभाषी मासिक)

शैक्षिक क्षेत्र की प्रतिनिधि पत्रिका

वर्ष : 9 अंक : 8 1 मार्च, 2017

(फाल्गुन-चैत्र, विक्रम संवत् 2073-74)

संरक्षक
मुकुन्द कुलकर्णी □ के.नरहरि

परामर्श
डॉ. विमल प्रसाद अग्रवाल
जगदीश प्रसाद सिंघल

सम्पादक
सन्तोष पाण्डेय

सह सम्पादक
विष्णुप्रसाद चतुर्वेदी □ भरत शर्मा

संपादक मंडल
प्रो. नन्दकिशोर पाण्डेय
डॉ. नाथू लाल सुमन
डॉ. एस.पी. सिंह
डॉ. ओमप्रकाश पारीक

प्रबन्ध सम्पादक
महेन्द्र कपूर

व्यवस्थापक
बजरंग प्रसाद मजेजी

प्रेषण प्रभारी
बसन्त जिन्दल □ नौरंग सहाय भारतीय
कार्यालय प्रभारी
आलोक चतुर्वेदी : 9782873467

प्रकाशकीय कार्यालय
82, पटेल कॉलोनी, सरदार पटेल मार्ग,
जयपुर (राज.) 302001
दूरभाष : 9414040403

दिल्ली ब्यूरो :
शैक्षिक महासंघ सदन, 606/13,
कृष्णा गली नं.9, मौजपुर, दिल्ली-110053
दूरभाष : 011-22914799

E-mail :
shaikshikmanthan@gmail.com
Visit us at :
www.shaikshikmanthan.com

एक प्रति 20/- वार्षिक शुल्क 200/-
आजीवन (दस वर्ष) 1500/-

पृष्ठ संयोजन : सागर कम्प्यूटर, जयपुर

शैक्षिक मंथन मासिक
में प्रकाशित सामग्री से संपादक मण्डल
का सहमत होना आवश्यक नहीं है।

शिक्षा का विकास यानि विकास की दीक्षा □ प्रो. मधुर मोहन रंगा

क्या कभी किसी ने विचार किया है कि देश में विभिन्न प्रकार के शैक्षिक स्तरों के कारण बालक के मनोविज्ञान पर क्या प्रभाव पड़ेगा? एक तरफ अधिक वित्त पोषण व सुविधाएँ व दूसरी तरफ वित्त का अभाव व न्यूनतम आधारभूत सुविधाओं की कमी। इस प्रकार दोहरे मापदण्ड क्या शिक्षा के विकास या विकास की शिक्षा के लिए उचित हैं? मनोवैज्ञानिक विश्लेषण यह बताता है कि सुविधायुक्त कार्यस्थल वातावरण के कारण अधिगम पर तो प्रभाव पड़ता ही है, परंतु कम सुविधायुक्त कार्यस्थल वातावरण के कारण बालक के मन में कुण्ठा का भाव पैदा होता है। इस कारण उनमें दीन-भावना का उदय करेगा। इससे Have व have not की विचारधारा का जन्म होगा। जो शैक्षिक उन्नयन व राष्ट्रीय प्रगति के लिए उचित नहीं है।



अनुक्रम

- | | |
|---|--------------------------|
| 4. शिक्षा का विकास व विकास की शिक्षा | - सन्तोष पाण्डेय |
| 9. सर्वजन सुखाय विकास | - विष्णुप्रसाद चतुर्वेदी |
| 11. शिक्षा का विकास और विकास के लिए शिक्षा | - प्रकाश चन्द्र अग्रवाल |
| 14. शिक्षा से उद्यमिता विकास | - डॉ. रेखा भट्ट |
| 16. राष्ट्रीय विकास के मूल्यांकन का आधार - शिक्षा | - बजरंग प्रसाद मजेजी |
| 18. उच्च शिक्षा : दशा और दिशा | - डॉ. बुद्धमति यादव |
| 24. Developing Education and Educating ... | - Prof. TS Girishkumar |
| 27. Education and Development Process | - Dr. A. K. Gupta |
| 29. शिक्षण का पैमाना | - जगमोहन सिंह राजपूत |
| 31. आर्यभट्ट : महान खगोलीय प्रतिभा | - प्रदीप |
| 34. जब तक खुद का ध्यान रहेगा | - सुरेन्द्र डी. सोनी |
| 36. Education in IITs in Today's | - Prof. C. V. R. Murty |
| 39. नवाचार | |
| 40. शैक्षिक समाचार | |
| 41. गतिविधि | |

India Needs World Class Nationalist Universities

□ Bhagwati Prakash Sharma

Another major lacuna in our education is that it is devoid of any focus on ingraining ethics and values in the conduct and behavior of the passing out graduates from the higher education. Patriotic and nation-

alistic fervor is also altogether absent in most of the educational endeavors. Several Universities have become breeding grounds for separatist ideologies of new global left, lacking a bold focus upon nationalistic inclination and engagement.



Bhagwati



विकास का मूलाधार शिक्षा है, सर्वांगीण विकास हेतु ऐसी शिक्षा की आवश्यकता है जिसके द्वारा शिक्षा पूर्ण कर नौकरी प्राप्त करने मात्र के एकांगी पक्ष को न देखा जाए वरन् व्यापक रूप से यह देखा जाये कि शिक्षा द्वारा समाज, राष्ट्र व विश्व का विकास किस प्रकार संभव है। बहुत से तथ्य हैं जिनको सब ज्ञानवान जानते हैं परन्तु आँख मूंदकर उनकी अनदेखी कर रहे हैं जिसके कारण विकास के नाम पर हम अपने संसाधनों को अन्धाधुन्ध नष्ट करते जा रहे हैं। धरती पर प्रदूषण बढ़ता जा रहा है, ओजोन परत के सुरक्षा कवच का क्षय देखने में आ रहा है। आज लापरवाही के चलते अनेक तरह की जानलेवा बीमारियाँ आम बीमारियाँ बन चुकी हैं।



शिक्षा का विकास और विकास के लिए शिक्षा

□ प्रकाश चन्द्र अग्रवाल

“न हि ज्ञानेन सदृशं पवित्रमिह विद्यते” गीता से ली गई इन पंक्तियों में ज्ञान को सर्वाधिक पवित्र माना गया है। भारतीय दृष्टिकोण में शिक्षा, विद्या व ज्ञान तीनों को समान अर्थ में लिया गया है तथा विद्या व ज्ञान को काफी महत्त्व प्रदान किया गया है। शिक्षा शब्द संस्कृत के शिक्ष धातु से बना है – ‘शिक्ष शिक्षणे’ जिसका अर्थ सीखना, अध्ययन करना, ज्ञानार्जन करना है।

ऋग्वेद के अनुसार शिक्षा वह है जो मनुष्य को आत्मविश्वासी व स्वार्थहीन बनाये। यजुर्वेद में कहा गया है ‘विद्ययाऽमृतमश्नुते’- विद्या से अमरत्व की प्राप्ति होती है। कठोपनिषद्/विष्णुपुराण में विद्या को बन्धन से मुक्ति की ओर ले जाने का साधन- ‘सा विद्या या विमुक्तये’ बताया गया है। अमरकोश में शिक्षा को छः वेदांगों में से एक माना गया है। वेदान्त दार्शनिक शंकराचार्य के मत में ‘शिक्षा स्वयं को जानना है।’ स्वामी विवेकानन्द के मतानुसार शिक्षा मनुष्य में निहित दैवीपूर्णता का प्रत्यक्षीकरण है।

अंग्रेजी भाषा में एजुकेशन शब्द की

उत्पत्ति दो शब्दों E+Duco से हुई है जिसका अर्थ है –आगे बढ़ाना, अन्दर से विकास करना अर्थात् शिक्षा का कार्य बालक की अन्तर्निहित शक्तियों या गुणों का बाहर की ओर सर्वांगीण विकास करना है।

बच्चा जन्म लेता है वह कोरे कागज के समान होता है। जैसे-जैसे शरीर में सुदृढ़ता आती है वह अपनी क्रियाओं द्वारा वातावरण में विद्यमान वस्तुओं को छूकर, महसूस कर, स्वाद लेकर वस्तुओं व वातावरण का ज्ञान प्राप्त करने लगता है। अनुभव द्वारा वह यह जान लेता है कि कुछ वस्तुओं से उसे दूर रहना है। उसमें अनेक आंतरिक प्रतिभाएँ छुपी होती हैं। शिक्षा का उद्देश्य बच्चे की इन्हीं अन्तर्निहित शक्तियों को बाहर निकालकर इनका विकास करना है। शिक्षा एक ऐसा वातावरण प्रदान करती है जो बच्चे के चिंतन व दृष्टिकोण को व्यवहार में परिवर्तन करने का काम करती है। परन्तु यहाँ शिक्षा का कार्य समाप्त नहीं हो जाता है बल्कि वह बच्चा उम्र भर कुछ न कुछ नया सीखता रहता है व अनुभवों में वृद्धि करता है। हालांकि बालक की बुद्धि का विकास कुछ समय अन्तराल पश्चात् पूरा हो जाता है परन्तु ज्ञान व अनुभव का

शैक्षिक मंथन

(द्विभाषी मासिक)

शैक्षिक क्षेत्र की प्रतिनिधि पत्रिका

वर्ष : 9 अंक : 7 1 फरवरी, 2017

(माघ-फाल्गुन, विक्रम संवत् 2073)

संरक्षक

मुकुन्द कुलकर्णी □ के.नरहरि

✦

परामर्श

डॉ. विमल प्रसाद अग्रवाल

जगदीश प्रसाद सिंघल

✦

सम्पादक

सन्तोष पाण्डेय

✦

सह सम्पादक

विष्णुप्रसाद चतुर्वेदी □ भरत शर्मा

✦

संपादक मंडल

प्रो. नन्दकिशोर पाण्डेय

डॉ. नाथू लाल सुमन

डॉ. एस.पी. सिंह

डॉ. ओमप्रकाश पारीक

✦

प्रबन्ध सम्पादक

महेन्द्र कपूर

✦

व्यवस्थापक

बजरंग प्रसाद मजेजी

प्रेषण प्रभारी

वसन्त जिन्दल □ वीरेंद्र सहाय भारतीय

कार्यालय प्रभारी

आलोक चतुर्वेदी : 9782873467

प्रकाशकीय कार्यालय

82, पटेल कॉलोनी, सरदार पटेल मार्ग,

जयपुर (राज.) 302001

दूरभाष : 9414040403

दिल्ली ब्यूरो :

शैक्षिक महासंघ सदन, 606/13,

कृष्णा गली नं.9, मौजपुर, दिल्ली-110053

दूरभाष : 011-22914799

E-mail :

shaikshikmanthan@gmail.com

Visit us at :

www.shaikshikmanthan.com

एक प्रति 20/- वार्षिक शुल्क 200/-

आजीवन (दस वर्ष) 1500/-

पृष्ठ संयोजन : सागर कम्प्यूटर, जयपुर

शैक्षिक मंथन मासिक

में प्रकाशित सामग्री से संपादक मण्डल

का सहमत होना आवश्यक नहीं है।

विमुद्रीकरण और शिक्षा □ प्रकाश चन्द्र अग्रवाल

विमुद्रीकरण हालांकि काला-धन रोकने के लिए एक उपयुक्त कदम है लेकिन उसके साथ-साथ युक्तिसंगत कर ढाँचा व लोगों के नैतिक चरित्र के साथ-साथ राजनैतिक चरित्र को भी स्वच्छ होने की आवश्यकता है। विमुद्रीकरण के साथ बात उठ रही है डिजिटलाइजेशन व कैश लैस इकोनोमी अर्थात् नकदी रहित अर्थव्यवस्था जिससे कालेधन पर नियन्त्रण स्थापित किया जाए तो अर्थव्यवस्था एक दिन में कैश लैस नहीं बन सकती, इसके लिए प्रयास चरणबद्ध रूप में करने होंगे। भारत की आम जनता साक्षर है परन्तु शिक्षित नहीं है। अंग्रेजी-हिन्दी में लेन-देन का ज्ञान, कम्प्यूटर का ज्ञान व लेन देन के इन नए तरीकों से भिन्न होकर इनमें अभ्यस्त होने के लिए अभी उनको अपने पैसे के उपयोग हेतु दूसरों पर निर्भर होना होगा।



अनुक्रम

- | | |
|---|---------------------------|
| 4. भ्रष्टाचार व शोषणमुक्त शिक्षा | - सन्तोष पाण्डेय |
| 6. विमुद्रीकरण का भविष्यगत निहितार्थ | - प्रो. मधुर मोहन रंगा |
| 12. प्रभावी हो आर्थिक प्रशासन | - विष्णुप्रसाद चतुर्वेदी |
| 14. विमुद्रीकरण : महँगी शिक्षा पर अंकुश | - डॉ. रेखा भट्ट |
| 16. विमुद्रीकरण के दूरगामी प्रभाव | - सन्तोष पाण्डेय |
| 22. भारतीय अर्थतंत्र की धुरी है परिवार | - डॉ. राजकुमार चतुर्वेदी |
| 24. साक्षरता सामाजिक विकास का आधार | - जयशंकर प्रसाद |
| 32. शोध क्षेत्र में नकली जर्नल | - प्रो. ओम प्रभात अग्रवाल |
| 34. अनर्थकारी विद्या का व्यवसाय | - उमेश प्रसाद सिंह |
| 36. रटना बनाम जानना | - अमित चमरिया |
| 38. Education in IITs | - Prof. C. V. R. Murty |
| 45. शैक्षिक समाचार | |
| 48. गतिविधि | |

Demonetisation : Some Thoughts

□ Prof. TS Girishkumar

Demonetisation was indeed a hard hit to all of these people, all their dreams, those, they had been nurturing systematically for years suddenly, turned fiasco. Those politicians who were making a living, that

too a luxurious living by being in politics were also badly hit, and after the initial shock, started doing the only thing they could, of making sound and fury. The stone pelting in Kashmir suddenly came to an end. Goondaism is now hardly heard of, in places like Kerala, where the communists used to employ hooligans to even kill opponents.



18



विमुद्रीकरण हालाँकि काला-धन रोकने के लिए एक उपयुक्त कदम है लेकिन उसके साथ-साथ युक्तिसंगत कर ढाँचा व लोगों के नैतिक चरित्र के साथ-साथ राजनैतिक चरित्र को भी स्वच्छ होने की आवश्यकता है। विमुद्रीकरण के साथ बात उठ रही है डिजिटलाइजेशन व कैश लैस इकोनोमी अर्थात् नकदी रहित अर्थव्यवस्था जिससे कालेधन पर नियन्त्रण स्थापित किया जाए। तो अर्थव्यवस्था एक दिन में कैश लैस नहीं बन सकती इसके लिए प्रयास चरण बद्ध रूप में करने होंगे, भारत की आम जनता साक्षर है, परन्तु शिक्षित नहीं है अंग्रेजी-हिन्दी में लेन-देन का ज्ञान, कम्प्यूटर का ज्ञान व लेन देन के इन नए तरीकों से भिन्न होकर इनमें अभ्यस्त होने के लिए अभी उनको अपने पैसे के उपयोग हेतु दूसरों पर निर्भर होना होगा। भारतवर्ष हर नागरिक स्मार्टफोन रख सके ऐसी परिस्थितियाँ भी पैदा करनी होंगी।



विमुद्रीकरण और शिक्षा

□ प्रकाश चन्द्र अग्रवाल

देश में 8 नवम्बर 2016 को पाँच सौ व एक हजार के तत्कालीन मुद्रित नोटों का चलन से बाहर करने का वर्तमान सरकार का साहसिक निर्णय, भ्रष्टाचार से अर्जित धन की समानान्तर अर्थव्यवस्था व पड़ोसी शत्रु राष्ट्रों द्वारा अवैधानिक रूप से अर्जित भारतीय मुद्रा को हमारे राष्ट्र की अखण्डता को चुनौती देने वाली अवांछित गतिविधियों सहित अन्य गलत उपयोगों पर करारी चोट के रूप में लिया जाना चाहिए। इसमें कोई सन्देह नहीं है कि इससे कालेधन के उन्मूलन एवं कालेधन के स्वामियों को उजागर करने या धरातल पर लाने का समग्र प्रयास हुआ है तथापि कालाधन कैसे पैदा होता है उसके विश्लेषण एवं कारणों के खोज की अनिवार्यता महसूस होती है। ऐसा न कर पाने की स्थिति में फिर कुछ समयान्तराल पर नई मुद्रा में पुनः कालाधन संग्रह कर इसके नए स्वामियों का प्रादुर्भाव हो सकता है। अतः चोर को सजा देने के बजाए उसके इस कार्य को करने

के पीछे के कारणों के निराकरण व उसकी दूषित सोच के परिष्करण का प्रयास किया जाना आवश्यक है और इस संदर्भ में महान् अर्थशास्त्री एवं सामरिक नीतिविज्ञ कौटिल्य की यह कथा प्रासंगिक है। एक बार वे किसी रास्ते से गुजर रहे थे तो उनकी धोती में शूल चुभ गए। उन्होंने शूलों को निकाला एवं अल्प समयान्तराल पर एक चरी में मट्ठा लाकर शूल के पौधों (झाड़ियों) पर उडेल दिया। लोगों द्वारा इसका कारण पूछे जाने पर उनका सारगर्भित जबाब, कि शूल को निकालने से समस्या का समाधान नहीं होगा, समस्या की व्युत्पत्ति को जड़ से मिटाना आवश्यक है, पथ प्रदर्शक है।

कालाधन एक समस्या है। इसका समाधान नोटों को चलन से बाहर कर देने (विमुद्रीकरण) मात्र से संभव नहीं होगा वरन् कारणों का विश्लेषण आवश्यक है। बड़े नोटों का चलन बन्द करना (विमुद्रीकरण) इसका एक उपाय माना गया है परन्तु मात्र यह उपाय पर्याप्त नहीं है। हमारे देश के कर ढाँचे का विश्लेषण करें तो पाएँगे कि नागरिकों पर अनावश्यक अधिक कर भार आरोपित किया

Identification of novel quantitative trait loci associated with brown planthopper resistance in the rice landrace Salkathi

Sangram Keshori Mohanty · Rudraksh Shovan Panda · Soubhagya Laxmi Mohapatra ·
Arundhati Nanda · Lambodar Behera · Mayabini Jena ·
Rabindra Kumar Sahu · Sarat Chandra Sahu · Trilochan Mohapatra

Received: 24 September 2015 / Accepted: 1 January 2017 / Published online: 7 January 2017
© Springer Science+Business Media Dordrecht 2017

Abstract The brown planthopper (BPH) is a potent pest of rice in Asia and Southeast Asia. Host resistance has been found to be the most suitable alternative to manage the insect. But varietal resistance has been found to be short-lived. There has been a constant search for alternate resistance genes. We developed an F_8 recombinant inbred population for the BPH resistance gene in Salkathi, an *indica* landrace from Odisha, India. Phenotyping of RILs against the BPH population at Cuttack, Odisha showed continuous skewed variation with four peaks at 2.1–3.0, 4.1–5.0, 6.1–7.0 and 8.1–9.0 SES score, suggesting the involvement of quantitative loci for resistance to BPH in Salkathi. Mapping showed the presence of two QTLs on the short arm of chromosome 4. One QTL, with phenotype variance of 37.02% is located between the markers RM551 and RM335. The other QTL, with phenotype variance of 7.1% is located between markers RM335 and RM5633. The two QTLs have been designated as *qBph4.3* and *qBph4.4*. *qBph4.3* seems to be a novel QTL associated with BPH

resistance. We have successfully transferred *qBph4.3* and *qBph4.4* into two elite rice cultivars, Pusa 44 and Samba Mahsuri. Fine mapping of the identified QTLs may lead to a successful transfer of QTLs into other elite germplasm backgrounds.


Keywords Brown planthopper · *Oryza sativa* · QTL · SSR · RIL

Introduction

Brown planthopper (*Nilaparvata lugens* Stal) is one of the most destructive insect pests in rice-growing areas of Asia and Southeast Asia. Both adults and nymphs of the insect feed on rice sheaths by sucking sap from phloem. All the growth stages of rice plant in the field are vulnerable to BPH. Mild infestations by the insects lead to yellowing of leaves, reduction in plant height, growth, vigor, number of productive tillers and grain filling. Heavy infestations cause complete drying and death of plants, a condition known as “hopperburn” (Sogawa 1982; Watanabe and Kitagawa 2000; Ali et al. 2012). BPH also transmits rice tungro, grassy stunt and rugged stunt virus (Ling et al. 1978; Khush 1979; Hibino 1989, 1996; Khush and Brar 1991; Rivera et al. 1996; Normile 2008). The habitat of the insect, rapid multiplication, high mobility and survival against selection forces has made this insect a threat to rice cultivars. BPH control by using of chemical pesticides is not efficient. It is environmentally hazardous coupled with the resurgence of the insect. Cultivation of resistant varieties is

S. K. Mohanty · R. S. Panda · S. L. Mohapatra ·
A. Nanda · L. Behera (✉) · M. Jena ·
R. K. Sahu · S. C. Sahu
Central Rice Research Institute, Cuttack, Odisha 753006,
India
e-mail: l_behera@yahoo.com;
lambodarjamujhadi@yahoo.com

T. Mohapatra
DARE, ICAR, New Delhi, India

 Springer




प्रधान/PRINCIPAL
क्षेत्रीय शिक्षा संस्थान
Regional Institute of Education
भुवनेश्वर / Bhubaneswar-751022



ISSN-2231-4660

सेवा चेतना

वर्ष-17 अंक-1

जनवरी-जून 2017



आर्थिक परिदृश्य विशेषांक

प्राचार्य/ PRINCIPAL
क्षेत्रीय शिक्षा संस्थान
Regional Institute of Education
भुवनेश्वर / Bhubaneswar-7



करते हुए



रख्यान



देते हुए



वैशेषांक



देते हुए

वैशेषांक

अनुक्रमणिका

क्र.सं.	विषय	लेखक	पृष्ठ क्र.
01.	सम्पादकीय	डॉ. विजय कुमार कर्ण	14
02.	वैश्विक आर्थिक परिदृश्य	पशुपति नाथ उपाध्याय	17
03.	8 नवम्बर की पृष्ठभूमि की अधिक व्यापक रूपरेखा	डॉ. विवेक देवराय	21
04.	विमुद्रीकरण : आवश्यकतायें, महत्त्व और प्रभाव	डॉ. विनय कुमार शर्मा	24
05.	आर्थिक शुचिता के लिए विमुद्रीकरण आवश्यक	गोविन्द सिंह धाकड़	27
06.	भारतीय आर्थिक परिदृश्य 2016-17	डॉ. महिमा माहेश्वरी	31
07.	विमुद्रीकरण-एक तात्त्विक विश्लेषण	डॉ. पी. आर. पंचमुखी	32
08.	Demonetisation : Some Thoughts	Prof. TS Girish kumar	38
09.	Demonetisation and Its Benefits : A Rerospectice Study	Dr. Mukulika Hitkari, Dr. Upajana	44
10.	Impact of Demonetisation in the Interest of Indian Economy	Prof. Arvind kumar	50
11.	Economic Development in India- A Present Scenario	Dr. Praveen Tripathi, Dr. Devyani Singh Chohan	55
12.	विमुद्रीकरण का भविष्यगत निहितार्थ	प्रो. मधुर मोहन रंगा	63
13.	विमुद्रीकरण के दूरगामी प्रभाव	सन्तोष पाण्डेय	67
14.	आर्थिक परिदृश्य में क्रान्ति का यह दौर और सशक्त राष्ट्र बनता भारत	डॉ. प्रणव पण्ड्या	70
15.	भारतीय रुपये के अवमूल्यन के कारणों का ऐतिहासिक विवेचन	डॉ. दिनेश कुमार शुक्ला	73
16.	विमुद्रीकरण और शिक्षा	प्रकाश चन्द्र अग्रवाल	80
17.	शिक्षा और आर्थिक प्रशासन	विष्णु प्रसाद चतुर्वेदी	83
18.	आर्थिक सशक्तिकरण की दिशा में नारी शक्ति	आकांक्षा यादव	85
19.	उदारीकरण का भारतीय संदर्भ	डॉ. मनीष पाण्डेय	89
20.	वैश्विक डिजिटल अर्थव्यवस्था की ओर भारत	डॉ. ऋतु कुमारी	92
21.	राष्ट्रीयकरण का विकल्प श्रमीकरण	कीर्ति प्रकाश रस्तोगी	95
22.	न्यास गतिविधियाँ		98

सेवा चेतना : "आर्थिक परिदृश्य" विशेषांक

13

भाचार्य/ PRINCIPAL
क्षेत्रीय शिक्षा संस्थान
Regional Institute of Education
भारत

विमुद्रीकरण और शिक्षा

□ प्रकाश चन्द्र अग्रवाल

देश में 8 नवम्बर 2016 को पाँच सौ व एक हजार के तत्कालीन मुद्रित नोटों का चलन से बाहर करने का वर्तमान सरकार का साहसिक निर्णय, भ्रष्टाचार से अर्जित धन की समानान्तर अर्थव्यवस्था व पड़ोसी शत्रु राष्ट्रों द्वारा अवैधानिक रूप से अर्जित भारतीय मुद्रा को हमारे राष्ट्र की अखण्डता को चुनौती देने वाली अवांछित गतिविधियों सहित अन्य गलत उपयोगों पर करारी चोट के रूप में लिया जाना चाहिए। इसमें कोई सन्देह नहीं है कि इससे कालेधन के उन्मूलन एवं कालेधन के स्वामियों को उजागर करने या धरातल पर लाने का समग्र प्रयास हुआ है तथापि कालाधन कैसे पैदा होता है उसके विश्लेषण एवं कारणों के खोज की अनिवार्यता महसूस होती है। ऐसा न कर पाने की स्थिति में फिर कुछ समयान्तराल पर नई मुद्रा में पुनः कालाधन संग्रह कर इसके नए स्वामियों का प्रादुर्भाव हो सकता है। अतः चोर को सजा देने के बजाए उसके इस कार्य को करने के पीछे के कारणों के निराकरण व उसकी दूषित सोच के परिष्करण का प्रयास किया जाना आवश्यक है। इस सन्दर्भ में महान् अर्थशास्त्री एवं सामरिक नीतिविज्ञ कौटिल्य की यह कथा प्रासंगिक है। एक बार वे किसी रास्ते से गुजर रहे थे तो उनकी धोती में शूल चुभ गए। उन्होंने शूलों को निकाला एवं अल्प समयान्तराल पर एक चरी में मढ़ा लाकर शूल के पौधों (झाड़ियों) पर उड़ेल दिया। लोगों द्वारा इसका कारण पूछे जाने पर उनका सारगर्भित जबाब, कि शूल को निकालने से समस्या का समाधान नहीं होगा, समस्या की व्युत्पत्ति को जड़ से मिटाना आवश्यक है, पथ प्रदर्शक है।

कालाधन एक समस्या है। इसका समाधान नोटों को चलन से बाहर कर देने (विमुद्रीकरण) मात्र से संभव नहीं होगा वरन् कारणों का विश्लेषण आवश्यक है। बड़े नोटों का चलन बन्द करना

(विमुद्रीकरण) इसका एक उपाय माना गया है परन्तु मात्र यह उपाय पर्याप्त नहीं है। हमारे देश के कर ढाँचे का विश्लेषण करें तो पाएँगे कि नागरिकों पर अनावश्यक अधिक कर भार आरोपित किया गया है। लोगों की न्यायपूर्ण गाढ़ी कमाई का अधिकांश हिस्सा करों के रूप में ले लिया जाता है। प्रत्यक्ष करों व अप्रत्यक्ष करों के रूप में आयकर दाताओं से उनकी कमाई का आधे से अधिक हिस्सा व आयकर अदाताओं की कमाई का करीब 30 से 40 प्रतिशत हिस्सा सरकारी कोष में चला जाता है। इस प्रकार उच्च करारोपण से बचने के लिए लोग करवंचना करने लगते हैं।

अर्थशास्त्री आर्थर लेफर ने लेफर वक्रों के जरिये कर आगम व कर की दरों में सम्बन्ध दर्शाने का प्रयास किया जिसमें यह दर्शाया गया कि कर की दरें कम करने से कर राजस्व में वृद्धि होती है। पिछले कई दशकों से यह प्रयास भारत में भी चल रहा है। करों की दरों में कमी लाई गई, परन्तु करों का दायरा बढ़ा दिया गया। लगभग प्रत्येक वस्तु जो जनता द्वारा उपयोग में लाई जाती है उस पर उत्पाद शुल्क, सेवा शुल्क, मूल्य वर्धित शुल्क, करों के रूप में कर आरोपित कर दिये गए हैं। जो अधोगामी (regressive) है एवं जो लोगों की कार्यकुशलता पर सीधे-सीधे प्रभाव डालते हैं, हालांकि पिछले कुछ दशकों में प्रत्यक्ष करों की दरों को कम करने के कारण प्रत्यक्ष करों का योगदान कुल कर आगम में बढ़ा है परन्तु करों से आय का मुख्य स्रोत अभी भी अप्रत्यक्ष कर ही बने हुए हैं।

सरकार द्वारा आयकर की विभिन्न श्रेणियों (slabs) में पिछले 3-4 वर्षों में कोई परिवर्तन नहीं किए गए तथा मुद्रास्फीति के बढ़ने व मौद्रिक आय के बढ़ने से अधिकांश मध्यमवर्गीय लोग करों के 20 से 30 प्रतिशत की श्रेणी में आ गए। फिर शिक्षा के नाम से लगने वाला 3 प्रतिशत उपकर (सेस) आम

शैक्षिक मंथन

(द्विभाषी मासिक)

शैक्षिक क्षेत्र की प्रतिनिधि पत्रिका

वर्ष : 10 अंक : 4 1 नवम्बर, 2017

(कार्तिक-मार्गशीर्ष, विक्रम संवत् 2074)

संस्थापक संरक्षक
स्व. मुकुन्द राव कुलकर्णी के.नरहरि

परागमर्श
डॉ. विमल प्रसाद अग्रवाल
जगदीश प्रसाद सिंघल

सम्पादक
सन्तोष पाण्डेय

सह सम्पादक
विष्णुप्रसाद चतुर्वेदी □ भरत शर्मा

संपादक मंडल
प्रो. नन्दकिशोर पाण्डेय
डॉ. नाथू लाल सुमन
डॉ. एस.पी. सिंह
डॉ. ओमप्रकाश पारीक

प्रबन्ध सम्पादक
महेन्द्र कपूर
व्यवस्थापक
बजरंग प्रसाद मजेजी

प्रेषण प्रभारी
बसन्त जिन्दल □ नौरंग सहाय भारतीय
कार्यालय प्रभारी
आलोक चतुर्वेदी : 9782873467

प्रकाशकीय कार्यालय
82, पटेल कॉलोनी, सरदार पटेल मार्ग,
जयपुर (राज.) 302001
दूरभाष : 9414040403

दिल्ली ब्यूरो :
शैक्षिक महासंघ सदन, 606/13,
कृष्णा गली नं.9, मौजपुर, दिल्ली-110053
दूरभाष : 011-22914799

E-mail :
shaikshikmanthan@gmail.com
Visit us at :
www.shaikshikmanthan.com

एक प्रति 20/- वार्षिक शुल्क 200/-
आजीवन (दस वर्ष) 1500/-

पृष्ठ संयोजन : सागर कम्प्यूटर, जयपुर

शैक्षिक मंथन मासिक में
प्रकाशित सामग्री से संपादक मण्डल का
सहमत होना आवश्यक नहीं है।

तनाव रहित शिक्षा प्रक्रिया □ डॉ. सुमन बाला

अधिगम को आनंददायी बनाना है तो विद्यालय वातावरण को तनाव मुक्त और भयमुक्त बनाकर बालकेन्द्रित अधिगम करवाना होगा। बालकेन्द्रित वातावरण द्वारा ही बालक के शारीरिक एवं मानसिक स्वास्थ्य को सही रखा जा सकता है और एक प्रसन्न व्यक्तित्व का निर्माण किया जा सकता। इसके लिए विद्यालय में अध्यापक बालक के आत्म को स्वीकार कर उसकी गरिमा, अभिव्यक्ति की स्वतन्त्रता और लोकतान्त्रिक मूल्यों में भागीदारी को विकसित कर सकते हैं। इस कड़ी में बालक की आवश्यकताओं, रुचियों एवं सामर्थ्य को सर्वोच्च प्राथमिकता देना आवश्यक है। बालक की स्वीकार्यता होगी तो बालकों की आपसी तुलना नहीं होगी और विद्यालय का वातावरण भी प्रतियुद्धी और तनावपूर्ण होने से बचाया जा सकेगा।



6

अनुक्रम

- | | |
|--|-----------------------------|
| 4. देश व समाज का भविष्य हैं बच्चे | - सन्तोष पाण्डेय |
| 9. 'साइबर धमकी' : बालमन पर खतरा | - प्रो. मधुर मोहन रंगा |
| 12. डिजिटल दुनिया में खोता बचपन | - डॉ. रेखा भट्ट |
| 17. बच्चों में कुपोषण व उनकी खाद्य सुरक्षा | - डॉ. प्रकाश चन्द्र अग्रवाल |
| 20. मुश्किल में है बच्चा | - डॉ. संजीव कुमार |
| 22. Creation of Agitated Minds | - Dr. TS Girishkumar |
| 25. Confused Children | - Prof. A. K. Gupta |
| 28. प्रारंभिक शिक्षा : एक दृष्टि | - डॉ. ओम प्रभात अग्रवाल |
| 30. महिला समानता का संघर्ष | - डॉ. ऋतु सारस्वत |
| 33. शिक्षा को समर्पित वैज्ञानिक प्रोफेसर यशपाल | - विष्णुप्रसाद चतुर्वेदी |
| 35. पुस्तक समीक्षा | |
| 36. गतिविधि | |

बाल केन्द्रित शिक्षा से चहकता बचपन

□ बजरंग प्रसाद मजेजी

जब तक बालक स्कूल के वातावरण के साथ पूर्ण रूप से नहीं जुड़ेंगे तब तक उनकी शिक्षा प्रभावपूर्ण नहीं हो सकेगी और वह शिक्षा बालकेन्द्रित शिक्षा नहीं कहलायेगी। शिक्षालय में बालक शिक्षक के सम्बन्ध मधुर व आत्मीय होने चाहिये। बालक कैसी भी शारीरिक एवं मानसिक परिस्थिति का हो, उसके साथ जितना सहज बनकर, उसके भीतर



15

उतरने की कोशिश की जायेगी तो वह अधिक से अधिक हृदयङ्गम करने में रुचि रखेगा। शिक्षण में बालकों की भागीदारी हो, कठिनाइयों, समस्याओं से जूझना सीखे, वही शिक्षा बालोपयोगी शिक्षा होगी। अति उत्साह और अपेक्षा के लिए दी गई शिक्षा भविष्य में बालक के लिए अनुपयोगी सिद्ध होती है।



यदि सरकार करोड़ों रुपये खर्च कर वास्तविक रूप से देश में लोगों को पौष्टिकता स्तर बढ़ाना चाहती है तथा नौनिहालों को हँसते व खिलते बढ़ते देखना चाहती है तो खाद्य सुरक्षा को मात्र औपचारिकता के रूप में प्रदान ना कर कठोर नियन्त्रण व समुचित देख-रेख में खाद्यान्न सामग्री का आवंटन व वितरण करे ताकि वास्तविक आवश्यकता वाले लोगों तक इसका लाभ पहुँच सके और देश के करोड़ों बच्चे कुपोषण व गंभीर बीमारियों से बच सकें। तभी सही मायनों में सक्षम व समर्थ युवा पीढ़ी का निर्माण हो सकेगा जो महान राष्ट्रीय सम्पदा के रूप में कार्य कर पाएगी।



बच्चों में कुपोषण व उनकी खाद्य सुरक्षा

□ डॉ. प्रकाश चन्द्र अग्रवाल

भारत एक विकासशील राष्ट्र है जिसमें प्रति व्यक्ति आय विकसित राष्ट्रों की तुलना में काफी कम है। विश्व की लगभग 1/6 जनसंख्या यहाँ निवास करती है जिसमें से 28 प्रतिशत बच्चे हैं जो 0-14 आयु वर्ग में शामिल होते हैं, इनमें 40 प्रतिशत बच्चे कम वजन व कुपोषण के शिकार हैं। नेशनल फैमिली हेल्थ सर्वे की रिपोर्ट यह दर्शाती है कि निर्धनतम परिवारों के प्रत्येक 10 बच्चों में से 6 बच्चे कुपोषण का शिकार हैं। विश्व स्वास्थ्य संगठन की एक रिपोर्ट के मुताबिक भारत में 5 वर्ष तक की आयु समूह के 44 बच्चे कम वजन या कम भार के हैं जबकि 72 प्रतिशत शिशु और 52 प्रतिशत विवाहित महिलाएँ एनीमिया से पीड़ित हैं। विभिन्न शोधों से यह स्पष्ट हुआ है कि गर्भाधान के दौरान यदि महिला कुपोषित या एनीमिक है तो भविष्य में पैदा हुए बच्चे में शारीरिक व मानसिक अपंगता एवं विभिन्न प्रकार के रोगों की संभावनाएँ सामान्य महिला के शिशु की तुलना में कई गुना बढ़ जाती है। दूसरी तरफ ग्लोबल हंगर इनडैक्स 2017 की रिपोर्ट प्रकाशित हुई जिसमें भारत 118 राष्ट्रों में 97 स्थान पर है जो भारत में

गंभीर भुखमरी की स्थिति को दर्शाता है।

दर्पण हमें अपना प्रतिबिम्ब दिखलाता है कि हमारा वास्तविक स्वरूप कैसा है। उसी प्रकार आज के बालक राष्ट्र के आने वाले भविष्य का दर्पण हैं जो भविष्य का प्रतिबिम्ब दिखलाते हैं कि देश कितना कार्यक्षम व कुशल होगा एवं आने वाले समय में किस दिशा की ओर अग्रसर होगा। जब अंकुर और कोपलें मुरझायी हुई होंगी, जब बीजों में घुण लगे होंगे तो हरे-भरे छायादार व फलदार वृक्षों की कल्पना मिथ्या साबित होंगी।

समय-समय पर प्रकाशित विभिन्न राष्ट्रीय व अन्तर्राष्ट्रीय रिपोर्ट्स वास्तविक स्थिति सामने रखने का प्रयास करती हैं। इन रिपोर्ट्स के अनुसार महिला शिशु की स्थिति और भी गंभीर है भारत में लिंगानुपात स्त्रियों के प्रतिकूल है भ्रूण हत्या आम तथ्य है अनपढ़ से पढ़े-लिखे लोगों में यह सामान्य सी घटना है। यहाँ तक की मध्यमवर्गीय परिवारों में बेटे व बेटा के खानपान में भी भेदभाव किया जाता है। इसका एक उदाहरण कुछ दिन पूर्व देखने को मिला। इन्हीं दिनों राजस्थान के एक गाँव में जाने का मौका मिला, स्कूली छात्राओं के साथ बातचीत करते हुए छात्राओं ने बतलाया कि उनकी माँ उनके भैया को रात में दूध में तारे दिखलाती है

शैक्षिक मंथन

(द्विभाषी मासिक)

शैक्षिक क्षेत्र की प्रतिनिधि पत्रिका

वर्ष : 10 अंक : 3 1 अक्टूबर, 2017

(आश्विन-कार्तिक, विक्रम संवत् 2074)

संस्थापक संरक्षक
स्व. मुकुन्द राव कुलकर्णी के.नरहरि

परामर्श
डॉ. विमल प्रसाद अग्रवाल
जगदीश प्रसाद सिंघल

सम्पादक
सन्तोष पाण्डेय

सह सम्पादक
विष्णुप्रसाद चतुर्वेदी □ भरत शर्मा

संपादक मंडल
प्रो. नन्दकिशोर पाण्डेय
डॉ. नाथू लाल सुमन
डॉ. एस.पी. सिंह
डॉ. ओमप्रकाश पारीक

प्रबन्ध सम्पादक
महेन्द्र कपूर

व्यवस्थापक
बजरंग प्रसाद मजेजी

प्रेषण प्रभारी
बसन्त जिन्दल □ नौरंग सहाय भारतीय
कार्यालय प्रभारी
आलोक चतुर्वेदी : 9782873467

प्रकाशकीय कार्यालय
82, पटेल कॉलोनी, सरदार पटेल मार्ग,
जयपुर (राज.) 302001
दूरभाष : 9414040403

दिल्ली ब्यूरो :
शैक्षिक महासंघ सदन, 606/13,
कृष्णा गली नं.9, मौजपुर, दिल्ली-110053
दूरभाष : 011-22914799

E-mail :
shaikshikmanthan@gmail.com
Visit us at :
www.shaikshikmanthan.com

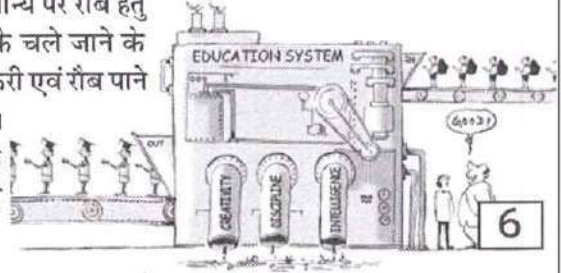
एक प्रति 20/- वार्षिक शुल्क 200/-
आजीवन (दस वर्ष) 1500/-

पृष्ठ संयोजन : सागर कम्प्यूटर, जयपुर

शैक्षिक मंथन मासिक में
प्रकाशित सामग्री से संपादक मण्डल का
सहमत होना आवश्यक नहीं है।

शिक्षा में भारतीयता □ डॉ. रेखा यादव

शिक्षा अपने साधारण और असाधारण दोनों अर्थों में समाजोपयोगी होने की आशा रखती है परन्तु अंग्रेजों के भारत में आने के बाद समाजोपयोगी का स्थान स्वयं की सुरक्षा एवं समृद्धि ने ले लिया। यह सही है कि अंग्रेजों को अपना कार्य निकलवाने के लिए पाश्चात्य शिक्षा का जानकारी वर्ग चाहिए था परन्तु इस जानकारी वर्ग द्वारा सरकारी नौकरियों को आजीविका और जनसामान्य पर रौब हेतु स्वीकारा गया और अंग्रेजों के चले जाने के बाद आज भी शिक्षा मात्र नौकरी एवं रौब पाने का ही जरिया मानी जा रही है। सामाजिक असन्तोष का एक बड़ा कारण वर्तमान शिक्षा भी है।



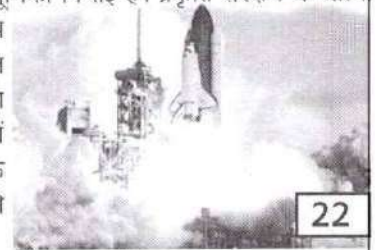
अनुक्रम

- | | |
|--|-----------------------------|
| 4. कैसी हो राष्ट्रीय शिक्षा व्यवस्था | - सन्तोष पाण्डेय |
| 9. राष्ट्रीय शिक्षा नीति : स्वरूप और संकल्पना | - डॉ. बुद्धमति यादव |
| 11. भारतीयता के अनुरूप शिक्षा | - डॉ. रेखा भट्ट |
| 13. राष्ट्रीय शिक्षा व्यवस्था का स्वरूप | - डॉ. प्रकाश चन्द्र अग्रवाल |
| 16. भारतीय शिक्षा व्यवस्था : चुनौतियाँ और समाधान | - डॉ. इन्दुबाला अग्रवाल |
| 19. Towards Bharatiya Education Tomorrow | - Dr. TS Girishkumar |
| 25. उच्च शिक्षा में वित्त व्यवस्था | - प्रो. मधुर मोहन रंगा |
| 28. शिक्षित भारत में हो अवसर की समानता | - डॉ. ऋतु सारस्वत |
| 30. भारतीय शिक्षा और राष्ट्रवाद | - डॉ. संजीव कुमार |
| 32. बालकों के अधिगम में अभिप्रेरणा की भूमिका | - डॉ. कृष्णा आचार्य |
| 35. चलन ने बदल दिए शब्द और अर्थ | - देवर्षि कलानाथ शास्त्री |
| 37. फाईबर ऑप्टिक्स अनुसंधानी नरेन्द्रसिंह कपानी | - विष्णुप्रसाद चतुर्वेदी |
| 39. विद्या ददाति विनयम् | |
| 41. गतिविधि | |

विज्ञान व स्वदेशाभिमान

□ विष्णुप्रसाद चतुर्वेदी

आत्मगौरव व संस्कृति व्यक्ति में जीने की ललक जगाती है। व्यक्ति को उत्साह से जीने का कारण देती है। भारत के राष्ट्रीय स्वतन्त्रता आन्दोलन का देश के विज्ञान अनुसंधान पर भी बहुत प्रभाव पड़ा था। स्वतन्त्रता आन्दोलन के समय भारत में विश्वस्तर के जितने वैज्ञानिक अनुसंधान हुए उतने स्वतन्त्रता के बाद देखने को नहीं मिले। राष्ट्रीय स्वतन्त्रता आन्दोलन का नेतृत्व बंगाल प्रान्त ने किया था। विज्ञान के क्षेत्र में भी बंगाल ने ही राह दिखाई थी। आधुनिक विज्ञान ने उसे रूढ़ि कहकर वनों को नाश करने में भूमिका निभाई है। प्रकृति संरक्षण में आत्मा सो परमात्मा, कण कण में भगवान जैसी भारतीय सोच को पर्यावरण-विज्ञान मान चुका है, मगर बहुत देर के बाद। दुःख की बात यह है कि भौतिकता का तथाकथित सुख पैसों वालों ने उठाया मगर बुरे परिणामों की मार निर्धन लोग झेल रहे हैं। भौतिक विकास के कारण हुए अतिमशीनीकरण ने आर्थिक विषमता को बहुत बढ़ा दिया है।



22

राष्ट्रीय शिक्षा व्यवस्था का स्वरूप

□ डॉ. प्रकाश चन्द्र अग्रवाल

को आसानी से उपलब्ध करा सकें।



इस शिक्षा व्यवस्था में हर स्तर पर दी जाने वाली शिक्षा के न्यूनतम स्तर के निर्धारण और सामाजिक व्यवस्था की समझ को विकसित करने के पर्याप्त इंतजाम की भी बात की गई है। शिक्षा देने और ग्रहण करने के दौरान भाषाई विविधता बाधा न बने, इसके लिए भी कुछ बिन्दुओं पर सक्रिय पहल करने पर जोर देते हुए कहा गया है कि, “संपर्क भाषा को बढ़ावा देने के अलावा पुस्तकों का एक से दूसरी भाषा में अनुवाद करने और बहुभाषी शब्दकोशों और शब्दावलियों के प्रकाशन के लिए भी कार्यक्रम चलाये जाएँगे। युवा वर्ग को अपनी सूझ-बूझ के अनुसार देश की महिमा और गरिमा पहचानने के लिए प्रोत्साहित किया जाएगा”।

मानव समाज सभ्यता के शुरुआती दौर से ही सीखने की इच्छा से संचालित रहा है। उसके इसी स्वभाव ने शिक्षा के विविध और विशिष्ट आयामों के सिर्फ विकास में ही नहीं बल्कि उसके सघन प्रसार में भी प्रेरणापरक भूमिका निभाई है और आज भी शिक्षा मानव समाज के स्वभाव की संरचना के आधार पर ही अपना ढाँचा गढ़ने की कोशिश कर रही है। चूंकि हर मानव समाज किसी न किसी राष्ट्र का अहम अंग होता है, इसलिये शिक्षा के ढाँचे का स्वरूप और स्वभाव राष्ट्रीय पहचान लिए रहता है। अगर ऐसा न हो तो शिक्षा के प्रति उस राष्ट्र के बुनियादी सरोकारों में सुधार की गुंजाइश हमेशा बनी रहेगी। आज हमारा देश आर्थिक और तकनीकी लिहाज से उस मुकाम पर पहुँच गया है जहाँ से हम अब तक के संचित संसाधनों का सार्थक उपयोग करते हुए समाज के प्रत्येक व्यक्ति को समावेशी लाभ पहुँचाने का प्रबल प्रयास करें। हम ऐसा करने में तभी सफल हो पायेंगे जब शिक्षा को देश के समग्र जन समाज

जब हम अपनी राष्ट्रीय शिक्षा व्यवस्था के विकास पर ध्यान देते हैं तो पाते हैं कि 1968 की राष्ट्रीय शिक्षा नीति स्वतंत्रता के बाद के इतिहास में उठाया गया पहला महत्वपूर्ण कदम था, जिसमें राष्ट्र की समावेशी प्रगति के साथ-साथ सामान्य नागरिकता और सामाजिक संस्कृति की भावना को मजबूती प्रदान करने की वकालत की गई है। उसमें शिक्षा प्रणाली के पुनर्निर्माण तथा प्रत्येक स्तर पर शिक्षा की गुणवत्ता को बेहतर बनाने पर बल दिया गया है। इसके अलावा इस शिक्षा नीति में विज्ञान और प्रौद्योगिकी, नैतिक मूल्यों को विकसित करने पर और शिक्षा व जीवन में सघन संबंध स्थापित करने पर भी जोर दिया गया है। इस शिक्षा नीति को अपनाने का परिणाम यह निकला कि हमारे देश में शिक्षा का राष्ट्रीय भावना के साथ व्यापक व सघन प्रचार-प्रसार हुआ। आज हमारे यहाँ लगभग हर गाँव में सरकारी प्राथमिक विद्यालय उपलब्ध हैं। हालाँकि यह भी उतना ही सच है कि जिस रूप में अवधारणा निर्मित की गई उसके अनुरूप इस शिक्षा नीति के अधिकांश



Principal

शैक्षिक मंथन (मासिक) 1 अक्टूबर 2017

13

PRINCIPAL
राष्ट्रीय शिक्षा संस्थान
Regional Institute of Education
भुवनेश्वर / Bhubaneswar-751022

शैक्षिक मंथन

(द्विभाषी मासिक)

शैक्षिक क्षेत्र की प्रतिनिधि पत्रिका

वर्ष : 9 अंक : 11 1 जून, 2017

(ज्येष्ठ-आषाढ़, विक्रम संवत् 2074)

संस्थापक
स्व. मुकुन्द राव कुलकर्णी

संरक्षक
के.नरहरि

परामर्श
डॉ. विमल प्रसाद अग्रवाल
जगदीश प्रसाद सिंघल

सम्पादक
सन्तोष पाण्डेय
सह सम्पादक
विष्णुप्रसाद चतुर्वेदी □ भरत शर्मा

संपादक मंडल
प्रो. नन्दकिशोर पाण्डेय
डॉ. नाथू लाल सुमन
डॉ. एस.पी. सिंह
डॉ. ओमप्रकाश पारीक

प्रबन्ध सम्पादक
महेन्द्र कपूर

व्यवस्थापक
बजरंग प्रसाद मजेजी

प्रेषण प्रभारी
बसन्त जिन्दल □ नौरंग सहाय भारतीय
कार्यालय प्रभारी
आलोक चतुर्वेदी : 9782873467

प्रकाशकीय कार्यालय
82, पटेल कॉलोनी, सरदार पटेल मार्ग,
जयपुर (राज.) 302001
दूरभाष : 9414040403

दिल्ली ब्यूरो :
शैक्षिक महासंघ सदन, 606/13,
कृष्णा गली नं.9, मौजपुर, दिल्ली-110053
दूरभाष : 011-22914799

E-mail :
shaikshikmanthan@gmail.com
Visit us at :
www.shaikshikmanthan.com

एक प्रति 20/- वार्षिक शुल्क 200/-
आजीवन (दस वर्ष) 1500/-

पृष्ठ संयोजन : सागर कम्प्यूटर, जयपुर

शैक्षिक मंथन मासिक में
प्रकाशित सामग्री से संपादक मण्डल का
सहमत होना आवश्यक नहीं है।

शाकाहार - स्वस्थ जीवन का आधार □ विष्णुप्रसाद चतुर्वेदी

अनुसंधान बताते हैं कि पोषण में परिवर्तन कर बिना दवा डायबीटीज, हृदय रोग को ठीक कर जीर्णता की गति को धीमा कर लम्बी उम्र तक स्वस्थ रहा जा सकता है। महिलाओं के स्तन कैंसर का कारण हारमोन की मात्रा के बदलाव के कारण होता है जो पोषण से संबंधित माना गया है। दुग्ध पदार्थों के अधिक उपयोग से प्रोस्टेट का कैंसर होने की संभावना बढ़ती है। फलों व सब्जियों में रंग के रूप में पाए जाने वाले एन्टीऑक्सीडेंट्स उम्र बढ़ने के साथ भी मस्तिष्क की क्षमता को बनाए रखते हैं। स्वस्थ भोजन की आदतों से पथरी नहीं होती। टाइप वन डायबीटीज का सम्बंध शिशु अवस्था में ठीक से पोषण नहीं होना पाया गया है।



6

अनुक्रम

- | | |
|--|--------------------------|
| 4. स्वस्थ जीवन-सुखी जीवन | - सन्तोष पाण्डेय |
| 8. व्यस्त रहें, मस्त रहें | - बजरंग प्रसाद मजेजी |
| 10. जीवन जीने की कला है : योग | - बजरंगी सिंह |
| 12. विद्यालयी शिक्षा में स्वास्थ्य एवं शारीरिक शिक्षा... | - प्रकाश चन्द्र अग्रवाल |
| 14. आरोग्य का मूल मंत्र- भारतीय चिकित्सा पद्धति | - डॉ. रेखा भट्ट |
| 16. स्वस्थ व्यक्ति - स्वस्थ समाज | - डॉ. इन्दु बाला अग्रवाल |
| 21. Healthy existence : Healthy minds | - Dr. TS Girishkumar |
| 24. इंजीनियरिंग की शिक्षा में क्रांति के संकेत | - डॉ. ओम प्रभात अग्रवाल |
| 26. शिक्षा में सुधार का एजेंडा | - जगमोहन सिंह राजपूत |
| 28. बालमन : सीखने की प्रक्रिया | - स्वतंत्र रिछारिया |
| 30. शिक्षा अधिकार की उलटी चाल | - अरविंद कुमार सिंह |
| 32. महिला शिक्षा में रोड़े | - ऋतु सारस्वत |
| 34. शिक्षा और सिमटती नौकरियाँ | - कौशलेन्द्र प्रपन्न |
| 36. साक्षात्कार | - प्रकाश जावडेकर |
| 39. The Economy at Three | - Arvind Panagariya |
| 41. ABRSM Demand Charter | |
| 44. शैक्षिक समाचार | |
| 45. गतिविधि | |

आनुवंशिकी रुपान्तरित बीज : खतरे का संकेत

□ प्रो. मधुर मोहन रंगा

पर्यावरणीय खतरों से संबंधित रिपोर्ट के अनुसार अमेरिका में आनुवंशिकी रुपान्तरित भोजन से 5 प्रतिशत बच्चों में व 2 प्रतिशत वयस्कों में 'एलर्जी' बढ़ी है। (Exposure to Environmental Hazard, 2003) उपरोक्त विवरण यह सामान्य जन के स्वास्थ्य के लिए भविष्य के खतरे को इंगित करता है। खाद्य पदार्थों में विषैले तत्वों की मात्रा भी बढ़ती है, जिससे परिवर्धित होते जीव-जंतुओं व मानव की जैविक क्रियाओं पर प्रभाव पड़ता है। रसायनिक खाद भूमि की उर्वरा शक्ति को समाप्त कर रही है, वातावरण को दूषित कर रहा है। अतः आवश्यकता इस बात की है कि शरीर को स्वस्थ रखने के लिए भारतीय वैज्ञानिक कृषक परम्परा के अनुसार कृषि की जावे, प्राकृतिक खाद व बीजों का प्रयोग करें।



18



शिक्षा का प्राथमिक उद्देश्य 'स्वस्थ' व्यक्तियों का निर्माण करना है, जो तन व मन से स्वस्थ बनकर अपनी ऊर्जा का उपयोग, बौद्धिक व भावनात्मक स्तर को उच्च बनाने में कर सकें। शारीरिक क्रियाएँ व व्यायाम मनुष्य के शरीर को नीरोगी रखने में सहायक हैं। प्राणायाम व योग के अन्य साधन व्यक्ति को मानसिक रूप से एकाग्र व मजबूत बनाते हैं। साथ ही व्यक्ति को कर्तव्यनिष्ठ व क्रियाशील भी बनाते हैं। इसी उद्देश्य को दृष्टिगत रखते हुए शारीरिक शिक्षा के साथ-साथ योग को भी पाठ्यचर्चा में उचित स्थान देने की अनुशंसा की गई है। उपरोक्त शारीरिक व मानसिक क्रियाओं से व्यक्ति के व्यक्तित्व का समग्र विकास होगा और वह सम्पूर्ण मानव समाज के लिए एक उपयोगी नागरिक बनेगा।

विद्यालयी शिक्षा में स्वास्थ्य एवं शारीरिक शिक्षा का समावेशन

□ प्रकाश चन्द्र अग्रवाल

मानव जीवन अमूल्य है और अत्यन्त उद्देश्यपूर्ण है। व्यक्ति अपने जीवनकाल में इन उद्देश्यों को पूरा करना चाहता है और इसके लिए सर्वाधिक महत्वपूर्ण है-अच्छा स्वास्थ्य। अस्वस्थ व्यक्ति का सारा ध्यान व्याधियों को दूर करने में लगा रहता है और उसके इन प्रयासों में उसकी ऊर्जा का एक बड़ा भाग इस अनुत्पादक कार्य में खप जाता है। बिना स्वस्थ शरीर के व्यक्ति सामाजिक, आर्थिक, सांस्कृतिक या राजनीतिक किसी भी क्षेत्र में आशानुरूप प्रगति नहीं कर सकता है। स्वस्थ व्यक्ति मानव समाज की धाती है। स्वास्थ्य के इसी महत्व के कारण कहा भी गया है-“पहला सुख नीरोगी काया”, अर्थात् सभी सांसारिक सुखों में स्वस्थ शरीर होना सर्वोपरि माना गया है।

सर्वप्रथम यह जानना जरूरी है कि स्वस्थ कहते किसे हैं। 'स्वस्थ' की सबसे अच्छी परिभाषा शायद सुश्रुत संहिता की है, जिसके अनुसार-

“समदोषः समग्निश्च समधातुमलक्रियाः।

प्रसन्नात्मेन्द्रियमनः स्वस्थ इति अभिधीयते।”

अर्थात् जिस व्यक्ति के तीनों वात, पित्त व कफ दोष, उपापचयी क्रिया, शरीर के उत्तक, उत्सर्जन तंत्र व जैव-रासायनिक क्रियाएँ साम्यावस्था में हों; शरीर, मन व आत्मा तीनों प्रसन्न हों, उसी को स्वस्थ कहा जाता है। “स्वस्थ” की लगभग यही परिभाषा विश्व स्वास्थ्य संगठन द्वारा मान्य है- “स्वस्थ एक सम्पूर्ण शारीरिक, मानसिक व सामाजिक सम्यक्पन की अवस्था है और बीमारी या दुर्बलता की अनुपस्थिति मात्र नहीं है।” उपरोक्त परिप्रेक्ष्य में 'स्वस्थ' की संकल्पना बहु-आयामी है। वास्तव में किसी व्यक्ति का व्यक्तित्व उसके आनुवंशिकीय कारकों व परिवेश से निर्धारित होता है। व्यक्ति एक सामाजिक प्राणी है, जो पर्यावरण के जैविक व अजैविक घटकों से निरन्तर अन्तःक्रिया करता है। आनुवंशिकीय कारक व्यक्ति के नियंत्रण में नहीं हैं, लेकिन परिवेश पर निर्भरता को वह काफी हद तक नियंत्रित कर सकता है। जन्म के तुरन्त बाद ही व्यक्ति का अधिगम शुरू हो जाता है, जो उसकी औपचारिक

शिक्षा से और निखरता है। “स्वास्थ्य एवं शारीरिक शिक्षा” इसी अधिगम का एक महत्वपूर्ण घटक है। राष्ट्रीय पाठ्यचर्चा की रूपरेखा 2005 में इसी तथ्य को ध्यान में रखते हुए, स्वास्थ्य और शारीरिक शिक्षा को पाठ्यचर्चा के सहशैक्षिक क्षेत्र में न मानकर शैक्षिक क्षेत्र में मानने की अनुशंसा की गई एवं इसे राष्ट्रीय चिन्ता में शुमार किया गया है। इस प्रपत्र में यह सुझाव दिया गया कि माध्यमिक स्तर पर इसको एक मुख्य विषय के रूप में माना जाये। अत्यन्त हर्ष का विषय है कि केन्द्रीय माध्यमिक शिक्षा बोर्ड ने शारीरिक और स्वास्थ्य शिक्षा को एक विषय के रूप में अंगीकार किया है। इसको सैद्धान्तिक रूप के साथ-साथ व्यावहारिक रूप में भी जब समग्रता से लागू किया जाएगा, तो इसके बहुत लाभदायक परिणाम होंगे। इससे न केवल स्वस्थ भारत के निर्माण में सहायता मिलेगी, अपितु मानव संसाधनों का समुचित उपयोग विकसित भारत के सपने को भी साकार कर सकेगा।

स्वास्थ्य और शारीरिक शिक्षा को पाठ्यचर्चा में शामिल कर हम विद्यार्थियों का समग्र विकास कर सकते हैं। कहते हैं कि स्वस्थ शरीर में ही स्वस्थ मन का निवास होता है। यह अनुभव सिद्ध बात है कि रुग्ण शरीर में आशा, उत्साह व कर्मठता कम ही होती है, जिससे मन भी प्रसन्न नहीं रह पाता है और कार्यकुशलता में बहुत कमी आती है। तन व मन दोनों एक दूसरे से प्रभावित भी होते हैं और एक दूसरे को प्रभावित भी करते हैं। तन व मन व्यक्ति के बौद्धिक व भावनात्मक स्तर को प्रभावित करते हैं। सुदृढ़ तन व मन, सुदृढ़ बौद्धिक व भावनात्मक अवस्था की आधारशिला है। वेदान्त दर्शन के अनुसार, आत्मानुभूति शिक्षा का लक्ष्य है। आत्मा के वास्तविक स्वरूप को जानने के लिए और आनन्द प्राप्ति के लिए तैत्तिरीय उपनिषद् के अनुसार पाँच कोशों को अनावृत्त करना होता है, जो निम्नानुसार हैं-

1. अन्नमय कोश
2. प्राणमय कोश
3. मनोमय कोश
4. विज्ञानमय कोश
5. आनन्दमय कोश

शैक्षिक मंथन

(द्विभाषी मासिक)

शैक्षिक क्षेत्र की प्रतिनिधि पत्रिका

वर्ष : 10 अंक : 10 1 मई, 2018

(ज्येष्ठ (प्र.), विक्रम संवत् 2075)

संस्थापक

स्व. मुकुन्द राव कुलकर्णी

✦

परामर्श

के. नरहरि

डॉ. विमल प्रसाद अग्रवाल

जगदीश प्रसाद सिंघल

✦

सम्पादक

सन्तोष पाण्डेय

✦

सह सम्पादक

विष्णुप्रसाद चतुर्वेदी □ भरत शर्मा

✦

संपादक मंडल

प्रो. नन्दकिशोर पाण्डेय

डॉ. एस.पी. सिंह

डॉ. ओमप्रकाश पारीक

डॉ. शिवशरण कौशिक

✦

प्रबन्ध सम्पादक

महेन्द्र कपूर

✦

व्यवस्थापक

बजरंग प्रसाद मजेजी

प्रेषण प्रभारी

बसन्त जिन्दल □ बौरंग सहाय भारतीय

कार्यालय प्रभारी

आलोक चतुर्वेदी : 9782873467

प्रकाशकीय कार्यालय

82, पटेल कॉलोनी, सरदार पटेल मार्ग,

जयपुर (राज.) 302001

दूरभाष : 9414040403

दिल्ली ब्यूरो :

शैक्षिक महासंघ सदन, 606/13,

कृष्णा गली नं.9, मौजपुर, दिल्ली-110053

दूरभाष : 011-22914799

E-mail :

shaikshikmanthan@gmail.com

Visit us at :

www.shaikshikmanthan.com

एक प्रति 20/- वार्षिक शुल्क 200/-

आजीवन (दस वर्ष) 1500/-

पृष्ठ संयोजन : सागर कम्प्यूटर, जयपुर

शैक्षिक मंथन मासिक में

प्रकाशित सामग्री से संपादक मण्डल का

सहमत होना आवश्यक नहीं है तथा

चित्रों का प्रतीकात्मक प्रयोग किया गया है।

प्राथमिक शिक्षा प्रासंगिकता के आईने से □ डॉ. ऋतु सारस्वत



8

8वीं तक बच्चों को फेल न करने की नीति पर विश्लेषण सार्वजनिक मंच पर करने की आवश्यकता है क्योंकि इसका संबंध प्रत्यक्ष तौर पर देश के भावी निर्माणकर्त्ताओं से जुड़ा हुआ है। 1986 की नई शिक्षा नीति में, प्राथमिक शिक्षा में बच्चों को फेल न करने की नीति के समावेश का कारण, स्कूल से बच्चों का असमय छोड़ देने की प्रवृत्ति पर नियंत्रण करना था। आठवीं तक फेल न करने की नीति पर पहली बार प्रश्न 2012 में केन्द्रीय शिक्षा सलाहकार समिति में उठा था, तब दिल्ली, उत्तरप्रदेश, राजस्थान, बिहार और हरियाणा जैसे राज्यों द्वारा इस नीति पर पुनर्विचार करने की माँग की गई।

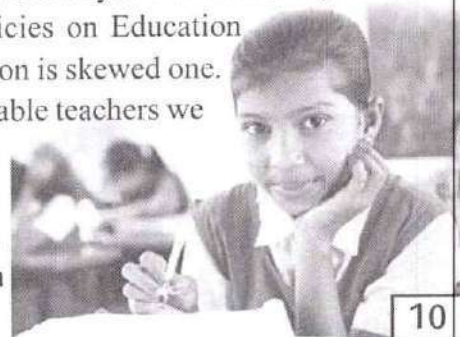
अनुक्रम

- | | |
|---|--------------------------|
| 4. शिक्षा की चुनौतियाँ | - सन्तोष पाण्डेय |
| 6. शिक्षण संस्थाओं की स्वायत्तता : एक विश्लेषण | - प्रो. मधुर मोहन रंगा |
| 12. Thinking for New Education Policy | - Dr. TS Girishkumar |
| 14. Understanding Value based Education | - Prof. Lipi Ghosh |
| 17. भारतीय शिक्षा की पुनर्स्थापना | - डॉ. राघव प्रकाश |
| 19. शिक्षा में सत्याग्रह | - नन्दकिशोर आचार्य |
| 21. साख के संकट से जूझती शिक्षा | - जगमोहन सिंह राजपूत |
| 23. कन्या भ्रूण हत्या; अस्तित्व पर प्रश्न चिह्न | - डॉ. अनीता मोदी |
| 26. महामहोपाध्याय डॉ.पाँडुरंग वामन काणे | - विष्णुप्रसाद चतुर्वेदी |
| 28. युवा आदर्श : स्वामी विवेकानन्द | - उमेश कुमार चौरसिया |
| 32. गुरु बंदन (कुटुम्ब प्रबोधन-द्वितीय अध्याय) | - हनुमान सिंह राठौड़ |
| 35. साक्षात्कार | - जगदीश प्रसाद सिंघल |
| 38. गतिविधि | |

Perception about Education in Emerging Indian Society

□ Prof. Prakash Chandra Agarwal

Quality education needs quality teachers. In our education system on first hand we have high shortage of teachers and hence not meeting at all the Pupil Teacher Ratio (PTR) as envisaged by different commissions like Mudaliyar commission, Kothari commission and National Policies on Education (1968 and 1986). The distribution is skewed one. On the other hand even in available teachers we rarely see quality teachers. Most of the teachers are without teaching attitude and aptitude. So the fate of school education can be visualized easily.



10



Quality education needs quality teachers. In our education system on first hand we have high shortage of teachers and hence not meeting at all the Pupil Teacher Ratio (PTR) as envisaged by different commissions like Mudaliyar commission, Kothari commission and National Policies on Education (1968 and 1986). The distribution is skewed one. On the other hand even in available teachers we rarely see quality teachers. Most of the teachers are without teaching attitude and aptitude. So the fate of school education can be visualized easily.



Perception about Education in Emerging Indian Society

□ Prof. Prakash Chandra Agarwal

Educational scenario of any country is considered to be the measure of its progress and development. Education is progressive and so is true for the society. In emerging Indian society, literacy is taken panacea of all evils. Language literacy, numeral literacy or numeracy, scientific literacy, computer literacy, digital literacy etc. are expanding horizons of literacy.

We wish an inclusive growth leading to growth of an inclusive emerging society. Education For All (EFA) or sab padhen, sab badhen; padhe chalo, badhe chalo, are popular slogans for mass awareness to get rid of illiteracy and backwardness. Various schemes were launched by Governments like District Primary Education Programme (DPEP), Sarva Shiksha Abhiyan (SSA), Rashtriya Madhyamic Shiksha Abhiyan (RMSA), Rashtriya Avishkar Abhiyan (RAA), Rashtriya Uchhatar Shiksha Abhiyan (RUSA) to make education accessible and in reach of all the sects of society including habitants of remote areas, tribal areas,

downtrodden groups, deprived and disadvantaged groups and differently-abled persons or divyangs. Now all existing schemes related to school education have been brought under one umbrella named as Integrated Scheme for School Education or Samagra Shiksha Abhiyan with a pious objective of providing education to one and all in the society. It is realized that though different schemes were for different stages of school education, however there was sometimes an overlapping in budget provisions and most of the times same Key Resource Persons or Master Trainers were empowered and prepared to cater and further advance the training and capacity building of teachers to bring the expected changes in actual field or classrooms. The quality cadre of Key Resource Persons could not be created to the expected level and a lack of seriousness in trainings and thereafter in implementation in field was realized all the time.

The main focus of our country has been consistently on access, enrolment, retention and achievement and even on quality. A significant improvement is observed in access and enrolment, less in retention, lesser in

शैक्षिक मंथन

(द्विभाषी मासिक)

शैक्षिक क्षेत्र की प्रतिनिधि पत्रिका

वर्ष : 10 अंक : 9 1 अप्रैल, 2018

(वैशाख, विक्रम संवत् 2075)

संस्थापक

स्व. मुकुन्द राव कुलकर्णी

❖

परामर्श

के.नरहरि

डॉ. विमल प्रसाद अग्रवाल

जगदीश प्रसाद सिंघल

❖

सम्पादक

सन्तोष पाण्डेय

❖

सह सम्पादक

विष्णुप्रसाद चतुर्वेदी □ भरत शर्मा

❖

संपादक मंडल

प्रो. नन्दकिशोर पाण्डेय

डॉ. एस.पी. सिंह

डॉ. ओमप्रकाश पारीक

डॉ. शिवशरण कौशिक

❖

प्रबन्ध सम्पादक

महेन्द्र कपूर

❖

व्यवस्थापक

बजरंग प्रसाद मजेजी

प्रेषण प्रभारी

बसन्त जिन्दल □ नौरंग सहाय भारतीय

कार्यालय प्रभारी

आलोक चतुर्वेदी : 9782873467

प्रकाशकीय कार्यालय

82, पटेल कॉलोनी, सरदार पटेल मार्ग,

जयपुर (राज.) 302001

दूरभाष : 9414040403

दिल्ली ब्यूरो :

शैक्षिक महासंघ सदन, 606/13,

कृष्णा गली नं.9, मौजपुर, दिल्ली-110053

दूरभाष : 011-22914799

E-mail :

shaikshikmanthan@gmail.com

Visit us at :

www.shaikshikmanthan.com

एक प्रति 20/- वार्षिक शुल्क 200/-
आजीवन (दस वर्ष) 1500/-

पृष्ठ संयोजन : सागर कम्प्यूटर, जयपुर

शैक्षिक मंथन मासिक में

प्रकाशित सामग्री से संपादक मण्डल का

सहमत होना आवश्यक नहीं है तथा

चित्रों का प्रतीकात्मक प्रयोग किया गया है।

नैतिक समृद्धि का आधार : विद्या □ प्रो. मधुर मोहन रंगा

शिक्षा आज एक आजीविका कमाने का माध्यम बन गई है। साथ ही शिक्षा आर्थिक समृद्धि का वाहक भी है, जबकि विद्या नैतिक समृद्धि का द्योतक है। अतः देश सकल घरेलू उत्पाद के आधार पर महान नहीं बनेगा, उसे महान राष्ट्रों की श्रेणियों में अग्रसर होने के लिए नैतिक समृद्धि आवश्यक है, जिसे शिक्षा द्वारा अर्जित कर सकते हैं। विश्वविद्यालयी उच्च डिग्री प्राप्त कर लाखों के पैकेज पर कार्य करने का विचार आज की पारिवारिक पृष्ठभूमि में जड़ें जमा चुका है। इसी कारण जीवन शैली में परिवर्तन आया है। सभी विद्वानों ने विद्या को समग्र विकास का माध्यम माना है। शिक्षा, विद्या के उद्देश्यों को प्राप्त करने का एक माध्यम है।



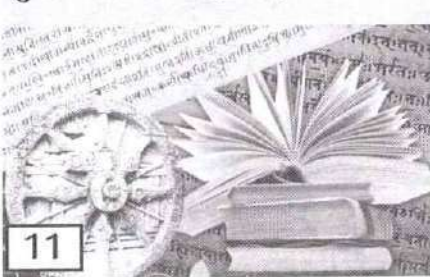
6

अनुक्रम

- | | |
|--|----------------------------|
| 4. शिक्षा को बदलें विद्या में | - सन्तोष पाण्डेय |
| 8. भारतीय संदर्भ और बाल विकास | - डॉ. सुमन बाला |
| 13. विद्या का स्थान कल व आज | - डॉ. इन्दुबाला अग्रवाल |
| 15. उपनिषदों में निहित है मानव निर्माण की शिक्षा | - बजरंग प्रसाद मजेजी |
| 17. Vidyay Amrutam Asnute | - Dr. TS Girishkumar |
| 19. उच्च शिक्षा में अनुशासन | - डॉ. रेखा यादव |
| 21. उच्च शिक्षा में अनुशासन की स्थापना | - डॉ. प्रकाश चंद्र अग्रवाल |
| 23. विज्ञान शिक्षा की दशा और दिशा | - डॉ. ओम प्रभात अग्रवाल |
| 25. शिक्षा : आशंकाओं का आकाश | - जगमोहन सिंह राजपूत |
| 27. यहाँ और अब में निहित है मेरी अमरता | - विलियम हरमन्स |
| 29. शिक्षा क्षेत्र में इंस्पेक्टर राज का अंत | - अभिनव प्रकाश |
| 31. जलवायु परिवर्तन : कृषि पर मंडराता खतरा | - डॉ. अनीता मोदी |
| 33. आस्था के राजा-रवि वर्मा | - विष्णुप्रसाद चतुर्वेदी |
| 35. अभिवादन (कुटुम्ब प्रबोधन-प्रथम अध्याय) | - हनुमान सिंह राठौड़ |
| 37. भगिनी निवेदिता के शिक्षा-विचार | - उमेश कुमार चौरसिया |
| 39. प्रस्ताव (प्रतिनिधि सभा) | |
| 40. गतिविधि | |

विद्या अमरता की साधिका □ डॉ. ओमप्रकाश पारीक

आज सम्पूर्ण सामाजिक पर्यावरण में शिक्षा पर प्रश्नचिह्न लग रहे हैं क्योंकि समाज में व्याप्त न्यूनताओं एवं अतिवादी प्रवृत्तियों का संपूर्णदोष शिक्षा पर ही आता है। निश्चित रूप से शिक्षा ही समाज को संस्कारित एवं परिष्कृत करती हुयी उन्नत बनाती है पर हमें उसके वास्तविक उद्देश्यों पर ध्यान देते हुये शिक्षा



11

व्यवस्था का निर्माण करना होगा। आज हम शिक्षा के द्वारा केवल भोग को ही साध्य बना रहे हैं, अधिक से अधिक सुख-सुविधाओं युक्त जीवन जीने हेतु प्रभूत धन की आवश्यकता है और वही हमारी शिक्षा प्रदान कर रही है।

उच्च शिक्षा में अनुशासन की स्थापना

□ डॉ. प्रकाश चंद्र अग्रवाल



अनुशासन स्वतः उत्पन्न होना चाहिए। पुरातन शिक्षा व्यवस्था विद्यार्थी जीवन में कठोर अनुशासन पर बल देकर विद्यार्थी के जीवन की राह सरल बनाने हेतु सुसंगत मार्ग प्रदान करती थी ताकि बालक अनुशासन की आग में तप कर और निखर सके। परन्तु कालान्तर में डंडा व दंड विधान के स्थान पर समझाइश व स्वतः अनुशासन पर जोर दिया जाता है। परन्तु कहते हैं अति सर्वत्र वर्ज्यते:। अनुशासन ज्यादा कठोर भी नहीं होना चाहिए व ज्यादा लचीला भी नहीं होना चाहिए अन्यथा निष्प्रभावी हो जायेगा।

वीणा के तारों को इतना मत कसो कि तार ही टूट जायें और इतना ढीला भी ना छोड़ो कि स्वर ही न निकलें।

यह पंक्तियाँ किसी बाद्य यंत्र हेतु ही उपयुक्त नहीं हैं वरन् जीवन के हरेक क्षेत्र में लागू होती हैं। अनुशासित जीवन से अनेक प्रकार की परेशानियों, तनावों व रोगों से बचा जा सकता है। शिक्षा का क्षेत्र भी इससे अछूता नहीं है। यदि विद्यार्थी अपने लक्ष्य को प्राप्त करना चाहते हैं तो अनुशासन की महती आवश्यकता है। शिक्षा विशेषतः उच्च शिक्षा के विद्यार्थियों में अनुशासनहीनता आम तथ्य हो गयी है, आपस में मारपीट करना, तोड़-फोड़, आगजनी, नारेबाजी व हड़ताल तथा बात का बतंगड़ बना देना आदि दृश्य विश्वविद्यालयों व महाविद्यालयों में आम नजारा हो गया है।

परन्तु हम इस नजारे को सामान्य या रोज की बात मानकर छोड़ नहीं सकते, उन कारणों का पता लगा कर कि किन कारणों से छात्रों में असंतोष है तथा कारणों का विश्लेषण विद्यार्थियों के स्तर पर कर उसका समाधान निकाला जाना आवश्यक है। तुच्छ व संकुचित प्रवृत्ति के राजनेता अपनी रोटियाँ सेंकने हेतु इन छात्रों का उपयोग अपने क्षुद्र हितों की पूर्ति हेतु इनको भड़काकर व आग में घी डालकर इसको और अधिक प्रज्वलित

करते हैं, जबकि विद्यार्थी हमारे आने वाले राष्ट्र की विरासत हैं। उनके आज के इन कदमों से सुरक्षित भविष्य की मंजिल तय होगी। यदि हम कारणों का विश्लेषण करें तो देखेंगे की चौदह वर्ष पूर्ण किये बालक सक्रिय श्रम शक्ति के अन्तर्गत शामिल होते हैं तथा उनकी मांसपेशियाँ व शरीर, मानसिक श्रम हेतु सक्षम हो जाते हैं। उनमें अनंत उर्जा व शक्ति होती है जिससे वे असंभव को संभव करने का हौसला रखते हैं। शिक्षाविद् जीन प्याजे के संज्ञानात्मक विकास सिद्धान्त में यह बताया गया है कि चौदह वर्ष की आयु पूरी करने के पश्चात् बालक में चिंतन, मनन, समस्या-समाधान जैसी उच्च मानसिक शक्तियों का विकास हो जाता है। ये भी आम तथ्य है कि चौदह वर्ष के पश्चात् बुद्धि का पूर्ण विकास हो जाता है इस उम्र के बाद तो मात्र उपलब्धि में वृद्धि होती है। यह सब ज्ञात होने के पश्चात् भी महाविद्यालयों में बड़ी उम्र के छात्र कागजी डिग्री की प्राप्ति हेतु अध्ययनरत हैं जिनका पढ़ाई-लिखाई व ज्ञान प्राप्ति से कोई सरोकार नहीं है। रोजगार प्राप्ति के अभाव व सफेद कॉलर की नौकरी की चाह में वे डिग्रियों की संख्या बढ़ाए जा रहे हैं।

हमारे शिक्षाविद् और राजनेता ये सब जानते-बूझते हुए भी डिग्री प्राप्ति हेतु शिक्षा के वर्षों की संख्या बढ़ाते जा रहे हैं ताकि बेरोजगारों की फौज को कुछ वर्षों के लिए टाला जा सके। पहले 10+1+3 तथा बी.एड., एम.एड. एक वर्ष



शैक्षिक मंथन

(द्विभाषी मासिक)

शैक्षिक क्षेत्र की प्रतिनिधि पत्रिका

वर्ष : 10 अंक : 12 1 जुलाई, 2018

(आषाढ़, विक्रम संवत् 2075)

संस्थापक

स्व. मुकुन्दराव कुलकर्णी

✦

परामर्श

के.नरहरि

डॉ. विमल प्रसाद अग्रवाल

जगदीश प्रसाद सिंघल

✦

सम्पादक

सन्तोष पाण्डेय

✦

सह सम्पादक

विष्णुप्रसाद चतुर्वेदी □ भरत शर्मा

✦

संपादक मंडल

प्रो. नन्दकिशोर पाण्डेय

डॉ. एस.पी. सिंह

डॉ. ओमप्रकाश पारीक

डॉ. शिवशरण कौशिक

✦

प्रबन्ध सम्पादक

महेन्द्र कपूर

✦

व्यवस्थापक

बजरंग प्रसाद मजेजी

प्रेषण प्रभारी

वसन्त जिन्दल □ नौरंग सहाय भारतीय

कार्यालय प्रभारी

आलोक चतुर्वेदी : 9782873467

प्रकाशकीय कार्यालय

82, पटेल कॉलोनी, सरदार पटेल मार्ग,

जयपुर (राज.) 302001

दूरभाष : 9414040403

दिल्ली व्यू :

शैक्षिक महासंघ सदन, 606/13,

कृष्णा गली नं.9, मौजपुर, दिल्ली-110053

दूरभाष : 011-22914799

E-mail :

shaikshikmanthan@gmail.com

Visit us at :

www.shaikshikmanthan.com

एक प्रति 20/- वार्षिक शुल्क 200/-

आजीवन (दस वर्ष) 1500/-

पृष्ठ संयोजन : सागर कम्प्यूटर, जयपुर

शैक्षिक मंथन मासिक में

प्रकाशित सामग्री से संपादक मण्डल का

सहमत होना आवश्यक नहीं है तथा

चित्रों का प्रतीकात्मक प्रयोग किया गया है।

जीवन निर्माण की शिक्षा और संस्कार □ शिवशरण कौशिक

जीवन को वैज्ञानिक दृष्टि से देखने का अभ्यास भी प्रमुख संस्कारों में से एक है। जीवन की जड़ता को तोड़कर पुरुषार्थ से, ऊर्जा से, सम्यक चेतना से जीवन को देखने, समझने और जीने की कला संस्कार ही तो है। तर्क तथा अध्यात्म के सम्मिलन से एक व्यावहारिक वैज्ञानिक दृष्टिकोण का विकास होता है जिससे हमारी तात्कालिक तथा भविष्य की समस्याओं का समाधान तो मिलता ही है साथ ही संपूर्ण जीवन सार्थक भी होता है।



15

अनुक्रम

4. संस्कार निर्मात्री हो शिक्षा
6. शिक्षा का अधिष्ठान : अध्यात्म
10. संस्कार आधारित शिक्षा : आज की आवश्यकता
12. संस्कार व शिक्षा
18. संस्कार निर्माण हो शिक्षा का ध्येय
20. संस्कार का अर्थ और आवश्यकता
22. संस्कृति परिष्करण शिक्षा से संभव
24. संस्कार सृजन का आधार : आर्ष महाकाव्य
28. गुण-कर्म पर आधारित है - वर्ण भेद
30. Concept and need of Sanskar
34. Is Education Really Imparting Cultural ...
44. धर्म व पन्थ निरपेक्षता
46. भारत, भारतीयता और शिक्षा
48. शिक्षा और भगिनी निवेदिता
50. सिविल सेवा परीक्षा में अंग्रेजी बनाम हिन्दी
52. समग्र शिक्षा नीति की ओर बढ़ते कदम
56. देश के विकास में पंचायतों की भूमिका
58. गुणात्मक शिक्षा हेतु कौशल विकास
60. उच्च शिक्षा में तदर्थवाद
62. स्कूल मत भेजना
64. श्रेय साधिका भारतीय गुरु परम्परा
67. प्राचीन भारतीय समाज में समरमता
71. आज्ञा पालन (कुटुम्ब प्रबोधन-चतुर्थ अध्याय)
74. शैक्षिक समाचार
75. गतिविधि

- सन्तोष पाण्डेय
- वासुदेव प्रजापति
- डॉ. बुद्धमति यादव
- डॉ. सुमन बाला
- विष्णुप्रसाद चतुर्वेदी
- डॉ. दिनेश शर्मा
- बजरंग प्रसाद मजेजी
- प्रो. मधुर मोहन रंगा
- मुरलीधर वैष्णव
- Dr. T.S. Girishkumar
- Prof. P.C. Agarwal
- डॉ. रुचि रमेश
- प्रो. मतीश कुमार
- उमेश कुमार चौगुनिया
- डॉ. विजय अग्रवाल
- डॉ. रेखा भट्ट
- डॉ. अनीता मोदी
- रामचन्द्र स्वामी
- आर. के. सिन्हा
- संदीप जोशी
- डॉ. ओमप्रकाश पारीक
- डॉ. भगवती प्रकाश शर्मा
- हनुमान सिंह राठौड़

Skewed Portrayal of Indigenous Knowledge System

□ Dr. Geeta Bhatt



36

Half of the present population born in post independent India in an average age bracket of 25-30 years has been impressed upon that education and modernization have been somehow associated with European travellers, missionaries and the British occupation of this country.

शैक्षिक मंथन (मासिक) 1 जुलाई 2018

3

Signature

प्राचार्य/ PRINCIPAL

क्षेत्रीय शिक्षा संस्थान

Regional Institute of Education

भुवनेश्वर / Bhubaneswar-751022



Children both at school and home should first learn moral values and good conduct to shape up their life. Other necessary life skills can be learnt later in life. Often we see people emphasize more on good jobs and good money. But teachers and parents should first give their children that stone of social values and skills for their holistic development. After that, gradually, children should be taught important life skills in sequence, because if a child's brain is filled with the sand of depression in the very beginning, then sadly, there will be no space left for other creative and dynamic skills.

Is Education Really Imparting Cultural Values?

□ Prof. Prakash Chandra Agarwal

In spite of being the most intelligent creature, human nature is just like an animal. Anger, greed, ego are the evils in humans by birth. A person's entire family and his social and educational institutions play a major role in inculcating social skills in them so that they conform to the rules and regulations of the society. Education helps an individual in shaping the way he thinks.

A lot of research is done in the field of education. This is done with a motive of keeping the students, people and society abreast with the best way of leading a good and happy life. It is done so that people would be able to live in harmony and make this Earth a more beautiful place to live in. In spite of all these, we face a lot of things in everyday life which make us think that we need to do a lot in this space. A simple example for that could be people throwing trash everywhere without caring about what harm it can do the environment and eventually to the people. And this is something which is not limited to school education. Some people argue that it is

because of the lack of infrastructure which leads to throwing of garbage at random places. But this is a clear example of the lack of good education provided to an individual. And these are becoming a part of culture for many people. They don't even think that whatever they are doing are not good for the society. They are doing these either subconsciously or because they are motivated by self interest.

There are many such examples which is clearly an outcome of lack of good education which leads to the evolvment of these atrocities that our society is facing. Every day we hear about shameful incidents taking place across the country which force us to think what kind of education we are extending to our young generation. Where have the teachings of the Vedas gone? Where are the values and ethics that we have acquired over the years? Do we still possess them or have they gone down the drain?

Let's get back to our school days and recollect the typical story of pieces of rock, sand and pebbles in a jar, but in a different perspective now. The story goes like this. A teacher took a jar of glass



शैक्षिक मंथन

(द्विभाषी मासिक)

शैक्षिक क्षेत्र की प्रतिनिधि पत्रिका

वर्ष : 11 अंक : 2 1 सितम्बर 2018

(भाद्रपद, विक्रम संवत् 2075)

संस्थापक

स्व. मुकुन्दराव कुलकर्णी

✦

परामर्श
के. बरहरि

डॉ. विमल प्रसाद अग्रवाल
जगदीश प्रसाद सिंघल

✦

सम्पादक
सन्तोष पाण्डेय

✦

सह सम्पादक
विष्णुप्रसाद चतुर्वेदी □ भरत शर्मा

✦

संपादक मंडल
प्रो. नन्दकिशोर पाण्डेय
डॉ. एस.पी. सिंह
डॉ. ओमप्रकाश पारीक
डॉ. शिवशरण कौशिक

✦

प्रबन्ध सम्पादक
महेन्द्र कपूर

✦

व्यवस्थापक
बजरंग प्रसाद मजेजी

प्रेषण प्रभारी
बसन्त जिन्दल □ नौरंग सहाय भारतीय
कार्यालय प्रभारी
आलोक चतुर्वेदी : 9782873467

प्रकाशकीय कार्यालय
82, पटेल कॉलोनी, सरदार पटेल मार्ग,
जयपुर (राज.) 302001
दूरभाष : 9414040403

दिल्ली ब्यूरो :

शैक्षिक महासंघ सदन, 606/13,
कृष्णा गली नं.9, मौजपुर, दिल्ली-110053
दूरभाष : 011-22914799

E-mail :

shaikshikmanthan@gmail.com
Visit us at :
www.shaikshikmanthan.com

एक प्रति 20/- वार्षिक शुल्क 200/-
आजीवन (दस वर्ष) 1500/-

पृष्ठ संयोजन : सागर कम्प्यूटर, जयपुर

शैक्षिक मंथन मासिक में
प्रकाशित सामग्री से संपादक मण्डल का
सहमत होना आवश्यक नहीं है तथा
चित्रों का प्रतीकात्मक प्रयोग किया गया है।

शिक्षा जगत के प्रकाश पुंज : डॉ. राधाकृष्णन □ डॉ. बुद्धमति यादव



भारतीय संस्कृति में समर्पित गुरु और समर्पित शिष्य की यह स्वस्थ परम्परा वैदिक काल से वर्तमान काल तक अजस्र धारा के रूप में प्रवाहित है। काल के विकास-क्रम से उसमें धीरे-धीरे अनेक विकृतियाँ आ गई हैं। शिक्षा का वास्तविक अर्थ, कोरे पुस्तकीय ज्ञान तक सीमित हो गया है, जिससे विद्यालय 'यंत्रालय' बन गये हैं, जहाँ मानव यंत्रों का निर्माण हो रहा है, मनुष्यों का निर्माण नहीं। इसलिए आज शिक्षकों की पूर्ववत् गरिमा को नकारा जाने लगा है। आज शिक्षा, शिक्षक और शिक्षार्थी की जो दिशा और दशा है उससे कैसे समाज निर्माण की कल्पना की जा सकती है ? आज समस्त अवधारणाएँ बदल गई हैं। शिक्षा का उद्देश्य ज्ञानार्जन से अधिक अर्थार्जन हो गया है।

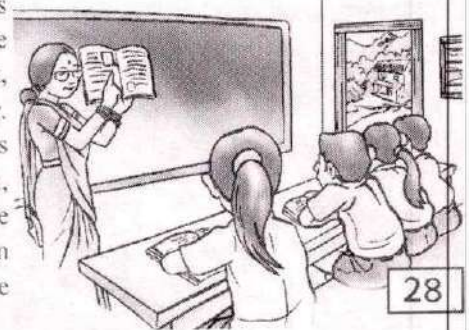
अनुक्रम

- | | |
|--|----------------------------|
| 4. शिक्षकत्व ही शिक्षक सम्मान | - सन्तोष पाण्डेय |
| 6. अटल राष्ट्र आराधक | - सुरेन्द्र चतुर्वेदी |
| 11. शिक्षक दिवस की सार्थकता | - डॉ. प्रकाश चंद्र अग्रवाल |
| 13. पुरस्कृत शिक्षकों से राष्ट्र की अपेक्षा | - बजरंग प्रसाद मजेजी |
| 15. शिक्षक और पेशेवर नैतिकता | - डॉ. रेखा यादव |
| 17. गुरु सम्मान के आचरणीय निहितार्थ | - डॉ. ओमप्रकाश पारीक |
| 19. डॉ. राधाकृष्णन का शैक्षिक दर्शन | - प्रो. मधुर मोहन रंगा |
| 21. वर्तमान शिक्षा-व्यवस्था और शिक्षक | - सुमनबाला |
| 24. शिक्षक, शिक्षण और सम्मान | - डॉ. ओम प्रभात अग्रवाल |
| 26. Dr. S. Radhakrishnan : At a Glance | - Dr. T. S. Girishkumar |
| 31. वर्तमान शिक्षा व्यवस्था का पुनर्मथन | - डॉ. ऋतु सारस्वत |
| 33. भाषाई संगम का सुनहरा सपना | - अनंत विजय |
| 35. उच्च शिक्षा के सामने यक्ष प्रश्न | - जगमोहन सिंह राजपूत |
| 37. गिरती गुणवत्ता के पीछे | - रमेश दवे |
| 39. उच्च शिक्षा में चुनौतियाँ | - प्रो. सतीश कुमार |
| 41. रोचक बने गणित की गुरुथी | - अभिषेक कुमार सिंह |
| 43. विद्या भारीरथ - सोनम वांगचुक | - विष्णुप्रसाद चतुर्वेदी |
| 45. अवतार कथा-2 (कुटुम्ब प्रबोधन-छठा अध्याय) | - हनुमान सिंह राठौड़ |
| 48. गतिविधि | |

Role of Teachers in Quality Education

□ Dr. Anita Modi

The quality of education depends on the very fact how successfully and efficiently the teachers perform their noble profession and how sincerely students do their studies. For quality education, it is essential that teachers need to be highly competent with commitment, devoted and dedicated to their duty. They create opportunities for students to learn, to know, to creatively think, to act and to grow. The teachers inspire students, instil human values in them and discipline their spirits to ensure the quality of higher education.



(Signature)

शिक्षक दिवस की सार्थकता

□ डॉ. प्रकाश चंद्र अग्रवाल

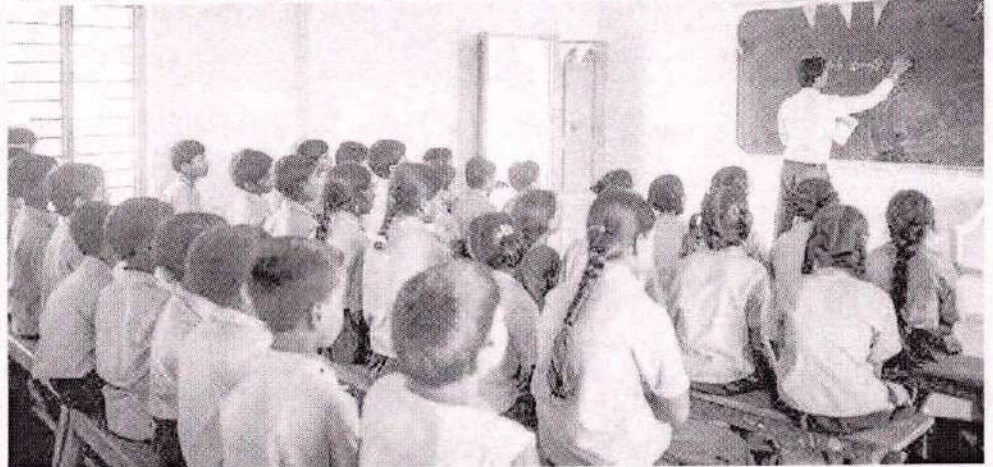


आवश्यकता शिक्षक दिवस द्वारा सम्मान- देने या ना देने की न होकर, ऐसे शिक्षक, जिनका लक्ष्य और जिनका जीवन वास्तविक रूप से शिक्षा व विद्यार्थी के लिए समर्पित है, समाज के सामने लाना है, इस विन्तीय आपा-धापी के युग में मूल्यों की पुनः स्थापना, शिक्षा को राजनीति व राजनीतिकरण से दूर कर कार्य के प्रति समर्पण भावना का उदय करना समाज की नैतिक जिम्मेदारी बन जाता है। मूल्यों की पुनः स्थापना ही शिक्षक व शिष्य दोनों के कर्तव्यबोध की भावना का उदय करेगी। सच्चे अर्थों में भौतिकतावाद से परे मानव सम्बन्धों की प्रगाढ़ता, आध्यात्मिकता की तरफ ले जाएगी तथा वही दिन शिक्षक दिवस मनाए जाने की सार्थकता को सिद्ध करेगा।

5 सितम्बर का दिन साल भर में आने वाला वह विशेष पर्व है, जो जिन्दगी को सार्थक रूप में जीना सिखाने वाले फरिश्तों के सज्जदे में सर झुकाने के लिए मनाया जाता है। यह दिन पूर्व राष्ट्रपति डॉ. सर्वपल्ली राधाकृष्ण के जन्म दिवस (5 सितम्बर) पर उनके आग्रह पर शिक्षकों को सम्मानित करने व आदर देने के लिए शिक्षक दिवस के रूप में प्रति वर्ष भारत में समारोह-पूर्वक मनाया जाता है (शिक्षक दिवस विश्व के विभिन्न देशों में 5 अक्टूबर को हर वर्ष मनाया जाता है)। गुरु-शिष्य परंपरा पुरातन समय से चली आ रही है। गुरु अपना सर्वस्व ज्ञान (संज्ञानात्मक, भावात्मक व मनोपेशीय) शिष्य को स्नेहपूर्वक प्रदान करता है और उसे संसार की सभी समस्याओं से जूझने व बाधाओं को दूर करने योग्य बनाते हुए उसके भविष्य को सँवारता है। गुरु का स्थान ईश्वर के रूप दिया गया है। गुरु, ईश्वर द्वारा बनाई गई मानव मूरत को तराश कर भव्य बना देता है, पौधे की साज सँवार के लिए माली की तरह काट-छाँट कर गुरु द्वारा बालक की गलतियों का परिमार्जन व निराकरण करना, कमियों का आकलन कर उनसे निपटने की कला से अवगत करवाकर पूर्णता प्रदान करना व चुनौतियों को सार्थक अवसर में रूपान्तरित करने की मनोदशा का निर्माण कर जीने के कौशल से परिपूर्ण करना

सिखाता है, जिससे बालक समाज में अच्छी तरह से समायोजित हो जाए।

लाखों विद्यार्थियों के भविष्य को गढ़ने तथा सहायता करने में अनगिनत शिक्षकों द्वारा दिये गये अप्रतिम योगदान का धन्यवाद और सम्मान करने के लिए ही शिक्षक दिवस मनाया जाता है परन्तु यह विचारणीय है कि क्या एक दिन शिक्षक दिवस मनाकर हम शिक्षकों को वास्तविक अर्थों में सम्मान दे पा रहे हैं? प्रकृतिवादी दार्शनिक बालक की शिक्षा व दीक्षा में प्रकृति को गुरु मानते रहे हैं। उनके अनुसार प्रकृति के अनुरूप व्यवहार ना करने पर स्वयं प्रकृति दण्डित करती है और यदि बालक प्रकृति के अनुरूप अपने-आप को समायोजित नहीं कर पाएगा तो वह इस संघर्षमयी जीवन में जीवित नहीं रह पाएगा। प्रकृतिवादियों द्वारा दिया गया योग्यतम की उत्तरजीविता (Survival of the Fittest) का नियम प्रकृति को गुरु का स्थान देता है। अन्य दार्शनिक विचारधाराओं में गुरु की प्रभावी भूमिका की व्याख्या संगत दर्शन के रूप में की है। आधुनिक समय में निर्मित बाद (Constructive Approach) शिक्षक का स्थान सुसंगत सुविधा/वातावरण प्रदायक (Facilitator) का मानती है। समाज के साथ रिश्ते के अन्तर्निर्वाह के साथ-साथ बच्चे को ज्ञान का निर्माण कर स्वयं कौशल की संप्राप्ति करनी है। शिक्षक का योगदान उनका मार्गदर्शन करना है एवं सुसंगत वातावरण व अधिगम संस्थितियाँ प्रदान करना है ताकि शिक्षार्थी स्वयं ज्ञान का निर्माण कर सके।



11 Solution of System of PDE Governed in Natural Convective Flow in a Rectangular Porous Cavity

P. Alam and S. Kapoor

CONTENTS

11.1 Introduction	187
11.2 Model Formulation	189
11.3 Governing Equations	190
11.4 Non-Dimensional Equations	191
11.5 Solution Procedure	192
11.6 Stream Function and Nusselt Number	195
11.7 Interpretation of Results	196
11.8 Conclusions	200
References	204

11.1 INTRODUCTION

The mathematical solution of systems by partial differential equations (PDE) is an interesting area used by many researchers. Training in advanced mathematical techniques is an essential requirement for young researchers and engineers. The idea of heat transport through permeable media has attracted extensive attention over a long period because of its wide range of uses in design science and the applied sciences, from toxin transport paper fabrication (Koponen et al. 1998), and geophysics and oil platform design (King et al. 1999), to marine life science the extraction of geothermal energy supplies, design of low-temperature protection gear, packed-bed synergist reactors, heat stockpiling beds, and atomic waste removal, etc. The vast majority of the work has been centered around isotropic and homogeneous permeable media. Understanding the dynamic movement of liquid

187

through a permeable medium as a result of common convection is well recorded in the survey work of Nield and Bejan (2006) and Ingham and Pop (1998). In the current chapter, we are dealing with free convection in a rectangular hole filled with a permeable medium, the four dividers of which have distinctive fractional warming or cooling characteristics.

A detailed review of the literature on the above-characterized second class of regular convection in this chapter shows that, under liquid conditions, a reasonable number of papers are available. For instance, an exploratory and mathematical investigation of free convective heat transfer in this cavity, described by a discrete warming at the lower divider and cooling from the vertical dividers, was analyzed. A mathematical examination of typical convection in air in a vertical square pit with limited isothermal warming from underneath but uniform cooling from the sidewalls was explored. A similar issue, using a steady-state heat source rather than the limited isothermal heat source at the base divider, was analyzed by Sharif and Mohammad (2005). They researched the impact of viewpoint proportion and the tendency of the hole toward heat transfer. Normal convection in a square walled-in area, warmed occasionally from part of the base divider, has been researched by Lakhal et al. (1995).

The impact of warmer and cooler areas on common convection in square holes has been investigated by Turgoklu and Yucel (1995). Normal convection in rectangular tanks warmed locally from below has been defined mathematically by Sarris et al. (2004), who found that, for low Rayleigh (Ra) numbers, the movement of heat is dominated by conduction, whereas, at higher Ra values, convection becomes dominant. The increment of the tank angle proportion and the width of the heated strip increases the liquid stream and raises the temperature of the liquid. This makes the glass-dissolve more homogeneous, improving the eventual outcome. Recently, normal convection in an air-filled 2D square walled-in area, warmed by a consistent source from beneath and cooled from above, was defined mathematically by Nader et al. (2007). They considered an assortment of heat-limited conditions at the top and sidewalls. Modeling was performed for two sizes of the heat source, i.e., a small and a very large source, representing 20% and 80% of the complete length of the base divider, respectively. Their outcomes were presented as smoothed-out and isothermal plots in terms of the variation in the Nusselt number and the most extreme temperature at the heat source surface. Additionally, they have revealed correlations among the various heating designs.

Various specialists have also completed exploratory and mathematical examinations to contemplate liquid stream function and heat transfer rate in discretely warmed permeable spaces. mathematically researched the impacts of stratification on heat convection in a flat pit loaded with a liquid-immersed permeable medium with a limited heat source at the base surface and directly changing temperature at the side dividers. Robillard (1988) considered numerous consistent states in a connected permeable medium with confined heating from underneath. Lai et al. (1990) and Lai and Kulacki (1991) mathematically examined free and blended convection in flat permeable layers with numerous, isothermal, discrete hotspots for different Rayleigh and Peclet numbers. Hsiao et al. (1994) investigated natural convection in

The computational modelling activity of plasma transport in the Scrape-off Layer (SOL) region of Indian tokamaks Aditya and SST-1 has explored a range of aspects of SOL plasma transport in both the devices. While 2-dimensional computations using SOLPS have predictively addressed aspects of the phase-I of divertor plasma operation of the tokamak SST-1, complete 3-dimensional EMC3-EIRENE computer simulations are applied to the 3D SOL plasma transport in tokamak Aditya operating for over last three decades. The Aditya studies are extended to predict operation scenario of its upgrade version and draw conclusions with respect to experience of SOL physics in its original setup. The phase-I divertor operation scenario of the tokamak SST-1 examined by SOLPS suit of codes recovers access to sheath- and conduction-limited divertor regimes where a transition could be achieved in the edge density scan, affected by the gas puff intensity, beyond $1.5 \times 10^{19} \text{ m}^{-3}$. A need exists to optimize the operating scenario with tolerable target heat-loads and low enough density for an effective LHCD operation. The analysis provided estimates of the relative power loading of the in and outboard targets for cases with and without control by a localized gas-puff.

I. INTRODUCTION

The modeling activity of SOL transport for India tokamak devices Aditya and SST1 both present at Institute for Plasma Research in India have been undertaken using a number of modeling and simulation tools and techniques. While SST1 cases being a divertor device are reasonably addressed by 2D simulation codes the original version of Aditya tokamak because of its toroidally localized limiter setup resented a very interesting 3D SOL geometry and required pure 3D simulation techniques for the SOL transport analysis. The present paper introduces both these approaches applied to these devices, respectively, discusses the main issues addressed while treating their SOL transport and summarizes major results and conclusions from these studies.

In Sec. II we introduce the device specifications of these tokamaks and discuss the properties of their SOL configurations. In Sec. III we describe the issues addressed using 2D and 3D treatments and describe the models applied to both devices' SOL configurations, respectively. The main results and characterizations done in these studies are discussed in Sec. ?? followed by the important conclusions from these studies summarized at the end.

II. DIVERTOR AND LIMITER SOL CONFIGURATIONS ADDRESSED

We first describe the rather conventional, toroidally symmetric, diverotr SOL configuration of SST1 tokamak, followed by a strongly toroidally asymmetric limiter SOL setup of tokamak Aditya in following subsections.

A. SST1 SOL configurations

The Steady State Superconducting Tokamak, SST-1 [1], is a size diverted plasma device with a double null

configuration and an elongated D shaped plasma. The device with major radius 1.1 m, minor radius 0.2 m, central toroidal field up to 3 T and a plasma current of over 250 kA, is designed with considerations to address physics and technological issues related to long pulse (up to 1000 s) steady state plasma operations. The device is designed have a diverted plasma in a magneto-hydrodynamic (MHD) plasma equilibrium with D shape, variable elongation, and finite triangularity. Therefore the Scrape-off Layer (SOL), a region of open field lines outside the magnetic separatrix with sufficient flux expansion close to the X-point, is desired to allow an effective control over the plasma-neutral interactions processes and the coupling of the recycling region to the core plasma. The main consideration in SOL simulations of the device is to characterize this coupling in order to estimate the sustainable operational parameter regimes. Although the 2D plasma modeling of the diervtor configuration has finite limitations in accurately predicting the plasma behavior as evident from various studies on validity of the 2D plasma modeling procedures [2, 3], we consider the code SOLPS5.1 as an ideal prediction tool for addressing intended issues given strong 2D symmetry of them. This situation is however strongly violated in the case of limiter configuration of Aditya and a 3D treatment becomes unavoidable.

B. Aditya SOL configurations

In Aditya, which has major radius 75 cm, minor radius 25 cm and a maximum toroidal magnetic field of ~ 0.72 T at the magnetic axis, the circular plasma is limited by a poloidal ring limiter localized at one toroidal location. This special limiter setup completely breaks the toroidal symmetry such that representing this limiter on a single 2D cross-section results in the model that would require full toroidal and poloidal range to be covered by the limiter, transformin it into a rather tightly placed

Bibhu Prasad Sahoo

Principal
Regional Institute of Education
भुवनेश्वर / Bhubaneswar-751012

OPTICAL BAND GAP AND PHOTOLUMINESCENCE STUDIES OF SAMARIUM-DOPED BARIUM ZIRCONATE PEROVSKITE PREPARED BY SOLID STATE REACTION ROUTE

A. Satapathy and E. Sinha*

UDC 535.37

The structural and optical properties of $\text{Ba}_{1-x}\text{Sm}_{2x/3}\text{ZrO}_3$ ($x = 0.02, 0.04, 0.06, 0.08, 0.10$) ceramics prepared by the solid-state reaction method are considered. The x-ray diffraction data confirm the cubic perovskite phase of all the compositions with space group $\text{Pm } \bar{3}\text{m}$. The effect of Sm^{3+} substitution on the optical band gap and photoluminescence properties of barium zirconate are discussed. The optical band gap decreases from 3.43 to 2.98 eV with increasing Sm^{3+} content. The Urbach energy has been found to increase with rise in concentration of dopant species. The photoluminescence spectra show an intense violet-blue emission characteristic of the barium zirconate perovskite. Visible emission due to intra-4f transitions of Sm^{3+} ions from $^4\text{G}_{5/2}$ higher excited state to $^6\text{H}_j$ ($j = 5/2, 7/2, 9/2$ etc.) ground states has been observed in the range of 550–700 nm.

Keywords: ceramics, perovskites, optical band gap, photoluminescence.

Introduction. The rare earth (RE) activated phosphors have been gaining significant technological interest in the last couple of decades for their excellent luminescence behavior. The photoluminescence properties of these materials can be tuned up for desirable display applications in various photonic devices [1, 2]. For luminescence applications in the visible and ultraviolet (UV) spectral range, materials with a wide optical band gap are suitable candidates to act as the host matrix for optical activation with rare earth (RE) impurities. Perovskite-type materials show a broad luminescence band, which is usually associated with the presence of imperfections or defects in the crystal structure that leads to intermediate states within the band gap. BaZrO_3 (BZO) is one of the perovskite structured oxides ($\text{A}^{2+}\text{B}^{4+}\text{O}_3$) that has a broad range of electrochemical, optoelectronic, and refractory applications and possesses a wide optical band gap ranging from 3–5 eV, an eligible host matrix for optical activation with RE impurities [3, 4]. The multifunctional features of BZO attract attention for exploitation of different physical properties. There are several reports on the trivalent rare earth impurities doped on BZO hosts which emit within the optical window of the host material under UV excitation. In particular, most of the studies have been based on the exploitation of the B site or Zr site of BZO substituted with lanthanides like (Yb^{3+} , Ce^{3+} , Eu^{3+} , etc.) [5, 6]. Since these ions act as acceptors when substituted at Zr^{4+} site, it results in the creation of oxygen vacancies, thereby affecting the ZrO_6 octahedra, which alter the structural and electronic environment. Substitution at both the A and B sites can lead to changes in structural symmetry and charge distribution, and thus it creates various defects via oxygen or cationic vacancies that influence the band structures. The structural order-disorder and intermediate energy levels created within the valence band maximum and conduction band minimum govern the optical band gap and photoluminescence properties. However, there are no reports on the Sm^{3+} substitution at either the A^{2+} site or B^{4+} site of the BZO crystal lattice. Therefore, in the present study, we report the basic optical properties of Sm^{3+} ions incorporated in the A site of BZO lattice.

Experimental Procedure. Powders used in the synthesis of $\text{Ba}_{1-x}\text{Sm}_{2x/3}\text{ZrO}_3$ ($x = 0.02, 0.04, 0.06, 0.08, 0.10$) were BaCO_3 (99% purity, Merck, India Ltd.), ZrO_2 (99% purity, Himedia Laboratories, Mumbai), and Sm_2O_3 (99% purity, Himedia Laboratories, Mumbai). Appropriate stoichiometric proportions were weighed for preparation of the respective compositions. In this case, we have selected the concentration of dopant as $2x/3$ to maintain the charge neutrality. The initial mixtures were ground for 6 h with the help of an agate-mortar and pestle. Then the samples were subjected to calcination at 1450°C for 4 h in an electric resistance furnace. The calcined powders were ball milled for 2 h in a liquid medium for

*To whom correspondence should be addressed.

Birla Institute of Technology, Mesra, Ranchi, 835215, India; email: elsinha@gmail.com. Published in Zhurnal Prikladnoi Spektroskopii, Vol. 84, No. 6, pp. 864–869, November–December, 2017. Original article submitted September 13, 2016.

Avishek Satapathy

Principal
Regional Institute of Education
Bhubaneswar-751022

created within the valence band maximum and conduction band minimum govern the optical band gap and photoluminescence properties. However, no reports are made on the Sm^{3+} substitution on either A^{2+} site or B^{4+} site of BZO crystal lattice. Therefore, in the present study we report the basic optical properties of $\text{Ba}_{1-x}\text{Sm}_{2x/3}\text{ZrO}_3$ ($x=0.02, 0.04, 0.06, 0.08, 0.10$), i.e. Sm^{3+} ions incorporation in the A site of BZO lattice. The details of experimental procedure involved in characterization of these materials can be referred from Satapathy *et al.* [151]. The UV-Visible diffuse reflectance spectra of single phase compositions were obtained using UV-vis spectrometer (Lambda 35 Perkin Elmer) and the photoluminescence properties were measured using a fluorescence-luminescence spectrophotometer (LS 55, Perkin Elmer) [151].

Results and discussion

UV-Visible spectroscopy

The optical band gap (E_g) for all the samples are calculated by using modified Kubelka – Munk equation [152], that relates optical band gap and absolute reflectance of the sample. Figure A.1 (a-f) shows the plots of $[F(R)hv]^{1/2}$ against hv for different composition of Sm doped BZO ceramics, where $F(R)$ is the Kubelka – Munk function or absolute reflectance of the sample. Extrapolating the linear portion of the plots, the E_g values of all the samples are determined. The UV-vis spectra clearly depict a significant decrease in optical band gap from 3.35 eV for $x=0.0$ to 2.86 eV for $x = 0.10$ composition. The optical band gap of any material is influenced by a lot of factors such as the average particle size distribution, lattice parameter, order of crystallinity, degree of structural order-disorder and the type of substitution (donor/acceptor) and/or carrier concentration. Here the decrease in optical band gap is due to the defects/vacancies generated in the lattice as per the defect chemistry reaction given in Eq. (13). Since cationic/barium vacancies results in unoccupied states near the top of the valence band, they behave as shallow acceptors in the materials. This is the reason of effective narrowing down of optical band gap with Sm^{3+} ion substitution. Band gap arrangement in perovskites has also been related to the degree of structural disorderness that occurs due to breaking of bonds (Zr-O), (Ba-O) and forming $[\text{BaO}_{12}\text{-BaO}_{11}]$, $[\text{ZrO}_6\text{-ZrO}_5]$ complex clusters [147, 152-155].

CHAPTER – 7

Blended Pedagogy in Teaching Learning Process of Twenty First Century Classrooms

Mr. Amlesh Kumar

Dr. Laxmidhar Behera

Introduction

The evolution of learning processes in education depends on incorporating new instructional strategies to improve pedagogy and increased flexibility. Several studies have been conducted to explore learning strategies that exploit the potential of online instruction, while retaining the advantages of face-to-face instruction from which the concept of blended pedagogy has emerged. Current generation is a media-saturated world of television, personal computers, mobile devices, radio, films, magazines, newspapers, textbooks, e-books, e-readers, Internet, and the World Wide Web that can enhance the quality and effectiveness of education. The Internet with shared global resources has brought a more flexible and dynamic learning environment beyond the traditional book-teacher model which regarded classrooms as the only dominant environment for formal education (Felvegi & Matthew, 2012). The use of blended pedagogy is usually attributed to the ability to support mixing traditional approaches and technology enhanced teaching and learning approaches that allow learners to learn at their own pace and time.

When using the blended pedagogy approach, technology offers teachers the opportunity to bring resources into the classroom, including human resources. Modern communication tools including Skype, webinars, email, video conferences, virtual worlds, and discussion boards allow the gathering of information and the sharing of ideas to occur like never before, and expand the learning community to include professionals in business, industry, and academia. Through the use of these tools, the teacher opens students to the greater world and the classroom is no longer isolated within its four walls. Students can participate in interactions with teachers and students in a different school or even another state and country. The teacher can bring these experiences to the students, aiding the development of student-driven experiences. Teachers should understand how to connect technology and pedagogy with the content of the curriculum (Harvey-

ISSN 0970-7247

THIRD CONCEPT

English Monthly

Annual Subscription Rs. 200

Vol. 31

No. 366

AUGUST 2017

Rs. 20.00

- ❖ Indian Diaspora in West Asia
- ❖ Reconciliation Struggle in the Balkans
- ❖ APTA Countries
- ❖ Agri-Business In India
- ❖ GST-Way Ahead
- ❖ GST & Indian Economy

Bretard
Agar

प्राचार्य/ PRINCIPAL
क्षेत्रीय शिक्षा संस्थान
Regional Institute of Education
भुवनेश्वर/ Bhubaneswar-751 022

Impact of Political Socialization on Democracy

Dr. Kalinga Ketaki*

[Political socialization throws light upon how people cultivate their political beliefs and how they pass on their values to others from one generation to the next. Political socialization is closely related to the political culture of a society. To develop a political culture in a political system, political socialization is essential. The aspects of political culture such as attitudes, values are developed through the process of political socialization.]

Political socialization can be described as a process of getting the individuals familiar with the political system. That establishes their idea of politics and their relations to political phenomena. The economic and cultural environment determines political socialization of a society where the individuals reside and interact with each other. Political socialization acquired importance only in the late 1950s. It was written by Herbert Hyman, who coined the term Political socialization in 1959 that led to a systematic study of the concept which hitherto was fragmentary.

Definition

Political socialization has been defined by various scholars in different ways. Among them are political scientists, anthropologists, social psychologists and sociologists. Some of the important definitions of political socialization are listed as follows.

David F. Aberle, in his paper on culture and socialization, defined political socialization as those patterns of social action, or aspects of action, which inculcate in individuals the skill, motives, and attitudes necessary for the performance of present or anticipate roles throughout normal human life, in so far as new roles must be learnt.

S.N. Eisenstaedt, in his book from generation to generation has defined political socialization as a communication with and learning from other

human beings with whom gradually enters into some sort of generalized relationship. Frederic Greenstein¹ has defined political socialization both from a narrow and broad perspective. In a narrow sense, political socialization is the deliberate inculcation of political information, values and practices by Institutional agents who have been formally given the responsibility. In a broader sense, political socialization includes all sorts of political learning, formal and informal, deliberate and unplanned-at every stage of the life.

This includes not only explicitly political learning but also nominally the non-political learning that affects the political behavior; it includes the learning of politically relevant attitudes and the politically relevant personality characteristics. Political socialization can be defined as process of socialization in a political system through information on political symbols, institutions and procedures and internalizing the value system and ideology supporting the system. It is also a process of acquisition of political culture.

This process works at individual as well as at community level through cultural transmission. It is also part of general socialization, which starts at a later stage in life. The two important components are: 1. Inclusion of general values and norms regarding political behavior and political matters 2. The induction of an individual or some people into a particular and learning its ideology and action programmes.

* Asst. Prof. in Pol. Sc., Regional Institute of Education, Bhubaneswar.

Ketaki

[Signature]

प्राचार्य/ PRINCIPAL
क्षेत्रीय शिक्षा संस्थान
Regional Institute of Education
भुवनेश्वर/ Bhubaneswar-751022

2017 ✓ *

ISSN 0970-7247

THIRD CONCEPT

English Monthly

Annual Subscription Rs. 200

Vol. 31

No. 370

DECEMBER 2017

Rs. 20.00

- ❖ October Revolution Centenary
- ❖ The Czech Elections
- ❖ Demagogy of the Media
- ❖ Medical Tourism
- ❖ Service Sector
- ❖ Maldives & Climate Change

K. K. K. K.

[Signature]

प्राचार्य/ PRINCIPAL
क्षेत्रीय शिक्षा संस्थान
Regional Institute of Education
भुवनेश्वर / Bhubaneswar 751022

Has Naxalite Movement Lost its Ideology?

Dr. Kalinga Ketaki*

India is a land of diversity and democracy. We celebrate diversity in the form of festivals or social gatherings or giving rights to the different diverse groups. In schools also when a child is given an essay to write on any social topic, he/she either chooses or is given to write on women empowerment, child rights or human rights, importance of education, or reservation system etc... But we fail to encompass every one under the umbrella of so called *diversity & democracy*.

One such most important special group which needs to be addressed in India is the *Naxalite group*. The Naxalite groups and their movement draws attention of the government from time to time and plays a vital role in Indian governance. It's we and the government have to see whether the Naxalite movement is an *issue* or a *threat* and must go deep inside to raise and fight for the issue or curb the threat.

History of Naxal Movement

The origin of the term is traced back to the Naxalbari village in Darjeeling, West Bengal, where the movement took place. A section of the Communist Party of India (Marxist) (CPI-M) led by Charu Mazumdar, Kanu Sanyal, and Jangal Santhal initiated a violent uprising in 1967. Jangal Santhal was the President of the Siliguri Kisan Sabha and supported the movement initiated by Kanu Sanyal to adopt armed struggle to redistribute land to the landless.

Within a week of the uprising of the movement, a sharecropper near Naxalbari village was attacked by the landlord's men over a land dispute. On 24th May 1997 the team of police

arrived to arrest the peasant leaders, it was hunted down by a group of tribals led by Jangal Santhal, and a police inspector was killed in a hail of arrows. This event encouraged many Santhal tribals and other poor people to join the movement and to start attacking local landlords.

The Naxalite movement was initiated by some of the poor sections of the society who were too depressed to demand anything for their welfare. They were morally compelled to raise arms to get what they wanted. No one came to listen them, neither the government nor the law. These oppressed and suppressed took arms in their hand and thus carried their movement in the name of revolution.

Difference between Naxalites and Maoists

Both Maoists and Naxalites trace their origin from an outcome of the 1967 uprising. Maoists work with an agenda and use weapons to achieve their aims. Naxalites focus on mass organizations.

Naxalism: Naxalism originated as a rebellion against marginalization of the poor forest dwellers and gradually against the backwardness in rural parts of Eastern India. The origin of the Naxalism was a result of the split that took place in the Communist Party of India (Marxist) in 1967. The Communist Party of India (Marxist-Leninist) has been fighting elections in several states across India. Most prominent among these groups are the CPI-ML (Liberation), CPI-ML (Kanu), CPI-ML (Jan Shakti), CPI-ML (New Democracy) and others.

Maoism: - Maoism originated in China as a form of Communist theory derived from the teachings of Chinese political leader Mao Zedong. Maoists were the loyal believers of chairman Mao's philosophy.

* Asst. Prof. in Pol. Sc., Regional Institute of Education Bhubaneswar.



THIRD CONCEPT

English Monthly

Annual Subscription Rs. 200

Vol. 32

No. 382

DECEMBER 2018

Rs. 20.00

- ❖ Retreating Construct of International Relations
- ❖ Media Literacy & Conflict Resolution
- ❖ One Nation, One Election
- ❖ Federalism in India
- ❖ Welfare of Girl Child
- ❖ Gandhi & Champaran Satyagraha



प्राचार्य/ PRINCIPAL
क्षेत्रीय शिक्षा
Regional Institute of Education
भुवनेश्वर

Welfare of Girl Child in India

Dr. Kalinga Ketaki*

[The world is transforming itself fast and along with that there is also a visible change in the attitude of the people towards girls. Girls, on their part, have been struggling through various organizations and movements, to liberate themselves from the bondage they find themselves in, thanks to the values and attitudes of the male-dominated social order. As a result of such efforts and also because of the changing environment there are signs of hope for the establishment of justice for the feminine gender. But we have miles to go before we can claim that there is gender justice in India and that Indian girls are liberated.]

In spite of all the efforts to promote the welfare of girl child, we have to admit that even now Indian girl child are not treated with dignity and they are neither allowed nor encouraged to enjoy their basic rights. In short, the Indian society today is totally male dominated and biased against the female gender, resulting in all kinds of exploitations and discriminatory practices. Obviously, therefore, the status of Indian girl child is unjust and inhuman. For instance, female feticide and female infanticide are widespread. What is really important is to find the right social order where there will be justice for the feminine gender.

According to the documents of the United Nations, women constitute almost one half of the total population of the world. But their social, economic and political status is lower than that of man in all the member countries like the United States of America, the United Kingdom, the Soviet Union, China and India.

This paper makes a survey of the condition of girls and the steps taken for their welfare, all over the world in general and in India in particular. Wherever possible a comparison is made between the condition of women in India and those in other countries. As it is a general survey, it covers the major areas that affect

seriously the life of the rights of girl child but without attempting any detailed analysis.

Discrimination of Girl Child

The girl child discrimination begins even before birth in the form of female feticide. Sex selection has been argued as the consequence of technology. But simply because it is a consequence it does not excuse the fact that between the years 1981-1991 a whopping 11 million girls joined India's missing-girl group of 35 and 40 million. According to Amartya Sen, there are more than a hundred million girls missing in the world of which India had 37 million missing girls by 1986.

According to United Nations Cyberschoolbus paper on the girl child, out of 130 million children not in school, almost 60% of them are girls. By the age of 18 girl children have received on average 4.4 years less education than boys. According to a special report on the girl child 'and labour by International Organization (I.L.O), more than millions of girl child between the age of 5 and 17, are engaged in child labour, out of them over 50% of them are in hazardous industry and 20% of those are below twelve years old. It is hard to get correct statistical information about girl child labour since the kind of the girl undertaken is more invisible than that of boys.

Female-Male Ratio

According to the Indian Census Report of 1981, the sex ratio in the country is in favour of the

* Asst. Prof. in Pol. Sc., Regional Institute of Education, Bhubaneswar.

[Signature]
Principal
Regional Institute of Education
Bhubaneswar-751005

Study of landscape evolution in North Koel River Basin, Jharkhand, India: tectonic and structural implications based on hypsometric analysis

Arora AMAN^{1*}, Manish PANDEY², Abhra SINGH¹, Masood A. SIDDIQUI¹

¹ Department of Geography, Faculty of Natural Sciences, JMI University, New Delhi-110025

² School of Environmental Sciences, JNU, New Delhi-110067

* Corresponding author: aman.july07@gmail.com

Received on 05-08-2018, reviewed on 25-10-2018, accepted on 30-10-2018

Abstract

Hypsometry is widely used for inferring tectonic effects and erosion status of landscapes. Tectonics, structural inhomogeneity, lithologic differences, and climatic variations lead to topographic undulations discerned into discrepancies in the values. Hypsometric index (and curve), indicative of frequency distribution of proportional elevation with the respective proportional area, is used as a tool to describe characteristics of landscape morphology, lithological variability, and degree of fluvial dissection. Many workers have used to infer comparison of rates of erosion with tectonic uplift rates. However, there are many other factors reported to influence topographic undulations other than tectonics which lead to a variety of hypsometries. Morphotectonic index, hypsometric integral, calculated using digital elevation models (DEMs) in GIS environment has been widely used for inferring tectonic effects, status of erosion, and structural controls. The present study is conducted in the North Koel River basin. This river rises in the Ranchi plateau and joins the Son River a few miles north-west of Haidamagar, is the right bank tributary of the Son River. Along its entire course of flow, North Koel river (260 km) flows through plateau region mostly formed of metamorphic rocks. Hence, structural control seems to be the primary control on the landscape evolution of this sub-basin. In this study, hypsometric integral (and curve) has been calculated for third order and upper order streams to look whether this morphotectonic index shows any sign of tectonic, structural, or lithologic control on the landscape evolution in the North Koel River basin.

Keywords: *Hypsometric integral, Morphotectonic, GIS, North Koel River*

Rezumat. Studiu privind evoluția peisajului în bazinul râului Koel de Nord, Jharkhand, India: implicații tectonice și structurale bazate pe analiza hipsometrică

Hipsometria este larg utilizată în indicarea efectelor tectonice și a stadiului de eroziune al reliefului. Tectonica, neomogenitatea structurală, diferențele litologice și variațiile climatice duc la undulații topografice marcate în discrepanțe ale valorilor. Indicele hipsometric (și curba), care indică distribuția frecvenței altitudinii proporționale cu aria proporțională corespunzătoare, este folosit ca instrument pentru a descrie caracteristicile morfologiei peisajului, variabilitatea litologică și gradul de disecție fluvială. Mulți muncitori au folosit-o pentru a deduce compararea ratelor de eroziune cu ratele tectonice de ridicare. Cu toate acestea, există mulți alți factori care au influențat undulațiile topografice, altele decât tectonica, care au dus la o varietate a hipsometrilor. Indicele morfotectonic, integrala hipsometrică, calculat folosind modele altimetrice digitale (DEM) în mediul SIG, a fost folosit pe scară largă pentru a deduce efectele tectonice, starea eroziunii și controalele structurale. Prezentul studiu este făcut pentru bazinul hidrografic al râului Koel de Nord. Acest râu izvorăște din platoul Ranchi și unește cu râul Son, aflat la câțiva kilometri nord-vest de Haidamagar, fiind afluent de dreapta al râului Son. De-a lungul întregului său curs, râul Koel de Nord (260 km) curge prin regiunea de platou formată mai ales din roci metamorfice. Prin urmare, controlul structural pare a fi controlul primar privind evoluția peisajului din acest sub-bazin. În acest studiu, a fost calculată integrala (și curba) hipsometrică pentru cursurile de ordinul trei și cele de ordin superior pentru a vedea dacă acest indice morfotectonic indică vreun semn de influență tectonică, structurală sau litologică asupra evoluției peisajului din bazinul râului Koel de Nord.

Cuvinte-cheie: *integrala hipsometrică, morfometrie, SIG, râul Koel de Nord*

Introduction

The geomorphology of Jharkhand state is characterized by a big number of tectonically origin rivers networks passing through the hills and valleys. The rock types are metamorphic which are less prone to soil erosion in rainy season. The North Koel River rises on the Ranchi plateau and enters Palamau division, below Netarhat near Rud. After flowing nearly due west for about 32 kilometres (20 mi), it turns north at an almost complete right angle through a gorge at Kutku, and flows through the centre of the

district until it falls into the Son a few miles north-west of Haidamagar. River basins are the important elements of the fluvial landforms and a large quantity of study has focused on their geometric behaviors and characteristics, which contain the topology of the stream networks and quantitative analysis of drainage texture, pattern, shape, and relief characteristics (Abrahams 1984; Huggett and Cheesman 2002).

The region is rich in various natural resources; most parts of the areas remain not accessible due to the mountainous nature of the land. Conservation of land and water resources is an important aspect of

Self attested
Abhra Singh

Arora Aman
Regional Institute of Education
Bhubaneswar-751022

Publisher : John Wiley & Sons, Inc.
 Location : Hoboken, NJ, USA
 ISBN (printPaper-13) : 9781119870531
 Title (main) : Hydrogeochemistry of Aquatic Ecosystems
 Copyright (publisher) : © 2023 John Wiley & Sons, Inc
 Numbering (edition) : 1
 Creators (author) : Sughosh Madhav
 Subject Info :
 Reference: Life Sciences
 ID (unit) : c3
 ID (file) : c3
 Count (pageTotal) : 24
 Event (xmlCreated) : 2022-07-28 (SPi Global)
 Numbering (main) : 3
 Numbering (pageFirst) : 61
 Numbering (pageLast) : 83

3

Spatial Distribution of Arsenic Contamination in India

A Systematic Review

Abhra Singh¹, Risha Singh², Binod Kumar Nath³, Mohammad Hashim¹, Masood Ahsan Siddiqui¹,
 Hasan Raja Naqvi¹, Lubna Siddiqui¹

¹ Department of Geography, Faculty of Natural Sciences, Jamia Millia Islamia, New Delhi, India

² Centre for the Study of Regional Development, Jawaharlal Nehru University, New Delhi, India

³ Public Works (Roads) Department Office of the Chief Engineer, PWD (Roads) Chandmari, Guwahati, Assam, India

Abstract

Arsenic is one of the heavy metals that acts as an environmental pollutant when mobilized. Arsenic poisoning through enrichment and mobilization in soil, water, and sediments is a burgeoning global issue. The study is an attempt to chalk out the geographical distribution of arsenic-contaminated regions in India and to develop an understanding of its mobilization in terms of natural versus anthropological causes in the region. We conducted a systematic review using the electronic databases of SCOPUS, Web of Science along with peer-reviewed journals. Our findings

Prof. Masood Ahsan Siddiqui
 Department of Geography
 Faculty of Natural Sciences
 Jamia Millia Islamia
 New Delhi-110025

Self attested,
Abhra Singh

Abhra Singh
17/10/22
ABRAH

PRINCIPAL
 केन्द्रीय शिक्षा संस्थान

Scanned with CamScanner
 भुवनेश्वर / Bhubaneswar-751022

Laser second-harmonic generation from an overdense plasma slab

M. KAUR,¹ P. C. AGARWAL,² AND S. KAUR¹

¹Department of Physics, Guru Nanak Dev University, Amritsar 143005, India

²Regional Institute of Education, Ajmer 305004, India

(RECEIVED 12 January 2017; ACCEPTED 4 April 2017)

Abstract

A s-polarized short-pulse laser impinged obliquely on an overdense plasma slab is shown to produce very significant second harmonic in the direction of specular reflection and transmission. The laser induces a non-linear current on electrons, which is curl free. However, with sharp plasma boundary, it gives rise to electromagnetic radiation at the second harmonic. Our formalism includes multiple reflections of the incident and second-harmonic waves from both the front and rear surfaces. The present work includes finiteness of the slab. The normalized second-harmonic amplitude acquires a sharp peak at some specific angle of incidence for a particular set of parameters dependent on thickness of the slab and plasma density.

Keywords: Laser-plasma interaction; Oblique incidence; Overdense plasma slab; Second-harmonic generation

1. INTRODUCTION

At high laser intensities the interaction between a laser beam and plasma, gives rise to a variety of non-linear effects (Marklund & Shukla, 2006; Ganeev *et al.*, 2012; Weber & Riconda, 2015; Zhang *et al.*, 2015). These include harmonic generation (HG) (Upadhyay & Tripathi, 2005), wakefield acceleration (Ibbotson *et al.*, 2010), THz (terahertz) radiation generation (Kumar *et al.*, 2011), and parametric instabilities (Klimo & Tikhonchuk, 2013). HG has its applications in the diagnostic of non-linear medium, coherent multiphoton spectroscopy, and other phenomena (Döbele *et al.*, 2000; Pirozhkov *et al.*, 2006; Li *et al.*, 2011; Liu *et al.*, 2011). Much of the work on HG in laser-produced plasma has been reported by thin foils (Teubner *et al.*, 2004), slab (Deb & Saha, 2015), gas jet (Banerjee *et al.*, 2003), and solid target (Dollar *et al.*, 2013). Some serious problems are encountered for HG from gaseous plasma, which encourages the researcher to use other targets. Increased value of laser intensity will increase harmonic intensity in gaseous plasma, cause rapid ionization of gaseous atoms, and decrease the harmonic emission. On the other hand, mismatch of the phase velocity of the laser beam and harmonic radiation affects the conversion efficiency. In a thin foil, harmonics have been mainly

observed in reflection from the front side of massive solid targets. Efficiency of the yield can be increased by phase matching. It turns the process into a resonant one. Kaur and Sharma (2008) studied third HG in a laser-produced thin foil plasma with conversion efficiency obtained as 0.01%.

Currently, there is strong interest in intense short pulse laser interaction in plasma with ultrathin foils. One of the primary objectives is to achieve proton acceleration via TNSA (target normal sheath acceleration) or RPA (radiation pressure acceleration) mechanisms. In these studies, overdense plasma foils of thickness comparable with laser wavelength or much shorter wavelengths are employed (Tripathi *et al.*, 2009). Adusumilli *et al.* (2011) have argued that when a laser beam of finite spot size (e.g., a Gaussian beam) impinges on an ultrathin foil, the radiation pressure it exerts on the foil is more on the axis and decreases with distance r . As a result, the foil acquires a curvature. The laser falling on the curved boundary is no longer normal to the boundary. Optical ray makes an angle to the surface normal. Under such a situation transmission coefficients for the s and p polarizations are different and transmitted wave does not maintain its circular polarization. They showed that s-polarized laser obliquely impinged on a foil can give rise to second-harmonic generation (SHG) in the direction of specular reflection. Their treatment is limited to semi-infinite plasma. SHG of a right circularly polarized Gaussian electromagnetic beam in an unbounded magnetized plasma has been investigated by

Address correspondence and reprint requests to: S. Kaur, Department of Physics, Guru Nanak Dev University, Amritsar-143005, India. E-mail: sukhdeep.ijid@gmail.com

Agarwal

Regional Institute of Education
Ajmer / Bhubaneswar-751022



Copyright © 2018 American Scientific Publishers
All rights reserved
Printed in the United States of America

Advanced Science,
Engineering and Medicine
Vol. 10, 1-7, 2018
www.aspbs.com/aseim

Low Percolation Threshold and Electrical Transport in Poly Vinylchloride/Multi-Walled Carbon Nanotube Composites

* Ved Prakash Arya^{1,*}, P. C. Agarwal¹, Ravi Bhatia², Sumitra Arya³, M. S. Vasanth Kumar⁴, and V. Prasad⁴

¹ DESM, Regional Institute of Education, Ajmer 305004, India

² Department of Physics, Panjab University, Chandigarh 160014, India

³ Independent Researcher, Shiva Colony, Ajmer 305004, India

⁴ Department of Physics, Indian Institute of Science, Bangalore 560012, India

Thin film composites of poly vinylchloride (PVC) with different wt% of multi-walled carbon nanotubes (MWCNTs) are prepared by a solvent casting method. A percolation threshold as low as 0.2 wt% is observed from electrical conductivity data. In solvent casting method, a high degree of dispersion of MWCNTs in the polymer matrix is observed. Scanning electron microscopy images show a uniform distribution of MWCNTs in the PVC matrix. A good cohesion between PVC network and MWCNTs can be observed in transmission electron microscopy images. These composites are stable up to 250 °C as evident from thermogravimetric analysis. The electrical conductivity of the composites varies from 10^{-7} S/cm to 6 S/cm with different MWCNT loadings. Coulomb gap variable range hopping (CG-VRH) is observed in these composites at temperatures below 35 K. The resistivity of these composites shows a crossover when going from one CG-VRH regime to another CG-VRH regime in two different temperature regions of 1.4–4.2 K and 6.5–34 K.

Keywords: Carbon Nanotubes, Polymers, Electrical Properties, Transport Properties.

1. INTRODUCTION

The physical properties of polymer composites have been studied for several years. The addition of a small quantity of filler to the polymer matrix can result in a composite having superior electrical and mechanical properties.¹⁻³ Earlier, carbon black,⁴ metal particles,⁵ graphitic particles and carbon fibers⁶ were traditionally used as filler materials for polymer composites. After the discovery of carbon nanotubes (CNTs), they have also become one of the important materials for making polymer composites. The inclusion of CNTs in the polymer matrix can improve the mechanical, electrical and thermal properties of the host material by several orders of magnitude when compared with traditional fillers.¹ As the CNTs have a high aspect ratio and electrical conductivity, they are regarded as promising fillers and can provide electrical percolation at very low concentration.

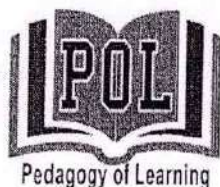
Different methods such as *in situ* polymerization,⁷ solvent method, melt mixing⁸ and latex technology⁹ have

been adopted for the preparation of polymer composites. The unbundling of CNTs is not an easy task and the CNTs tend to agglomerate due to van der Waals interactions. This leads to inhomogeneous dispersion due to segregation in the polymer matrix and affects the properties of the composites. Thus the most important aspect in preparing the composite materials with CNTs is to achieve a high degree of dispersion of CNTs in polymer matrix.¹⁰

The host materials include a wide spectrum of polymers ranging from conductive polymers such as polypyrrole and poly(p-phenylene vinylene) to insulating polymers such as polystyrene, poly(methyl methacrylate), polyvinyl alcohol, epoxy, polycarbonate, polyamide, and polypropylene.

The polymer composites have many potential applications. In recent years many researchers have reported the characteristics of shape memory effect on shape memory polymer (SMP)/CNT composites. SMP has the characteristics such as large recoverability, light weight, superior molding property and thus can be used as actuators.¹¹ The Field emission study has also been carried out for polymer/CNT composite samples.¹² These composites can

* Author to whom correspondence should be addressed.

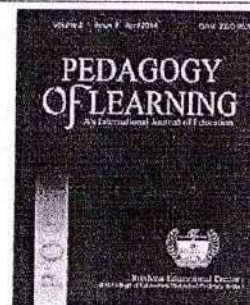


PEDAGOGY OF LEARNING (POL)

International Refereed/Peer Reviewed
Journal of Education

E-ISSN: 2395-7344, P-ISSN: 2320-9526

Abstracted and indexed in: Google Scholar,
Research Bib, International Scientific Indexing
(ISI), Scientific Indexing Services (SIS),
WorldCat, Cite Factor, Impact Factor: 0.787(GIF)
Website: <http://pedagogyoflearning.com>



Effectiveness of Constructivist Teaching Learning Approach on Students Achievement in Science

P.C. Agarwal, Ph.D.

Professor and Principal

Regional Institute of Education, NCERT, Bhubaneswar-751022, Odisha India

E-mail: pcagca@yahoo.com

I.B. Agarwal

Research Scholar, MDS University, Ajmer-305004, Rajasthan, India

Corresponding Author: **P.C. Agarwal**, Ph.D.

E-mail: pcagca@yahoo.com

Article History:

Received: 14 September 2018, Received in revised form: 28 September 2018

Accepted: 12 October 2018, Published online: 23 October 2018

Abstract

The present paper reports the effectiveness of constructivist approach on achievement in science in contrast with the traditional teacher centered approach. In this study, students of science of class VIII were divided in three groups i.e. higher score group, average score group and lower score group based on test-scores of pre-test administered. Teaching-learning processes were carried out by providing meaningful learning situations facilitating the students of all the three groups hands-on-experiences through activities, i.e. interactively engaging them, holding critical discussions giving opportunities of critical thinking and their reflections keeping in view psychology, cognition-level and interests of the students. After this intervention employing 5Es model of constructivist approach for a period of six weeks instructions, post-test was administered on all the three groups. Significant relationship is found in the approach used and achievement scores of the students. However, no significant difference is found in the scores of the students of all the three groups at 0.05 level of significance. Based on the results educational implications are suggested.

Keywords: Constructivist approach, traditional teacher centered approach, interactive engagement


प्राचार्य/PRINCIPAL
क्षेत्रीय शिक्षा संस्थान
Regional Institute of Education
भुवनेश्वर / Bhubaneswar-751022

Research Article

Cite this article: Kaur M, Agarwal PC, Kaur S, Gill TS (2018). Relativistic effects on propagation of q-Gaussian laser beam in a rippled density plasma: application of higher order corrections. *Laser and Particle Beams* 1–8. <https://doi.org/10.1017/S0263034618000228>

Received: 25 January 2018

Revised: 12 June 2018

Accepted: 13 June 2018

Keywords:

Density ripple; q-Gaussian laser beam; Relativistic nonlinearity; Self-focusing

Author for correspondence:

S. Kaur, Department of Physics, Guru Nanak Dev University, Amritsar, 143005, Punjab, India. E-mail: sukhdeep.iitd@gmail.com

Relativistic effects on propagation of q-Gaussian laser beam in a rippled density plasma: application of higher order corrections

M. Kaur¹, P. C. Agarwal², S. Kaur¹ and T. S. Gill¹

¹Department of Physics, Guru Nanak Dev University, Amritsar 143005, Punjab, India and ²Regional Institute of Education, Bhubaneswar 751022, India

Abstract

A nonparaxial investigation for propagation characteristics of q-Gaussian laser beam in rippled density plasma is studied by considering the relativistic nonlinearity. The field distribution in the medium is expressed in terms of q parameter and beam width parameter f . Nonlinear parabolic partial differential equation governing the evolution of complex envelope in slowly varying approximation is solved in a modulated density profile. Analytical theory of self-focusing including higher order terms in the expansion of dielectric function up to fourth order is developed and the variation of beam width parameter f with the distance of propagation for different parameters is studied. One may note that increased value of density ripple, laser intensity and depth of modulation, increases self-focusing whereas a lower value of q shows strong self-focusing. A comparative study between paraxial and nonparaxial study has also conducted. This study is useful for research in high energy density physics.

Introduction

Study of nonlinear phenomenon as a subject of experimental and theoretical research in laser plasma physics is an active area in modern plasma research. Interaction of laser radiation with plasma gives rise to a number of nonlinear processes such as self-focusing, self-modulation, harmonic generation etc. It is important to study the underlying principle of this nonlinear phenomenon. The laser beam propagation in plasma has potential relevance due to their applications in X-ray sources (Zhang *et al.*, 1998; Miller *et al.*, 2012), laser-driven plasma accelerators (Hoffmann *et al.*, 2005; Xie *et al.*, 2009), harmonic generation (Salih *et al.*, 2003), and fast ignition concept (Ghoranneviss *et al.*, 2008). Further, such electromagnetic interactions are also important on account of their relevance in exotic ionospheric phenomena like profile modification and distortion of radio wave signal. In order to practically realize the laser plasma-based applications, it is desirable that laser beam should propagate hundreds of Rayleigh lengths. When high power laser beam propagates through plasma, instabilities, and nonlinear phenomenon like self-phase modulation, filamentation instability, group velocity dispersion, the finite pulse effects, relativistic and ponderomotive self-focusing become important.

Among the fundamental processes self-focusing and self-trapping are important nonlinear phenomena. The self-focusing is a process in which electromagnetic beam of light comes to focus as a consequence of nonlinear response of a material medium. In a nonlinear medium, a high power electromagnetic beam creates a refractive index profile across its cross-section corresponding to its intensity profile. The refractive index of the medium increases with the beam intensity. As a result, the beam focuses of its own. Self-focusing was reported for the first time by Askar'yan (1962) and since then, it has been focus attention of scientific community for nearly five decades because it affects a number of other processes. In laser-plasma interaction, it plays a crucial role in the beam propagation. The self-focusing is strongly affected by the transverse distribution of beam irradiance.

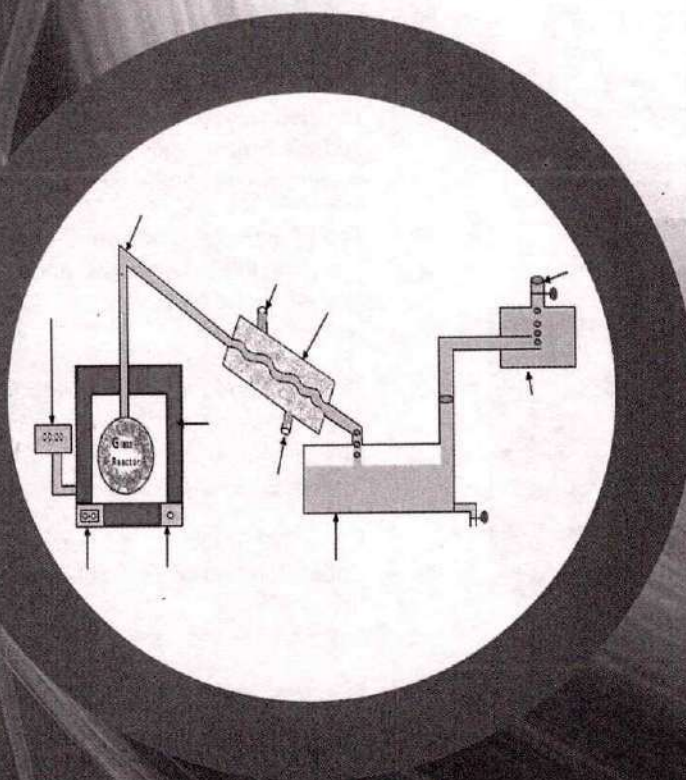
As mentioned above, the basic physical mechanism responsible for self-focusing is nonlinear refractive index of the medium which is an increasing/decreasing function of laser intensity and thus modifies the dielectric characteristics of the medium. This mechanism takes place by various methods like ohmic heating (Litvak, 1966), ponderomotive force and relativistic mass modification (Hora, 1975). When the laser power is sufficiently large, the electric field associated with high power laser pulse leads to quiver motion of electrons with a velocity comparable with the velocity of light in vacuum. This quiver motion of electrons in laser beam further expels the electrons from high-intensity region to low intensity region due to ponderomotive force. This will set up a space charge field that retards the electrons and a quasi-steady state is created. This modifies the refractive index of the plasma, causes curvature of the wavefront and focuses the beam. The transverse gradient of the nonlinear refractive index is responsible for

ISSN 0036-679X (print)
0972-5061 (online)

School Science

A QUARTERLY JOURNAL OF **SCIENCE EDUCATION**

Vol. 55 Nos. 2 and 3 June-September 2017



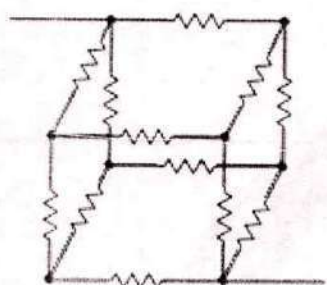
Pyrolysis of waste plastic bags to produce fuel— need of the hour.

Agarwal

ISSN 0036-679X (print)
0972-5061 (online)

Vol. 55 Nos. 2 and 3 June-September 2017

Contents



- 5 Editorial
- 8 Science Learning Through Experimentations
D. K. Pandey
- 13 Awareness of Education for Sustainable Development among Class IX Students of Yadadri Bhuvanagiri District in Telangana
Kadem Srinivas and Rashmi Srivastava
- 17 The Effectiveness of Hands-on Activity Teaching in Learning Acid and Base Concepts at the Secondary Level
Amar Srivastava
- 21 To Study the Effect of 'Live' Miraculous Demonstrations on Increasing Interest in Chemical Sciences
Sudesh Bhaskar Ghoderao
- 27 A Study of Students' Conceptual Understanding of the Content of EVS at the Primary Stage
S. V. Sharma and Saryug Yadav
- 35 Effectiveness of Digital Technology on Biology Learners at the Secondary Level
Bichitra Choudhuri and Ahrar Husain

Agenda

2017

S. Kapoor

3

Study of buoyancy driven free convective flow of a micropolar fluid through a darcy-forchheimer porous medium with mutable thermal conductivity

S Rawat^{a*} & S Kapoor^b

^aDepartment of General Studies, Jubail University College, Jubail Industrial City 31961, Kingdom of Saudi Arabia

^bDepartment of Education in Science and Mathematics, Regional Institute of Education (National council of Education Research and Training), Bhubaneswar 751 022, India

Received 31 May 2016; accepted 12 June 2017

This paper presents a study of the natural convection flow, heat and mass transfer of an incompressible micropolar fluid between two vertical parallel plates containing a Darcy-Forchheimer porous medium. Asymmetric wall temperatures and concentrations are present and take into account a temperature-dependent thermal conductivity. The transformed equations for linear momentum, angular momentum, energy and species have been solved numerically using the finite element method. The effects of Darcy number (Da), Forchheimer number (Fs), Grashof number (Gr) and thermal conductivity parameter (S) on the velocity, angular velocity and temperature profiles have been studied in detail. The numerical results indicate that velocity and angular velocity (micro-rotation) increase as the Darcy number increases but they are reduced with increasing Forchheimer parameter, Grashof number and thermal conductivity parameter. Moreover, the thermal conductivity parameter increases as the temperature decreases. The effect of vortex viscosity parameter, R , on the volume flow rate, the total heat rate and the total species rate added to the fluid has also been examined. The effect of thermal conductivity parameter, S , on heat transfer rate has also been studied. A comparison with another method has also been presented and has been found to be well in agreement.

Keywords: Micropolar fluid, Porous medium, Variable conductivity, Finite element, Grashof number, Heat/mass transfer

1 Introduction

Natural convection in fluid saturated porous media constitutes an area of major activity in transport phenomena research owing to its application in a diverse number of fields including geothermal energy systems, enhanced recovery in petroleum reservoirs, filtration sciences, heat exchange between soil and atmosphere, transport of moisture through porous industrial materials and ceramic processing. The fundamental importance of convective flow in porous media has been well-reviewed in the recent book by Ingham and Pop¹. Nield and Bejan² have also addressed in detail the natural convective flows due to combined buoyant mechanisms in porous media. Rawat and Kapoor³ focused to develop a mathematical model for the comparative study of combined effects of free convective heat and mass transfer on the steady two-dimensional, laminar fluid flow past a moving permeable vertical surface subjected to a transverse uniform magnetic field.

Although, considerable work has been reported on flow heat and mass transfer in geometries with

and without porous media^{4,5}, a majority of porous studies⁶⁻⁸ have been on Darcy's law which states that the volume averaged velocity is proportional to the pressure gradient. Darcy's law however is valid only for slow (viscous-dominated) flows through porous media with low permeability. At higher flow rates or in highly porous media, there is a departure from the linear law and inertial effects become important. Physically, this departure is believed to be due to flow separation within the medium, whilst mathematically, it manifests itself as a nonlinear term in the velocity-pressure gradient relationship.

Recently, Rawat *et al.*⁹ presented for the steady, two-dimensional magneto-convection heat transfer of a two-phase, electrically-conducting, particle-suspension in a channel containing a non-Darcian porous medium intercalated between two parallel plates, in the presence of a transverse magnetic field. The channel walls are assumed to be isothermal but at different temperatures. Rawat *et al.*¹⁰ also investigate the two dimensional flow, heat and mass transfer of chemically reacting micro polar fluid over a non-linear stretching sheet with variable heat flux in a non-Darcy porous medium. The rate of chemical reaction is

*Corresponding author (E-mail: sam.rawat@gmail.com)

Principal
क्षेत्रीय शिक्षा संस्थान
Regional Institute of Education
भुवनेश्वर / Bhubaneswar-751022

Ultrasonic behaviour of a nuclear extractant with some apolar diluents at 303.15K

Kishore Kumar Panda^{1*}, Biswajit Dalai¹, Nandita Swain² and Sarat Kumar Dash³

¹BSH (Physics), Gandhi Institute of Engineering and Technology, Gunupur, Odisha, India – 765 022.

²College of Basic Science and Humanities, O.U.A.T, Bhubaneswar Odisha, India – 751003.

³DESM, Regional Institute of Education (NCERT), Bhubaneswar, Odisha, India – 751 022.

Corresponding author: *Email: gist.kkpanda1@gmail.com, Mob. +91-9438017875, Office Phone: +91-685-7250170, Fax: +91-685-250232.

Abstract

Density (ρ) and ultrasonic velocity (U) of binary mixtures of a nuclear extractant, i.e. di-(2-ethylhexyl) phosphoric acid (D2EHPA) with some apolar diluents viz. n-heptane, carbon tetrachloride and carbon disulfide were measured at 303.15 K under atmospheric pressure over the entire mole fraction range of D2EHPA. The experimental data have been used to compute molar volume (V), available volume (V_a), isentropic compressibility (β_s) and acoustic impedance (Z). The deviation in ultrasonic velocity (ΔU), available volume (ΔV_a), isentropic compressibility ($\Delta \beta_s$) and acoustic impedance (ΔZ) have also been calculated over entire mole fraction range of D2EHPA. The experimental and derived parameters have been discussed in terms of molecular interaction in the binary mixtures.

Keywords: Density, Ultrasonic velocity, Binary mixture, Molecular interaction, Deviation functions

Introduction

In solvent extraction technology, a nuclear extractant di(2-ethylhexyl) phosphoric acid (D2EHPA) is widely used for extraction of actinide and rare earth elements from their ores [1, 2]. It is also used for recovery of Zinc, Chromium, Indium, Gallium and Cobalt. D2EHPA, an acidic extractant, is used alone or in combination with other synergistic extractants such as di-butyl butyl phosphate (DBBP), di-octyl phenyl phosphoric acid (DOPPA), di-nonyl phenyl phosphoric acid (DNPPA), tri-

butyl phosphate (TBP), tri-octyl phosphine oxide (TOPO) and methyl isobutyl ketone (MIBK) in solvent extraction process [1, 2]. Furthermore, the extraction efficacy of D2EHPA improves with the addition of suitable organic apolar diluents/ modifiers for greater dispersal and more rapid phase disengagement [3]. In recent years, ultrasonic technique has been used in elucidation of structural properties of polar-polar or polar-apolar liquid mixtures [4-6]. Therefore, attempt has been made to carry out systematic investigation in binary mixture of D2EHPA with some

MATHEMATICAL COMPUTATION OF DYNAMIC VISCOSITY IN MIXTURES OF ARENES AND AN EXTRACTANT (DEHPA) AT 303.15 K

Prativa Kar¹, Runu Sahu¹, Biswajit Dalai¹ and Sarat Kumar Dash²

¹Department of BSH, Gandhi Institute of Engineering and Technology (GIET), Gunupur, Odisha, India – 765 022

²Department of Physics, Regional Institute of Education (NCERT), Bhubaneswar, Odisha, India – 751022

ABSTRACT

Dynamic viscosities (η) of binary mixtures containing di-(2-ethyl hexyl) phosphoric acid (DEHPA) and three arenes, such as nitrobenzene, chlorobenzene and toluene, have been experimentally measured over entire range of DEHPA at temperature 303.15K and pressure 0.1MPa. The dynamic viscosity of liquid mixtures have been calculated using various mathematical relations such as Bingham relation, Kendall-Munroe relation, Arrhenius – Eyring relation, Croenaurer-Rothfus- Kermore relation and Gambrill relation. The validity of these relations has been verified by taking the average percentage deviations between experimental and computed values. A comparison between theoretical and experimental values of viscosity reveals that Gambrill's relation predicts the data reasonably well.

Keywords: Dynamic viscosity; DEHPA; arenes; binary mixtures; mathematical relations

1. INTRODUCTION

The transport properties provide an information about structure of molecules and inter molecular interactions in the binary and multi-component liquid mixtures [1-3]. Viscosity plays an important transport property [3-5] in solvent extraction, fluid transportation, mixing, agitation, heat exchange, filtration etc. This property at different compositions of liquid mixtures depends on the nature of each component liquids. Hence, it becomes of considerable interest to compute viscosity in liquid mixtures by applying various mathematical relations and to identify the suitable relation for the studied liquid mixtures. Viscosity of the binary mixtures, di-(2-ethyl hexyl) phosphoric acid (DEHPA) and three arenes, such as nitrobenzene, chlorobenzene and toluene have been measured at 303.15K [6] and the viscosity values computed theoretically by using five different relations [7-9] such as Bingham relation (B), Kendall-Munroe relation (KM), Arrhenius – Eyring relation (AE), Croenaurer-Rothfus- Kermore relation (CRK) and Gambrill relation (G). The legitimacy of these relations has been compared with experimental values by taking the average percentage deviation (APD).

Validation of Theoretical Approach of Viscosity in Polar-Apolar Liquid Mixtures Containing a Nuclear Extractant at 303.15K

Shobharani Jena¹, Bijayalaxmi Kuanar¹, Biswajit Dalai^{*1}, Sarat K. Dash², Nandita Swain³, Saroj K. Singh⁴

¹Department of BSH, Gandhi Institute of Engineering and Technology (GIET), Gunupur, Odisha, India

²Department of Physics, Regional Institute of Education (NCERT), Bhubaneswar, Odisha, India

³College of Basic Science and Humanities, OUAT, Bhubaneswar, Odisha, India

⁴Institute of Minerals and Materials Technology (CSIR), Bhubaneswar, Odisha, India

*Corresponding Author e-mail: biswajit_dalai@rediffmail.com

ABSTRACT

Viscosities (η) of binary liquid mixtures of a nuclear extractant, di-(2-ethyl hexyl) phosphoric acid (DEHPA, $C_{26}H_{54}O_4P$) with three apolar solvents, namely n-pentane (C_5H_{12}), benzene (C_6H_6) and carbon tetrachloride (CCl_4), were experimentally measured at 303.15K and pressure 0.1MPa. Again viscosities of the studied mixtures were computed using several theoretical models such as Grunberg-Nissan, Katti and Chaudhri, Hind, Tamura and Kurata, Heric and Eyring-Margules. The experimentally measured viscosities of the studied mixtures were analysed on the basis of above said theoretical models.

Keywords: Viscosity, DEHPA, Apolar Liquids, Molecular Interaction, Theoretical Models

I. INTRODUCTION

Viscometric study of liquid mixtures plays an important role in engineering such as mass transfer, heat transfer and fluid flow [1, 2]. In extraction process di (2 ethyl hexyl) phosphoric acid (DEHPA) is used commercially to recover cobalt, zinc, uranium, plutonium, vanadium and other lanthanide /actinide elements from their respective ores [3 - 5]. The extraction efficacy of an extractant increases with the addition of suitable diluents / modifiers [5, 6]. The viscosity measurements is also helpful to find its application in characterizing aspects of mixture behavior in extraction process. In continuation of our earlier work [7], we are extending our present study on theoretical values of viscosity of the three binary mixtures using Grunberg Nissan, Katti and Chaudhri, Hind, Tamura and Kurata, Heric and Eyring-

Margules. The theoretical viscosity values were correlated with those experimental values. The relative merits of these models for the studied liquid mixtures was verified in terms of standard deviations.

II. METHODS AND MATERIAL

The chemicals used in this present investigation were of analytical reagent (AR) grade and obtained from E-Merck chemicals Ltd India. The procedure of measurement of viscosity is same as reported in earlier works [8, 9] at temperature 303.15K and pressure 0.1MPa. All samples were kept in air tight bottles and adequate precautions were taken to avoid evaporation and contamination. Temperature of all samples was maintained to an accuracy of 0.1K in an electronically controlled thermostatic waterbath.

Acoustic Response in the Binary Liquid Mixtures of an Organophosphoric Compound with Cyclohexane and Dioxane

Ranjeeta Rath¹, Rajeswari Panda¹, Biswajit Dalai^{*1}, Sarat Kumar Dash²

¹Department of BSH, Gandhi Institute of Engineering and Technology (GIET), Gunupur, Odisha, India

*biswajit_dalai@rediffmail.com

²Department of Physics, Regional Institute of Education (NCERT), Bhubaneswar, Odisha, India

Skdash59@yahoo.com

ABSTRACT

Ultrasonic velocity (U) of binary mixtures of an organophosphoric compound (DEHPA) with Cyclohexane and Dioxane including those of pure liquids were measured over entire composition range of DEHPA at 303.15K and 0.1MPa. The theoretical values of ultrasonic velocity have been calculated using various empirical relations and models, viz. Impedance dependence relation, Nomoto's relation, Danusso model, Junjie's relation and Van Dael-Vangeel's ideal mixing relation. The computed values of ultrasonic velocity are compared with the corresponding experimental data by applying Chi-Square test and average percentage error (APE) to assess the validity of all the above theories.

Keywords: Ultrasonic Velocity, Binary Mixtures, Theoretical Models, APE, Chi-Square Test

I. INTRODUCTION

Acoustic properties of binary organic liquid mixtures have been investigated by a number of workers [1-4] over the past several decades. Such studies have great relevance in many areas of applied and theoretical research works. In many industrial applications liquid mixtures are used in processing and product formulations. It also provide a better knowledge in understanding molecular interaction between unlike molecules and structural behavior of molecules.

The organophosphorous compound Di - (2-ethylhexyl) phosphoric acid (DEHPA) is widely used as an extractant for the extraction of actinides, lanthanides and rare earth metals [5-7]. In continuation of our earlier work [8-10], we propose to extend our investigation to cyclohexane and dioxane if it could be used as better diluent with DEHPA for extraction process. DEHPA is a polar liquid whereas both cyclohexane and dioxane are apolar liquids

with cyclic structures. The ultrasonic velocity in binary mixtures of DEHPA with cyclohexane and dioxane were measured at 303.15K over the entire composition range of DEHPA. The experimental velocities have been compared with theoretically computed velocities by using various theoretical relations [11-15], viz. Impedance dependence relation, Nomoto's relation, Danusso model, Junjie's relation and Van Dael-Vangeel's ideal mixing relation. The relative merits of these relations have been discussed in terms of Chi-Square test and average percentage error (APE).

II. METHODS AND MATERIAL

All Chemicals, used in this investigation, viz. DEHPA ($C_{16}H_{35}O_4P$), Cyclohexane (C_6H_{12}) and Dioxane ($C_4H_8O_2$), are of AR grade. All samples were prepared by weighing liquids in specially designed glass stoppered airtight bottles, taking extreme precautions to avoid evaporation and atmospheric moisture. The mass

Dash
21-04-23
मार्गदर्शक/प्रिन्सिपल
रेजीयनल शिक्षा सं-
स्थान
Regional Institute of
Education
Bhubaneswar

*

2017

VOLUME: 9

NUMBER: 1

JUNE '17

INTJECSE

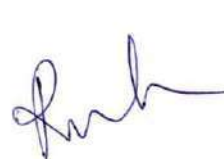
International Journal of
Early Childhood Special Education

ISSN: 1308-5581


प्राचार्य/ PRINCIPAL
क्षेत्रीय शिक्षा संस्थान
Regional Institute of Education
भुवनेश्वर / Bhubaneswar-751022

CONTENTS

- 1-16 *The Terms Used in Gifted and Talented Education in Turkey, Relevant Legal Framework and Educational Practices*
Esra Omeroglu, Rabia Sarikaya, H. Elif Daglioglu, Ebru Kilic Cakmak, Sercin Karatas, Safiye Arici Bulut, M. Gulsah Sahin, Osman Sabanci, Volkan Kukul, Aysun Turupcu Dogan, Osman Basit
- 17-30 *Father Involvement, Early Intervention Program and Well-being of Children with Special Needs*
Mohamad Ilmee Mohamad Zin, Mariani Md Nor
- 31-33 *Family-Centered Early Intervention: Supporting Infants and Toddlers in Natural Environments by Sharon A. Raver & Dana C. Childress (Book Review)*
Binnur Yildirim Hacıbrahimoglu
- 34-49 *Arithmetic School Readiness of Preschoolers with Hearing Impairment*
Asha Yathiraj, Gowramma Ittira Poovaiah
- 50-65 *What is Special in Special Education from the Inclusive Perspective?*
Juliene Madureira Ferreira



प्राचार्य/ PRINCIPAL
क्षेत्रीय शिक्षा संस्थान
Regional Institute of Education
भुवनेश्वर / Bhubaneswar-751022

International Journal of Scientific Research and Reviews

Stress Management In Women: A Case Study In Temple City of Bhubaneswar

Das Sanjeeb Kumar

¹Department of Botany, Regional Institute of Education (NCERT), Achrayavihar,
Bhubaneswar-751022

Email : sanjeebdas75@yahoo.com/ dassanjeebbotany75@gmail.com

ABSTRACT:

Stress management is pre-determined strategy for coping with psychological or emotional turmoil. Today women in the society have shown their expertise, proficiency and talents in different disciplines. The role of women in our society has changed significantly in the past three decades. Women and girls have many more opportunities and face different challenges. Women who have achieved great stature in government, industry, sports and the media have become a familiar sight. The traditional role of women is to be responsible for the efficient running of her home, it is something we need to be aware of as an additional expectation made from her. Working women have dual roles to play in the family as well as in the place of work. Hence there is a need for working women to cope up with the coming challenges where she has to justify her role in both places which creates a lot of stress in them. Therefore, every working woman should develop abilities for stress management to lead a happy and successful life. The present study is a survey study which involves a sample of 100 married women: 50 working and 50 non-working from which deductions will be made.

KEY WORDS: Stress Management, Married Working Women, Married Non-working Women

*** Corresponding Author**

Sanjeeb Kumar Das

Department of Botany,

Regional Institute of Education (NCERT),

Sachivalaya Marg, Achrayavihar,

Bhubaneswar, India- 751022

Mo: 9437194035

E-mail: sanjeebdas75@yahoo.com/ dassanjeebbotany75@gmail.com

Sanjeeb

PRINCIPAL
Regional Institute of Education
Bhubaneswar-751022

Volume VII, No. 2

ISSN No. 2249-3794

ANWESHAN:
JOURNAL OF EDUCATION
(A Bi-annual Interdisciplinary
Research Journal of Education)



SR PUBLISHING HOUSE
NEW DELHI-110013


प्राचार्य/ PRINCIPAL
क्षेत्रीय शिक्षा संस्थान
Regional Institute of Education
भुवनेश्वर/ Bhubaneswar-751022

Contents

1. The Legal Rights of the Disabled in India: A Review <i>Dr. Ashok Parasar, Mr. Ashok Kumar Patel & Mr. Varun Kumar</i>	1
2. A Study on Behavioural Problems of Primary School Children <i>Srinivasa Reddy</i>	6
3. General Well Being of Adolescents in Relation to their Gender and Residential Status <i>Sunita</i>	25
4. Impact of Extensive Reading Training on Development of Reading Comprehension of Learners with Learning Difficulties <i>Ayesha Bibi & Dr. Jayanti Pujari</i>	40
5. Creating Barrier Free Environment for Children with Special Needs (Divyangjan) <i>Mr. Ratnesh Kumar Singh</i>	48
6. Professional Ethics of High School Teachers in Puducherry Region <i>Dr. G. Kumaravelu</i>	56
7. Exclusionary Factors in Availing Various Government Benefits and Schemes by Parents of Children with Multiple Disabilities: A analysis <i>Rajesh Ramachandran, Dr. Himangshu Das</i>	62
8. Contextual Factors that Enhance Reflective Practice of Science Teachers <i>Prof. B N Panda & Narender Singh</i>	77
9. Systemic Reform of Teacher Education in India: Issues and Challenges <i>Dr. Gowramma IP & Dr.Elizabeth Gangmei</i>	81
10. Education of Girls in Multicultural Society <i>Vishwas</i>	96

 
प्राचार्य/ PRINCIPAL
क्षेत्रीय शिक्षा संस्थान
Regional Institute of Education
भुवनेश्वर / Bhubaneswar-751022

Systemic Reform of Teacher Education in India: Issues and Challenges

*Dr. Gowramma IP

**Dr.Elizabeth Gangmei

Abstract

Over the last decades, teachers have often been identified as 'key' players for the improvement of education system, as such teacher education programme continued to be a major concern globally as well as in India. It is also well acknowledged that teacher education system is the fulcrum which must support tapping and nurturing manpower potentiality in the field of education. Moreover, it is generally agreed that knowledge societies demand teachers who can think critically, reflective practitioner, and work collaboratively, which is the product of a robust system of teacher preparation. Thus, to bring changes and transformations in the system, it is pertinent to identify the issues, analysing the root cause and find ways of addressing them. Thus, the main focus of the paper is to comprehensively discuss the issues and challenges and give suggestion for effective practices in teacher education programme in India.

Keywords: teacher education, systemic concerns, issues & challenges

Introduction

Teachers are central to the enterprise of education and there is no dispute to the fact that the availability of the well trained teachers and teacher educators are vital to the school improvement efforts. As such, over the years, recommendations of policy documents and commission reports have reiterated to strengthen teacher education for preparing teachers as active agents of social change. Teachers' preparation and development is a significant contributor towards efforts to equitably improve access to quality education as observed by the Joint Review Mission – Teacher Education (JRM – TE, 2013) constituted by the Ministry of Human Resource Development. The present paper examines the teacher education scenario in India which was also addressed by UNESCO world education report,

* Professor in Education RIE, Bhubaneswar, gowriip@yahoo.co.in

** Assistant professor in Education RIE, Bhubaneswar, gangmeie@yahoo.com



प्राचार्य/ PRINCIPAL
क्षेत्रीय शिक्षा संस्थान
Regional Institute of Education
भुवनेश्वर/ Bhubaneswar

* 2017
ISSN 0019-4700 (Print)
ISSN 0972-561X (Online)

Indian Educational Review

Volume 55

Number 2

July 2017

RESEARCH PAPERS

Impact of Teacher Training on Performance in English at the Primary Level: An Untold Story of West Bengal

Ideal Teacher Qualities as Perceived by High-Ability Students from Low Socio-Economic Backgrounds: A Study based in West Bengal

Does School Leadership Matter for Student Learning in India? A Case Study of Sikkim

Mainstreaming Out of School Children with Community Support: A Success Story

Representation of Dalits in Higher Education: A Case Study of Kajipur Village in Uttar Pradesh

In-Service Teacher Education Programmes: Issues and Challenges

An Analysis of Students' Drawing and Labelling Skills in Science at the Elementary Level



राष्ट्रीय शैक्षिक अनुसंधान और प्रशिक्षण परिषद्
NATIONAL COUNCIL OF EDUCATIONAL RESEARCH AND TRAINING

प्रधान/ PRINCIPAL
क्षेत्रीय शिक्षा संस्थान
Regional Institute of Education
Indraprastha-75



ISSN 0019-4700 (Print)
ISSN 0972-561X (Online)

HALF-YEARLY JOURNAL OF EDUCATIONAL RESEARCH

INDIAN EDUCATIONAL REVIEW

Volume 55

Number 2

July 2017

CONTENTS

EDITORIAL	3
RESEARCH PAPERS	
Impact of Teacher Training on Performance in English at the Primary Level: An Untold Story of West Bengal DEBARSHI MANDAL AND DEBASISH SARKAR	7
Ideal Teacher Qualities as Perceived by High-Ability Students from Low Socio-Economic Backgrounds: A Study based in West Bengal PAROMITA ROY AND SURABHI DASGUPTA	19
Does School Leadership Matter for Student Learning in India? A Case Study of Sikkim N. MYTHILI	34
Mainstreaming Out of School Children with Community Support: A Success Story KAMAL KANTA TRIPATHY	64
Representation of Dalits in Higher Education: A Case Study of Kajipur Village in Uttar Pradesh SUBHASH KUMAR AND NOKLENYANGLA	77
In-Service Teacher Education Programmes: Issues and Challenges HIMANSHI PIPLANI AND SHRUTI CHOPRA	98
<u>An Analysis of Students' Drawing and Labelling Skills in Science at the Elementary Level</u> DEBARATI DHAR AND GOWRAMMA I.P.	108
SUMMARY OF ERIC PROJECTS	
A Study on Implementation of Inclusive Education at the Elementary Level in the North-Eastern Region BASANSY KHARLUKHI	124
Effect of Therapeutic Story Making Intervention on Reading Skills and Academic Resilience NARAYANAN ANNALAKSHMI	132



प्रचार्य/PRINCIPAL
क्षेत्रीय शिक्षण संस्थान
Regional Institute of Education
भुवनेश्वर/Bhubaneswar
751002

An Analysis of Students' Drawing and Labelling Skills in Science at the Elementary Level

DEBARATI DHAR* AND GOWRAMMA I.P.**

ABSTRACT

Science, with its emphasis on facts and knowledge, is incomplete without skills like observation, interpretation, and analysis. One of the media through which they are expressed is drawing and labelling. There is especially unique need of drawing and labelling skills in biology because of the variety, complexity and intricacy of the diagram and the role it has on developing the concept. The purpose of this paper is to investigate and analyse the strengths and weaknesses of students in drawing and labelling skills and to determine the improvement in these skills after implementing intervention. Class VII students constituted the target population and were selected using purposive sampling. Both exploratory as well as experimental research designs were used. A pre-test post-test single group design was adopted. The data obtained was analysed using both descriptive and inferential statistics. Results indicated that majority of the respondents lacked all the 10 drawing and labelling skills tested. This casts doubt on the students' understanding of biological concepts and hence their overall performance in the subject. After planned intervention, though there was a gain in skills, significant variation in gain percentage was observed indicating individual uniqueness. This suggests the need for using a variety of approaches to develop drawing skills.

Introduction

There are many skills that are required for learning science. The important among them are skills of observation, problem solving, drawing and labelling, analysis, synthesis and creativity. One of the

* Student of M.Sc in Zoology, Ranchi University, Ranchi, Jharkhand, India. (e-mail: dr.debarati@rediffmail.com)

** Associate Professor, Regional Institute of Education, Bhubaneswar, Odisha, India. (e-mail: gowriip@yahoo.co.in)

Author Note

This article is based on the Dissertation by Debarati Dhar, as an M.Ed student in the Department of Education, Regional Institute of Education, Bhubaneswar in the year 2014-15, under the supervision of Dr. Gowramma I.P.


माध्यम / PRINCIPAL
क्षेत्रीय शिक्षा संस्थान
Regional Institute of Education
भुवनेश्वर / Bhubaneswar-751022

2018

Volume VII, No. 1

ISSN No. 2249-3794

ANWESHAN:
JOURNAL OF EDUCATION
(A Bi-annual Interdisciplinary
Research Journal of Education)



SR PUBLISHING HOUSE
NEW DELHI-110013

[Signature]
प्रचार्य/ PRINCIPAL
क्षेत्रीय शिक्षा संस्थान
Regional Institute of Education
भुवनेश्वर / Bhubaneswar-751022

Journal of All India Association for Educational Research
Vol.29, No.2, pp.83-100, December 2017

DOES KNOWLEDGE OF MATHEMATICAL LANGUAGE PLAY A ROLE IN MATHEMATICAL ABILITY? -A PRELIMINARY STUDY

**Prema K.S.Rao
Ramaa S.
Gowramma I. P.**

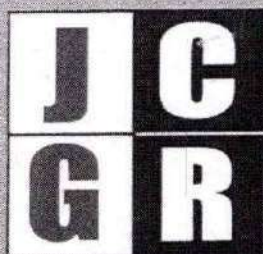
Mathematics has always been associated with knowledge of digits and number words. Limited thought is given to the language system that binds digits and number words for meaningful computation. The lexicons of mathematics such as series of alphabets, numbers and digits become meaningless unless semantics or the meaning component is loaded into mathematical problems. Therefore, language skills related to reading, writing and comprehension are linked to performance in mathematics. In order to understand the role of language in mathematical lexicons, tests were developed for math vocabulary reading and math language incorporating general language vocabulary and syntax. The tests were administered on 47 children studying in IV Grade with Kannada as the medium of instruction. Results indicated poor performance by children on tasks where the general language vocabulary terms are shared between math and language. The study emphasizes the importance of teaching meaning of the mathematical lexicons in the classroom.

INTRODUCTION

Mathematics is often characterized as the language of science. As early as 1975, the superiority of mathematics as a language system is supported by the views of Beilin, supported by Lamb (1980) who attribute successful performance in mathematics to the ability to represent abstract ideas using symbols. Mathematical text reading requires two salient components of language of mathematics- *understanding mathematical*

 
प्रार्थी/ PRINCIPAL
क्षेत्रीय शिक्षा संस्थान
Regional Institute of Education
भुवनेश्वर / Bhubaneswar-751022

20/0



ISSN 0970-1346

Journal of Community Guidance & Research



(UGC Approved Social Science Journal)

An
Interdisciplinary
Journal
Published
Every Four Months

Vol. 35

No. 2

July 2018

 
प्रचार्य/ PRINCIPAL
क्षेत्रीय शिक्षा संस्थान
Regional Institute of Education
मुंबई-751022

Contents

- Prevention of HIV/AIDS: A Psychological Perspective on the Role of Social Capital (A Review of Research)
– Kailash Jandu ... 191
- Is Meditation an Answer to the Psychosomatic Diseases? (An Overview of Research)
– Srinija Giduturi ... 214
- Effect of the Introduction of IT Interventions on Crime in Hyderabad City
– M. Mahender Reddy, IPS ... 228
- Effect of an Intervention Programme on Awareness Regarding 'Rights of Persons with Disabilities Act, 2016' among Special Teachers of Haryana
– Sushil Kumar, Sandeep Kumar ... 253
- Workplace Friendship and Psychological Wellbeing among Executives
– P. Subhashini, Surendra Kumar Yadla ... 263
- Stress Management Techniques for Better Quality of Life of the Diabetic Patients
– Jamsheela. A ... 274
- Native and Non-native Dogmas as Precursors of Value Education: Indian Teacher Educators' Attitude towards Development and Implementation of Value Education in Teacher Education
– Sankaranarayanan Paleeri ... 286
- A Study on Anemia among the Tea Gardens' Women of Assam
– Lukima Saikia ... 302
- Development and Validation of Mental Hygiene Inventory
– Meenakshi Girdhar ... 308
- The Role of Peers in Scaffolding the Children with Learning Difficulties in Mathematics
– Jyothi Victoria, Padmaja ... 320
- ✓ ● Performance of School Management and Development Committees towards Implementation of the 'Rashtriya Madhyamik Siksha Abhiyan'
– Dipak Bhattacharya, Gowramma I.P. ... 328
- Attitude towards the Need of Guidance and Counseling of Higher Secondary Teachers
– G. Kumaravelu ... 344



 प्राचार्य/ PRINCIPAL
 क्षेत्रीय शिक्षा संस्थान
 Regional Institute of Education
 भुवनेश्वर/ Bhubaneswar-751022

PERFORMANCE OF SCHOOL MANAGEMENT AND DEVELOPMENT COMMITTEES TOWARDS IMPLEMENTATION OF THE 'RASHTRIYA MADHYAMIK SIKSHA ABHIYAN'

Dipak Bhattacharya, Gowramma I. P.

Abstract

Rashtriya Madhyamik Shiksha Abhiyan (RMSA) was launched in March, 2009 with the objective to enhance access, quality and equity in secondary education. The objective of the study was to examine the awareness and performance of School Management and Development Committee (SMDC) in achieving this objective through implementation of the RMSA. The study was conducted in 20 secondary schools of Contai Sub-Division of West Bengal by using descriptive survey method. Self-developed questionnaire for head-teachers, teachers and interview schedule for parents were used for collection of data. The data were analyzed by using frequency and percentage. The study found lack of awareness and poor participation in prescribed activities of the school being prevalent among the members of SMDC. The results revealed that percentage of members attending to tasks related to monitoring and supervision to be higher compared to tasks related to academic areas. Overall the access and equity related activities were better performed by the members neglecting the activities towards enhancing quality in secondary education.

Introduction

Secondary education is a crucial stage in the educational hierarchy as it prepares the students for higher education and also for

the world of work. The vision for secondary education is to make good quality education available, accessible and affordable to all young persons in the age group of

□ *Dipak Bhattacharya is a Lecturer, Radhanagar Government P.T.I., Howrah, West Bengal.*

□ *Dr. Gowramma I.P. is Professor, Regional Institute of Education (RIE), Bhubaneswar.*

© Journal of Community Guidance & Research


Principal
क्षेत्रीय शिक्षा संस्थान
Regional Institute of Education
भुवनेश्वर / Bhubaneswar

*

2010

ISSN 0019-4700 (Print)
ISSN 0972-561X (Online)

Indian Educational Review

Volume 56

Number 2

July 2018

RESEARCH REVIEW ARTICLE

Research in Education of Children with Disabilities

RESEARCH PAPERS

How Distant is 'Inclusion'? A Study of Delhi School Teachers

Effect of Gender, Region and Type of School on Social, Cognitive and Affective Skills of Higher Secondary School Students



राष्ट्रीय शैक्षिक अनुसंधान और प्रशिक्षण परिषद्
NATIONAL COUNCIL OF EDUCATIONAL RESEARCH AND TRAINING


Principal
Regional Institute of Education
भुवनेश्वर / Bhubaneswar-751022



ISSN 0019-4700 (Print)
ISSN 0972-561X (Online)

HALF-YEARLY JOURNAL OF EDUCATIONAL RESEARCH

INDIAN EDUCATIONAL REVIEW

Volume 56

Number 2

July 2018

CONTENTS

EDITORIAL	3
RESEARCH REVIEW ARTICLE	
Research in Education of Children with Disabilities ITTIRA POOVAIAH, GOWRAMMA, ELIZABETH GANGMEI, AND LAXMIDHAR BEHERA	7
RESEARCH PAPERS	
How Distant is 'Inclusion?': A Study of Delhi School Teachers YUKTI SHARMA	94
Effect of Gender, Region and Type of School on Social, Cognitive and Affective Skills of Higher Secondary School Students SHABANA AND KHALIDA ALAM	114
Appendix	129

प्राचार्य/ PRINCIPAL
क्षेत्रीय शिक्षा संस्थान
Regional Institute of Education
भुवनेश्वर / Bhubaneswar

Research Review Article

Research in Education of Children with Disabilities

ITTIRA POOVAIAH GOWRAMMA*, ELIZABETH GANGMEI**

AND LAXMIDHAR BEHERA***

ABSTRACT

The review presents a systematic and comprehensive framework concerning the state of research in the field of education of children with disability/disabilities (CwD/CwDs) from the year 2000 to 2017, with a view to identify the key areas and generate questions for future research. Published studies, doctoral dissertations and institutional research were considered for mapping the current status. The analysis indicates that the area of study is expanding reflecting tremendous growth, research percolating various aspects of disability with a focus on empowering them through education. The time following the global flagship of Education for All (EFA) with a rights based approach for disability has made significant contribution to expansion of research ideas and scope. Fostering learning through various strategies, understanding the relationship of psychosocial factors in development and learning, academic performance, impact of significant people in development, and supporting learning through material development emerged as prominent choice of researchers. However, the analysis also shows that the research still seems to be considering disability as a deficit, and the need for shifting the focus to capacity approach by magnifying personal capabilities and dignity of CwD is strongly felt. There is paucity of researches based on critical perspective, serving both informative and transformative

* Professor, Regional Institute of Education, Bhubaneswar (e-mail: gowriip@yahoo.co.in)

** Assistant Professor, Regional Institute of Education, Bhubaneswar (e-mail: gangmeie@yahoo.com)

*** Associate Professor, Regional Institute of Education, Bhubaneswar (e-mail: behera17@yahoo.co.in)

Acknowledgment: The support received from Gautam Kumar and Tanushree Mohanty, Junior Project Fellows is acknowledged.


प्राचार्य/ PRINCIPAL
क्षेत्रीय शिक्षा संस्थान
Regional Institute of Education
भुवनेश्वर/ Bhubaneswar-751022