A Report

NATIONAL SEMINAR ON ECONOMIC CURRICULUM IN SCHOOLS

EMERGING TRENDS AND CHALLENGES

25 & 26 February 2014

Organised by

Department of Education in Social Sciences

राष्ट्रीय शैक्षिक अनुसंधान और प्रशिक्षण परिषद्

National Council of Educational Research and Training

NATIONAL SEMINAR
ON
ECONOMIC CURRICULUM
IN SCHOOLS
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Preface

The Department of Education in Social Sciences (DESS) had organised a two day National Seminar on Economics Curriculum in Schools: Emerging Trends and challenges. The Seminar was interactive and participants were encouraged to raise questions after every sessions. Efforts were made to deliberate upon concrete challenges like use of mathematics in economics, integration of content and pedagogy, addressing national curricular concern like gender and marginalised group. The papers presented in seminar also aimed to find out how economics across the country is taught.

The department thus endeavours to bring forth the report hoping that it's rich and thought provoking content will contribute towards the growth of economic education in schools. The report will focus upon main ideas contained in the seminar.

We have three main aim of presenting the report: Share the papers presented in the seminar and lay the basis for critical dialogues among subject and curriculum expert, policy makers, and school teachers. Secondly, we want to focus upon the challenges that are faced by the teachers & students in the classroom. Thirdly, the feedback and suggestion received in the seminar will help to promote economics as subject especially for all streams of learners at the higher secondary stage.

The report includes seven sessions where final paper presentation was made, discussion among the participants were undertaken. Poster sessions was important attraction of the seminar.

Comments and suggestions are welcome.

Professor Parvin Sinclair

Director

Acknowledgements

We extend our thanks to the Council for funding the event. The generous provision enabled us to organise the events and enabled the participation of large number of subject experts, practising school teachers, pedagogues who would otherwise not be able to join us.

We would like to thank all those who presented the paper in the seminar and participated in the poster session. The input received from various speakers, discussions and questions resulted in-depth analysis of strength & weaknesses of economics education in school. The feedback and suggestion received in the seminar will help us to review the curriculum, syllabus and textbook

The Department will place the report on the website hoping that its rich thought provoking content will contribute towards deliberation by curriculum developers, policy makers, college & School teacher.

We would like to thank our Director Professor Pravin Sinclair, Joint director Professor B. K. Tripathi for their support and advice towards organisation of the seminar. We extend thanks to all the faculty members of DESS who worked towards the successful completion of the seminar.

We appreciate the effort of Rashmi, JPF, Mahinder Mahto, DTP operator, Amjad Hussain, DTP operator, Meenakshi, DTP operator, Pooja, DTP operator,Rekha Sharma, LDC Manish Rai, LDC who helped us in typing the various material related to seminar

Saroj Yadav

Head DESS

CONTENTS

RECOMMENDATIONS OF THE SEMINAR

- Economics should be introduced from class VI in social sciences at school level. Though there should be vertical as well as horizontal linkage in the syllabi.
- At secondary level syllabus should be designed in such a manner that it also increases financial literacy among students.
- Keeping in view inclusive growth , community participation(including members from marginalised group) must be given emphasis in the syllabi
- Teachers' Manual and handbook should be developed by NCERT using mathematical applications in economics.
- The concern of gender and marginalised groups should be reflected in the economics curriculum.
- Recommendation from NCERT should be sent to CBSE and all State government education departments that if Post Graduate Teacher in Economics is available in the school then s/he must teach economics at secondary level also.
- There is need to review the Structure of papers at the higher secondary level.

1 CHAPTER INTRODUCTION

The growing popularity of the discipline of economics is evidenced by substantial increase in enrollment of students in this discipline in both public and private schools across all states. The seventh all India educational survey, 2002, revealed that 38 lakhs students opted for economics as an optional subject in 29,300 higher secondary schools and 2100 degree colleges in India. At the school level, the subject is popular among students of all streams be it humanities, commerce or natural sciences. Currently the subject is being offered by more than forty Examination Boards within the country and a number of International boards as well such as The Cambridge and The International Baccalaureate. Over the last few decades economics has been a preferred choice among students as evidenced by increase in demand for it even at the university stage also.

These pertain to reassessment of several such issues as objectives of teaching the subject, the course content, its vertical and horizontal linkages, transaction of curriculum in the classroom, dealing with student heterogeneity both in dissemination of knowledge and assessment, training of teachers, research and pedagogies for active teaching learning in the classroom.

Keeping this in mind, National Council of Educational Research and Training (NCERT) proposes to organize a two day seminar to initiate a dialogue aimed at addressing the following questions:

- What should be the likely outcome of teaching learning of economics at the school level?
- How should course content address the heterogeneity among the students?
- How to promote innovations among the practicing school teachers?
- How should assessment help in holistic development of the child
- Introducing Economics for school students

Economic education at the school level has had its own share of controversy beginning a chequered history since its introduction in the school. There has been debate regarding introduction of subject in the school. When economics was introduced as a school subject in U.K in 1950s, the move faced protest from professional economists such as Lord Robbins who argued that it might be too difficult for school students. If diluted, the superficial understanding provided at this stage may need to be untaught when the student goes to the University. Other economists justified the inclusion of the subject on the ground of 'Good citizenship'. In order to play an effective part in decision making, they argued, citizens need to have an adequate understanding of an issue. Education philosopher such as Hirst argued for inclusion of economics in the school curriculum as he believed that the subject had concepts, a distinct logical structure arising from a unique conceptual framework within which experience can be understood in its own distinctive methodology, which made it unique among other social sciences. As such, the subject had the potential to enable students to build capacity for reasoning and logical expression of ideas. In addition it may help to develop such skills as creative imagination, a sense of judgement, critical thinking, and ability to communication among learners.

Analysing the syllabus from the upper primary to higher secondary stage There needs to be a study on vertical and horizontal linkage of the subject. Economics has been introduced in class VI and forms composite part of social sciences till class X. The subject has been introduced as an

elective subject at the higher secondary stage. Does the topic included in the lower class provide a support to the topic at the higher secondary stage? Or the introduction of the topic stands as independent of each other? How should the topics be introduced at each stage to provide or encourage in the logical understanding of the subject?

Problems faced by the Practising School Teachers

As per the guidelines of National Curriculum Framework 2005 (NCF 2005) economics has been introduced since class VI as a composite part of social sciences. At this stage learners have to be familiar with four components of social sciences i.e. history, political science, geography and economics. The concerned teachers without economics background feel uncomfortable to handle the students in the classroom. Teaching economics at the higher secondary stage is a challenge for even the best teachers, as it requires transmission of knowledge as well as skill for students who are ready to leave high school to either enter into workforce or pursue higher education. The criterion success imparted through teaching learning of the subject should enable learners to understand the working of an economy, appreciate what economic questions are and how economists think, and be able to take intelligent interests in the news of the current affairs as reported on television, radio and in the newspaper. Considering the nature of the subject, the teachers need to be oriented for effective transaction of the subject for that particular class. For teachers without strong background in economics, requires orientation to becoming familiar with the principals, theories and models used in economics. For teachers with mathematical background in economics requires adapting knowledge to the interest level of the students.

Pedagogies in the teaching learning of the subject

Interactive learning is important in economic education as it helps students to apply principles, theories to the understanding of real life situations and take decisions to encounter problems. What incentive should induce instructors to adopt new pedagogies and improve their teachings? What strategies are effective for instructor to adopt as alternative to chalk and board and improve their teaching? To what extent approaches like case studies, problem based learning, concept mapping needs serious investigations by economic teachers? A further implication necessitates sustained activity for further material development.

Analysing the textbooks and methods for teaching learning the subject

As the subject is opted by large number of students and inclusion of subjects by more than 40 boards in our country gave an opportunity to publishers, and other organizations to produce a variety of instructional material to meet the growing needs of the market? There is a need to study whether the publisher made an effort to provide enrichment material to enable students to critically reflect on a topic or provide in capsule for students to memories the theories. There is even need to find out whether such publishers dominate the boards by providing various incentives to question setters? Infact the publishers should make provision for good material which has long term impact upon students learning and advocate different teaching strategies other than chalk and talk methods.

Ensure collaboration between Secondary and University teachers

As evident economics is a popular subject among school students which automatically have added to the importance of the subject at the un iversity stage also. Many of the universities have

refused to recognize teaching learning of economics at the higher secondary stage. They hold that at this stage the concepts have been diluted to the extent that students have to unlearn in their first stage itself. Schools autho rities, too, appear discontented with the poor performance of teachers in the classroom. They are permitted to teach after completing their course work in universities. Their needs a collaboration between school teachers and university teachers to establish a horizontal linkage in terms of syllabus, course content and pedagogies for effective handling of the subject at two stages.

How the subject should be treated

As already discussed some students join workforce while few others pursue economics at the higher education level. There should be discussion on what economics should be taught to these students at the higher secondary stage. Should there be one course for two groups of students? Should economics be introduced as a vocational subject for those who aspires to join the market? On the other hand, is there a need to provide students with a solid base who intend to proceed as an academic discipline in the universities

Mathematisation of the Subject

At the higher stage economics have been mathematised as they have to deal with human component of decision making. Mathematics used in the form of equation, principles simplifies the content and helps in making the phenomenon/events predictable for the future. The symbols or equations used are like language which simplifies the abstract concepts for the learners. On analyzing the worksheets it was clear that student's memories definition of concepts without understanding how it can be applied. Although the mathematics used in such calculations has been learnt by the students till Class X. Some students have erred on the part of calculations while few others have memorized and shown success on the ground of mechanical interpretations. There needs discussion whether economics should be made descriptive or some quantification with the mathematics already learnt by the students be included in the textbooks.

Heterogeneous group of students

Students belonging to the three streams i.e humanities, commerce and science differ in terms of their capacity, aptitude and interest in the subject. Diversity among the learners has to be addressed in terms of transaction of curriculum in the classroom. There is a need for deliberation to address the heterogeneity among the learners? Should the students belonging to three streams be treated at par with each other?

Enabling environment

There is a need to study a change in the policy document over a period of time. Has curriculum been a part of larger societal change, especially seen in terms of changing nature of the world and its dynamics? There is also a need to study whether curriculum endeavours to meet national standard, reduce gender, social and economic disparities.

Its impact on the job market

How do we ensure that the teaching learning of the subject have practical implications in the market. The subject talks about consumer behavior, producer behavior in the economy. Different

kinds of markets are being discussed where the situation of optimum profit is being achieved. On analyzing the market situation in our country, it was found that the country had to import toys for children, water gun to be used at the time of holi, statue of Ganesh to be worshipped in Diwali. Does this mean the subject is too, theoretical to have practical implications in the market? Here, It is necessary to point out that 93% of Indian workforce are employed in the informal sector. Can the teaching learning of the subject, which incorporates various component of the market, be effective in generating employment in the market?

Liberalisation Vs Protection

Should we look upon ourselves and say economic education did not empower us to compete in the market? We can also say the objective of teaching economics is not to enable its learners compete in the market. The other way of addressing the problem necessitates reform in the market with specific reference to rigid labour laws, investment in power sector, road, transport and removal of inspector raj. When would the young population be dynamic enough to face adversities in the market? Can the teaching learning of the subject empower the students to understand the economy, thereby, work out as productive citizen of the economy. There is another alternative where we can suggest Government to withdraw its liberalization policy so as to minimize the fear of competition in the market and train its people to produce things needed in our economy.

Inculcating skills through the teaching learning of the subject

Since the man is born not like the ant, equipped with the habits and skills necessary for survival, but culturally plastic he has to be educated into particular bodies of knowledge. The skills, the values and the personal group relationships that different people have varies from subject to subject across the country. There is a need of discussion whether teaching learning of the subject has any relevance for the acquisition of the skill. Can these skills be imparted through the transaction of the economics curriculum? What makes increasing number of students opt for the subject?

Making Teaching Learning of Economics more acceptable to the girls

Curriculum reform should ensure to include equal and positive representation and images of women. These curricular reforms should address the quality education so that it act as an incentive for parents to send their daughters to schools. In terms of classroom culture the teachers must provide ample opportunity to girls to voice their opinion in the economics classroom. Does required action for curriculum reform necessitates incorporation of gender as a topic or introduction of subject like gender economics? We need to think whether mere provision of female teachers, curricular reform is enough or we need to introduce new discipline like gender economics?

Addressing gender problem in the Kasturbha Gandhi Balika Vidyalaya(KGBV)

The books have been developed for those girls who have been dropped out of the formal schooling system. They can join the school even after the discontinuation in their education and use the books prepared by KGBV. Economics has not been included in their curriculum. There is a need to think how to negotiate with the curriculum and include the component of economics in it? What kind of pedagogy advocated through the teaching learning of the subject be helpful in including gender sensitivity, and build confidence, self esteem among the girls so that they are able to face challenges in life. What kind of reform introduced in the subject to enable girls to get mainstreamed in education.

Understanding Marginalization

Education for all perspectives has varied in their approach to marginalization. The Jomtien Declaration incorporated an explicit commitment to 'under served groups' including the poor, street and working children, rural and remote populations, nomad and migrants workers. The twelth five year plan (2012-17) focus on inclusive growth. How can teaching learning of the subject reflect upon the concern of the marginalized groups?

Vertical linkages in the subject

There is a need to reflect upon the linkages in syllabus developed from upper primary stage to higher secondary stage. Has the syllabus been designed to promote gradual learning of the subject? Does the course content in class XI provides support to the understanding of theories, principles and concept included in class XII economics.

Assessment

It is a continuous formative process that constitutes an integral part of teaching and learning. This can be classified into formal and informal assessment. The teachers need to understand the assessment standards thoroughly to determine the depth for the grade in questions. What knowledge the learners will have to understand? What skill the learners will have to acquire through the teaching learning of the subject? What kind of issues should the learners analyse in his peer groups?

Training

There is a need for teacher training before and after joining the institution. The practicing school teachers should be well trained to handle the subject in the classroom. The training is required to make teachers receptive to new ideas particularly with the change in the global economy. There has been a paradigm shift from a teacher centered approach to a learner centered approach. The emphasis on learning also changes the function of learning. At the same time programme that encourages teachers to adapt new methods for teaching learning in the classroom should also consider the incentives faced by these teachers. What incentive can induce teachers to adapt new pedagogies and improve their teaching?

Conclusion

The evolving global picture of economic curriculum suggests an interest and commitment to building knowledge societies extending social participation and opportunities to large number of students. The curriculum requires redefining economic education in terms of syllabus, pedagogy and classroom teaching learning of the subject. The seminar would play a crucial role in defining a problem for consideration, bringing solution to the attention of decision makers and gaining consensus for action.

2 CHAPTER PROCEEDING OF THE SEMINAR

INAUGURAL SESSION

The inaugural session of the National Seminar on Economics Curriculum in schools: Emerging Trends and Challenges began on 25thFebruary at 10 a.m. in the NIE Auditorium. Prof. Neeraja Rashmi gave a brief outline of the seminar and the issues to be deliberated upon during seven sessions within two days. There were 8 speakers and 20 paper presentations during the seminar. Prof. Saroj Yadav, Head of the Department gave the welcome address and presented the background of the need and objectives of the national seminar.

Prof. G. Omkarnath delivered the key-note address. He initiated the speech by emphasising the importance of economics as a discipline throughout the world. School curriculum at present is a matter of great concern after the crisis, which forced us to ponder on the way economics is taught. He quoted Joseph Stiglitz (U.N. Report) who said that the global economic crisis was the the result of wrong economic policies and wrong policies were the outcome of wrong economics being taught. Economics, earlier known as political economy, originated as a discipline of foundation of a commercial society. Adam Smith's political theory is placed within a theory of morality. Classical economics revolved around the issue of optimal allocation of scarce resources among the competing demand. Neo classical economics dealt with demand-supply economics with deepening of mathematically treatment Keynes however, gave a jolt the neo-classical economics. Therefore nature of problems keep changing, i.e. population is no longer regarded a problem today but is treated as demographic dividend. Reality is the master and economics cannot dictate the reality. India has had a distinct tradition of economic thinkers like Chanakya, Dadabhai Naoroji, B.N. Ganguly, Amartya Sen, Jagdish Bhagwati, J. Krishna Murthy, Gadgil, V.K.R.V. Rao, Gautam Mathur, A.K. Dasgupta, K.N. Raj and so on so forth. Therefore it is required that the topics should be carefully picked up. In this process of selection, the rich heritage of Indian economic thinkers can provide a useful insight. At the secondary stage focus should be on economy as an institutional framework, and not economics. Indian economy is not an abstract capitalist economy. Thus basic economic processes like production, exchange, money, finance, growth etc. can be studied with respect to institutions to which they are attached to. There is a need to include some of the policy related issues like how caste system impact the labour market, how productivity of IT professionals are rising at the higher secondary stage.

The inaugural session concluded with the vote of thanks by Dr. M.V. Srinivasan, Assistant Professor, DESS.

25, FEBRUARY 2014

FIRST SESSION

Chairperson	**:**	**Prof. Saroj Yadav, Head, DESS**
Facilitator	**:**	**Dr. Aparna Pandey, Associate Professor, DESS**
Rapporteur	**:**	**Dr. Ashita Raveendran, Assistant Professor, DESS**
Speaker	**:**	**Dr. Gopinath Pradhan, Professor, IGNOU**

Paper I : Teaching Of Mathematical Economics In High School

Prof. Pradhan in his paper explained the importance of using mathematical tools and how the clarity in the concepts can be greatly enhanced by the introduction of mathematical inputs comprising arithmetic and calculus. The resistance, he stated may be due to the math 'syndrome' which exists mainly with the teachers. This leads them to say that students' mathematical comprehension is low. Prof. Pradhan also brought to the notice of the participants that the most of the Nobel Prize Laureate had mathematical bend of mind. Using various examples Prof. Pradhan showed how the use of mathematics becomes important in economics. He narrated how mathematics helps in making prediction. Prof. Pradhan also examined the economics curriculum of NCERT and stated that as in textbooks we are speaking about the GDP, development indicators, Growth rate, functions, slope etc. the learners are already using the mathematical tools. He suggested that now it can be further enhanced by using little bit of calculus also. Prof. Pradhan stated that if the textbooks are criticised for its mathematical content, it is just because of the syndrome. He added that our aimis not to make them mathematicians but at least help them to cross the barrier of learning mathematics. He also highlighted the need for a crash course for equipping teachers to handle the topics and provide avenue for the teachers. Prof. Pradhan concluded that once we equip the teachers to use it effectively in the classroom, we are providing an excellent beginning to students entering higher education. Even if they do not become economist they have gained more things that will help them in practical life application.

Paper II: Learning Economics In Schools- A Dynamic Curriculum For Empowerment Of Children

Discussant: Dr. Ritanjali Dash, Associate Professor, RIE, Bhubaneswar

Dr Ritanjali Dash in her paper highlighted the importance of attaining skills and stated that economics is one such subject which can provide a number of skills and knowledge to students at secondary and senior secondary stage empowering them to be productive members of the society. She specifically mentioned the importance of financial literacy and the need for embedding financial aspects in economics curriculum. This will help the learners to handle day to day financial activities and to take correct financial decisions independently. As majority of students in India, end up at or before the secondary level functional knowledge and skill development acquired during these years through inclusion of financial literacy will empower them to handle day to day activities effectively and to make them aware about society, governance etc. as a responsible citizen.

For inclusion of financial literacy into the economics curriculum, Dr. Dash relooked into the curriculum as a whole and suggested for introduction of economics curriculum at Elementary stage along with certain modifications at the Secondary level. To maintain continuity,it would also be required to modify the syllabus at the Senior Secondary Level keeping in view the changing economic and financial scenario/environment. In view of her field experiences she suggested that the Class IX textbook can very well be introduced at the elementary stage and also stated that we need to relook at the topics like poverty and food security to which students are not very keen and does not give a positive feeling to the learners.Dr. Dash suggested that like the environmental education programme, adolescent education program there is a need for including financial literacy program also in school curriculum. She highlighted the need for incorporating latest changes in the syllabus for which the syllabus needs to be kept dynamic. Students need to know about certain dynamic concepts like various formal and non-formal sources of lending, basics of banking activities related to day to day life like types of demand and time deposits, penal interest, incentives on interest, loans and advances,

various development schemes of governments and lending institutions and NBFCs, SHGs, subsidies, moratorium period, security documents and mortgage, various general and life insurance covering different types of risk like crop, cattle, fire insurance etc. etc. at the secondary stage.

On completing senior secondary education as some students may enter the workplace directly, this knowledge of economic literacy, awareness and ability to make informed decisions will help them to cope with the demands of an ever changing work environment.Dr. Dash also provided examples of pedagogical intervention required to enhance the financial capability of students.

Comments and Discussion

- Mr. Arindham Basu stated as being the fact that more than 38 lakh students are opting for economics, too much emphasis of mathematisation of the subject is going toincrease the burden and economics should be offered without mathematics. As an example he stated that producers' equilibrium and consumers' equilibrium can be explained without mathematics.
- Prof. Meenu Nandrajog brought to the notice of the participants that NCERT was already involved in process of promoting financial literacy. The department has prepared a supplementarymaterial on personal finance which has been uploaded on the NCERT website. Prof. Nandrajog also mentioned that RBI has made NCERT a core committee member for enhancing financial literacy and that both the institutions are working hand in hand towards this endeavor.
- Dr. Karthar Singh commented that even though the mathematical equations are being extensively being used in economics, as teachers are facing problems in imparting it in the classrooms, we need to think whether we need to encourage this or should we minimize the use of mathematical language in our textbooks.
- Mr. Abdul Khader expressed his apprehension with regard to the suggestion of Prof. Pradhan to include calculus also into economics. Stating that the arts student's mathematical skills are very poor, he suggested for overhaul of the economics textbooks at secondary stage.
- Dr Rachna Saran agreed to the need for mathematisation of economics keeping in view of the need for those students who will pursue economics in future. But in case of learners who will be entering job market or opting for other courses, they need to have a better understanding of the economy and should be capable of handle the operations in the market. For those who do not opt for economics in their higher studies mathematisation of the subject will not be useful.
- Ms Sunitha Pathak agreed that mathematics is useful even in case of a vegetable vendor, but stated that it would be best applicable for science and commerce stream students. She further stated that the mathematics that has been used in the economics textbooks after 2005 are tough even for the science and commerce students and they are not in use in their schools. Instead the old NCERT textbooks are being used in the classrooms even now. She suggested that it would be better if the mathematical part can be included as an appendix.
- Ms Anupama Srivastava suggested for a minor math type of paper to students who need to pursue higher studies. She also stated the need for equipping the teachers with the necessary mathematical skills.
- Dr Ravikesh Srivastava suggested that the stress should be more on the application side. If we link economics with little mathematics making it more application oriented, it will serve the purpose. He

stressed on the need for linking the subject with daily life.

- Prof Pradhan respondent to the various comments stating that he is in favour of use of mathematics in economics and stated that we will have to overcome the phobia for mathematics. Efforts have to be made to break the mindset. The question is whether the teachers are prepared to break the mindsets? We can see many people around us including academicians who are even not capable of filing income tax returns on their own. This fear of mathematics need to be done away with. If just seeing the equation f(x) = y, makes us run away it cannot be left out. It is necessary to get free from this psycho fear for use of mathematics. Prof. Pradhan further stressed that the measurement of elasticity becomes much easier with the use of calculus and this enables economic theory to remain precise and simple.
- Prof. Omkarnath clarified his view on the use of mathematics in economics by stating the situations when an economic problem requires mathematics. In economics, variables are used to explain relationship and here precision becomes very important. When we relate through magnitude also mathematics helps. For example. In case of National Income Accounting in a three sector economy, use of 3x3 input output table will be better than using the GDP definition. We cannot do away with mathematics when we want to measure growth and change. Prof. Omkarnath also reminded that if we use the relationship wrongly, Mathematics cannot come to the rescue of economics. He stated that when your intuition fails, then use mathematics- provided your economic problem is well defined.
- Dr Ashita Raveendran brought to the information of the participants the study findings of a research study conducted on understanding the difficulties faced by the students while using mathematical expressions to explain economic theories. The study findings show that even though learners in the humanities group lack knowledge of the basic arithmetic operations, with adequate efforts they were able to cop up and did not have difficulty in understanding the economic theories using mathematical expressions and applying it. She also stated that the fear and aversion towards mathematics were seen among the teachers also and therefore there is a need to break the mindset of both teachers and students. There is a need to equip the teachers as many of them have not learnt the subject using mathematical expressions and hence is difficult for them to handle it in the classroom with confidence.
- Prof. Saroj Bala Yadav opined the need for professional development to the teachers as the problem partly lies with the system. She also stated about the forthcoming programme of the department organizing refresher course on application of mathematics for economics which shall help teachers in this endeavor. Prof. Yadav concluded the session by thanking the speakers of the first session and all participants for enriching the discussion.

SECOND SESSION

Chairperson : Dr. Neeraja Rashmi, Professor, DESS

Facilitator : Dr. Pratima Kumari, Assistant Professor, DESS

Rapporteur : Dr. Tannu Malik, Assistant Professor, DESS

Paper I: Joyful Learning of Economics at Secondary Schools

Discussants: Dr. Santhosh Areekkuzhiyil, Assistant Professor, Thalassery, Kannur District, Kerala

In this session the first presentation was made by Dr. Santhosh Areekkuzhiyil on Joyful Learning of Economics at Secondary Schools. He mentioned that Economics need to play a greater role

in people's life. Learning of economics must bring certain values in the individual learners and in the society and learning of economics should be joyful experience. Joyful learning is thrilling, natural and spontaneous. Economics is not found useful by students as there is problem with the curriculum. Economics classroom appear to be boring some times. There is absence of scope for acquisition of natural and creative knowledge and competence. Theories learned in the classroom do not link with real life. Hence, learning with fear, discipline and stress is detrimental to learning.

The objectives of the study were:

- To analyse the economics curriculum, instructional strategies and evaluation system at secondary level,
- To verify whether secondary school economics education facilitate joyful learning and the development of essential economic competencies and
- To identify the strategies for joyful learning of economics

The purpose of learning Economics at secondary level is development of economic literacy. Economic literacy means when students are able to apply what they learn in Economics to their daily life. Economic literacy develops visions, views, and opinion on economic issues prevailing in the society e.g.to make decisions about earning, saving, spending, and sharing money. Whether our curriculum does that is a great question. The purpose of learning Economics is to develop basic economic competence among students and develop life skills. Life skills are essential for leading an effective life in the complex society. Education ultimately helps learner to lead a good life in the society.

There is change in approach in Economics textbooks. The old textbooks were objective based, gave information only and concepts were provided in abstract form. New NCERT textbooks are case based and follow constructive approach. Revised (2010) textbooks in Kerala and also theme based, follow constructive approach, are critical pedagogy based and have more concretization of concepts.

Teachers need to develop classroom practices according to new pedagogical principles. But at the grass root level it is not happening. We have to develop the competencies among the teachers. Teaching learning of economics should be more need based and activity based. What has been learnt in the classroom should be functional in larger contexts of life.

Evaluation system in Economics need change. There should not be any questions like 'what is economic policy?' In Kerala newspaper cuttings are given to the students and evaluation is done. Evaluation should be based on thinking, decision making and analytical competence. Teachers have to pose realistic and life related problems to the learners. Learning by doing should be encouraged. Case studies help to develop competence, critical awareness and contextualized learning of economics.

Paper II: Innovative mehods of Teaching Economics at Secondary School Level

Discussants: Dr. Tara Sabapathy, HoD, Department of Post Graduate Studies in Education

Second discussant was Dr. Tara Sabapathy who made a presentation on Innovative Methods of Teaching Economics at Secondary School Level. She mentioned that Economics is a very important school subject but students find it boring and dull. In last thirty years she has observed and found that largely methods of teaching are not interesting and are not need based. Teachers use chalk and talk method. She suggested some innovative methods of teaching which she had identified-

- Cooperative Learning
- Case Study Method
- Problem Solving Method
- Project Method
- Media Integration
- Learning games and simulations
- Peer teaching and learning
- Brainstorming

Dr. Tara Sabapathy mentioned that she has research based evidence to prove their effectiveness. Cooperative learning is the basic essence of learning. It is a structured, systematic instructional strategy in which small groups work together to produce a common product. Cooperative learning develops positive interdependence and improves higher level of thinking skills and problem solving. It motivates and promotes positive attitudes. It enhances elaborative thinking and minimizes anxiety of students by increasing their self esteem. She refered to the study conducted in 2006 Nazeer, Abdulla an experimental study on the effect of cooperative learning model on enhancing the teaching and learning of economics at secondary schools. Results revealed that students' interactions and involvement in classroom activities, as well as interest and motivation to learn economics, increased during the implementation of the cooperative learning model.

In a case study method teacher reads or shows a case to the students. This leads to a class discussion in which the relevant principles are applied to the situation. This method has proven to be an effective way of both disseminating and integrating knowledge. A problem can be posed on planning an event. This method helps students to construct their own knowledge based on their findings on a given problems. In project method students can be given a real world situation which they can analyze and present using their academic knowledge and creativity. Chapter 1 on Development can be taught through this method. Media integration refers to the use of documents, recordings, films and computers in the classroom. There are three types of media – print media, electronic media and power point presentation. In economics, the most useful media for teaching include news broadcasts, documentaries and fictional works that deal with economic subject matter. Power point presentations make class more interactive. In 2012 Sucheta Kumari and Geeta Rani conducted a study to find out the efficacy of Instructional media on academic achievement of three different groups of students of XII class in economics when taught through varied media viz. Print Media (Self-Instructional Modules), Visual Media (power point presentations) and conventional approach. Findings of the study revealed that achievement scores of the students in economics increased the most when they were taught through the visual mode of instruction (PPT).

Learning games and stimulations generate student's interest in economics course material. In 2003 Kenneth J. Klasen and Keith A Willoughby conducted a study to assess student learning in class simulation games. The game used here was a simulation of an inventory system. Results pointed to the conclusion that students learned from the game. Students gained an appreciation for the complexity of inventory issues and of decision making in general. Students enjoyed the game and thought it was a worthwhile learning experience.

Under peer teaching and learning jigsaw reading, pair learning, performance related tasks and

dramatization are found as useful methods. Brain storming activity quickly elicits many ideas, reactions or points of information from a group.

Finally Dr. Tara Sabapathy concluded that it is necessary for teachers to make classroom teaching more interactive by using the innovative methods within the framework of traditional "chalk and talk" method. Teachers must realize that those topics which are difficult to understand can be taught through innovative methods. Adopting innovative methods on the part of the teachers requires a positive attitude, openness to change, time management, classroom rearrangement, commitment and the desire to achieve the instructional objectives effectively.

Paper III: Concept Learning In Economics at Secondary School level- A Curricular Dimension

Discussants: Dr. Manju Agarwalla, Associate Professor, Department of Education, University of Delhi, & Ms Nisha, PGT Eco, Army Public School, Delhi Cantt.

Third presentation was by Ms Nisha Arora for Dr. Manju Aggarwal on Concept Learning in Economics at Secondary School Level – A Curricular Dimension. She stated that this study was based on her teaching experiences of economics at senior secondary level. In India the approach to teaching and learning at the school level is syllabus, textbook and examination oriented. The scheme of evaluation casts a significant influence on teaching of a subject at all levels.

Two points of major concern in Economics are:

- Lesser weightage is given to economics as part of social science at secondary level
- Neglect of economics and domination of other components of social sciences like history and geography

The objectives of the study are to:

- to identify economic concepts in the themes covered by the economics component of Social Science curriculum at secondary level.
- to critically analyse the criteria for selection of these concepts in the light of objectives of teaching economics at the secondary level as stated in the curriculum.
- to critically analyse whether these concepts are placed in a logical order in the economics syllabus.
- to analyse the interlinkages of these concepts across themes selected in the economics syllabus.

The Content Analysis methodology was used for the analysis which involved identification of concepts in the curriculum; analysis of concepts and drawing inferences. Analysis was based on the three fold criteria which involved selection, placement and interlinkages (vertical : horizontal).

Findings of the study revealed that certain most basic concepts were not included. E.g. Sectors of Indian Economy. It needs to be taught first then only development and growth can be taught to the students. Wholeness of concepts appears broken. There is too much of simplification of concepts. There is aabsence of linkages (vertical as well horizontal) among themes; themes appear too segregated. Normative considerations require more comprehensive coverage of concepts

Finally, Ms. Nisha Arora suggested that there is a dire need to give rightful place to Economics

as a component of social science at secondary level. Greater linkages (vertical and horizontal) are required in the subject. More comprehensive coverage of basic concepts is required and rightful placement of concepts is needed.

Paper IV: From Assessment to Objectives: Revisiting the Economics Curriculum at the Higher Secondary Level with a Bottom-Up Approach.

Discussants: Dr. Rachna Saran, Pathways School, Gurgaon

The last discussant in this session was Dr. Rachna Saran who presented on From Assessment to Objectives: Revisiting the Economics Curriculum at the Higher Secondary Level with a Bottom – Up Approach. She started with what does a curriculum mean to a teacher? Curriculum means course of deeds and experiences where ideas, concepts and theories are translated into practice. Tyler's Framework states four basic curriculum questions which are – Objectives; selecting learning experiences (Content); organizing learning experiences (Methods) and Evaluation.

National Curriculum Framework 2005 is the guiding principle in this regard which also states Yashpal's committee report on this issue. In the introduction to National Curriculum framework (NCF) - 2005, Prof. Yash Pal writes on the first page:

"… we seem to have fallen into a pit. We have bartered away understanding for memory-based, short-term information accumulation. This must be reversed, particularly now that the mass of what could be memorized has begun to explode. We need to give our children some taste of understanding, following which they would be able to learn and create their own versions of knowledge as they go out to meet the world of bits, images and transactions of life."

Aims of Education are to bring about social change; learning to learn, unlearn and relearn; Sensitivity to others; inculcate Independence of Thought and action and adhere to values of Indian Democracy. But the objectives of NCF 2005 have not been fully realized.

A Case Study was conducted in a private CBSE school with high end fees structure and a latest infrastructural facility in South Delhi was chosen. It was assumed that it would be providing world class education to students. Thirty students, ten each from the science, commerce and the humanities stream, all offering economics as one of the main subjects were chosen as a sample. The teacher teaching economics to all the sections/streams was however the same. The data collected provided some insights.

A finding from the study revealed that objective of teaching-learning Economics has changed to scoring high marks and getting admission in good college. Content was accepted as overloaded. While teaching chalk and talk strategy was used by the teachers. Books by private publishers were used by the students. Class tests and assignments were regularly given by the teachers. Students preferred to go for coaching also.

Evaluation was done by public examination conducted by CBSE. There were zero internal components. External exam (CBSE) lacked variety in questions. Marks were based on 'correct answers' provided by the students.

Hence, students were learning from exam point of view. They were using reference books which gave them practice and depended on coaching. Teachers were looking after self interest (i.e. result should be good) through interest of student, parent & school. Coaching centers and private publish-

ers are thriving according to demand. Students lack time for self study which is most critical. Modification in nature of examination is required.

Curricular Objectives should be to develop understanding of concepts & their real-world application; Develop an awareness of developmental issues facing nation; Develop capacity to identify, analyze critically and activities of individual and society; Enable student to collect, describe, interpret and analyze data for given situations; Promote appreciation of different impact on different of stakeholders of same policy.

Internal assessment should be introduced. In today's time independent research skill is crucial among students. In external exams there should be two papers- micro economics and macro economics. Data obtained from evaluation should reflect whether students meet certain standards. Assess student work by their performance in relation to identified levels of attainment which requires the formulation of assessment criteria. Each assessment criterion should concentrate on a particular skill that students are expected to demonstrate. Mark-bands can be used as a comprehensive statement of expected performance against which responses are judged. They represent a single holistic criterion divided into level descriptors.

Chairperson Prof Neeraja Rashmi invited questions from the audiences. In the light of presentations made by four participants, she stated that NCERT textbooks have made use of several pedagogical tools like projects, case studies, media integration, cartoons etc. to a large extent. She mentioned that Dr. Santosh Areekkuzhiyil in his paper on Joyful Learning of Economics at Secondary Schools suggests strategies to make learning of economics meaningful, realistic and life oriented. The objective is to develop critical awareness about real life issues. He made a comparative analysis of world and NCERT textbooks. His suggestion is to use real case studies not the imaginary one.

Prof. Neeraja Rashmi mentioned that Dr. Tara Sabapathy spoke on co-operative learning, where students serve as a major learning source, sharing and gathering the information needed, which can minimize the load and anxiety. She has deliberated on innovative methods like case study, problem solving, project method, media integration, simulation and games. The paper explains these innovative methods using concepts from economics as well as NCERT textbooks.

Regarding vertical integration as suggested by Ms. Nisha Arora, the subject begins with livelihood, market and economic role of government in classes VI-VIII. At the secondary stage the students are exposed to few aspects of development, economic challenges and human capital. Simultaneously students are introduced to new economic concepts such as factors of production, classification of economic activities and the role of financial institutions. Regarding weightage given to the subject, all four subjects now command equal weightage. Prof. Neeraja Rashmi stated that Dr. Rachna Saran has effectively conducted the research to find out how objectives of National Curriculum Framework 2005 are not fully realised as yet. She has examined question patterns and suggested possible alternatives. Internal assessment has been taken care of by introducing continuous comprehensive evaluation.

Prof. Neeraja Rashmi mentioned that there are others issues also which need some consideration like one teacher teaching all social science subjects at secondary stage. At higher secondary stage Economics is an optional subject for the students of all streams namely humanities, commerce and science, who differ in their interest and aptitude. Some students join the workplace at the end of this stage and some continue with their education. There is a need to think on these issues and decide 'what economics should be taught to these students at higher secondary stage'. The session ended with this thought provoking question for all of us.

THIRD SESSION

Chairperson : Dr. Minoo Nandrajog, Professor, DESS

Facilitator : Dr M.V Srinivasan, Assistant Professor, DESS

Rapporteur : Dr. Seema S. Ojha, Assistant Professor, DESS

Speaker : Dr. Saumen Chattopadhya, Associate Professor, JNU

Paper I: Nature of Economics : Revisting the Economics Curriculum at School Levels

The session was chaired by Prof. Meenu Nandrajog and facilitated by Dr. M.V.Srinivasan. Prof. Nandrajog welcomed all participants and paper presenters. She gave a brief introduction of the main speaker of the session Dr. Soumen Chattopadhyaya, Associate Professor, JNU. After this Dr. Chattopadhyaya talked about 'Nature of Economics: Revisiting the Economics Curriculum at school levels'. First he spoke about various concerns related to present curriculum and textbooks in general like presentation of present textbooks is boring and dull and that textbooks do not connect students with emerging realities. Then he stressed on the need for providing history of economic thought in textbooks of Economics to make students understand how Economics as a subject evolved. He also talked about making study of Economics enjoyable, meaningful and relevant, to be able to foster good citizenship and connecting it with other subjects like History, Political Science, Psychology and other Social Science subjects. He gave an example of 'market' and through this he tried to present how a topic in Economics can be taught by providing information in boxes and incorporating questions of values etc. He also proposed a structure for classes XI and XII. He said that in Class XI emphasis should not be much on Statistics rather it should deal with structure and specific characteristics of Indian economy. In Class XII Micro and Macro Economics should be taken up with respect to the History of Indian economy. He also mentioned that the form of questions needs to be changed in the exams and there should be 10-15 marks challenging questions which motivate students to ponder.

After Dr. Chattopadhyaya's presentation Dr. Aerum Khan from CIET presented her paper on 'School Economics in the National Repository of Open Educational Resources: An Overview of the developmental process'. She spoke about what NROER is, its aims, how it has been developed etc. She shared the process- how concepts from secondary and higher secondary level textbooks in Economics were selected, listed, concept mapped and provided with different resources on the NROER website. Further she highlighted the implications of NROER for students, teachers, general public etc. Third presentation was by Dr. Jyoti Pandey, PGT, Mathematics from KV, JNU on 'Interface between Economics and Mathematics'. Through various proverbs, pictures and cartoons she tried to connect Economics with Mathematics, English and Value education. Fourth and last presentation was by Dr. Kartar Singh from Jamia Millia Islamia on 'Pupil's performance in Economics: An Action research'. He shared his action research conducted in a Delhi school. First he spoke about the problems observed in an Economics classroom and then he shared his plan of action adopted in that school of interviewing teachers, focus group discussion with students and filling up of questionnaire by students to bring out some positive change in the classroom. Then he talked about the result of this action research as helpful in improving the performance of students in that classroom. After these presentations questions were invited from participants. This was followed by summing up of the session by Prof. Nandrajog and vote of thanks by Dr. Srinivasan.

26, FEBRUARY 2014

FIRST SESSION

Chairperson : Dr. Neeraja Rashmi, Professor, DESS

Facilitator : Dr. Ashita Raveendran, Assistant Professor, DESS

Rapporteur : Dr. M.V.S.V Prasad, Assistant Professor, DESS

Paper I: Innovative Pedagogical Module for effective linkage of Economics Curriculum in School with Higher Education

Discussants: Dr. Ravikesh Srivastava, Professor, S. P jain Institute of mangaement & Research, Mumbai

Prof. Neeraja Rashmi chaired the session. Dr. Ashita Raveendran facilitated the session. Five presentations were made during this session. The presenters highlighted some innovative pedagogic practices within and beyond the classroom to teach economics effectively in schools. They emphasised the need to link economics to real-world situations to make it more interesting to school students and thereby enhance the quality of teaching-learning processes.

The first presenter was Prof. Ravikesh Srivastava (S.P. Jain Institute of Management & Research, Mumbai). The topic was "Innovative Pedagogical Module for effective linkage of Economics Curriculum in School with Higher Education." Viewing Economics from a management education perspective, he highlighted the growth of jobs in the private sector and the demand for Economics. He listed some reasons for less number of students from professional courses opting for Economics. The present school education has less connectivity with higher education. School curriculum is relatively less rigorous than higher professional courses. Economics is predominantly mapped as a subject of humanities stream. The scope of Economics is not well explained at school level. The myth of Economics as a difficult subject is because of much of it is theory and principles. There is less focus on graphs/ diagrams and live examples from the real world. In professional courses, faculty members face challenges of clarifying basic concepts within a short time span. Focus is on application in management classrooms.

He stressed the need to popularise Economics as a course of Science rather than humanities so that more students will opt for it. Wider scope of Economics should be well explained right from school. Economics is a difficult subject, so the challenge is how to make it more interesting with help of more real life examples, diagrams, graphs etc. Simplify Economics curriculum by focusing on its graphical explanation rather than more of its theory. Greater interaction between higher education and school education is required. Continuous upgradation of school teachers has to be promoted through research studies, conferences and seminars. The private sector is less concerned about marks and more about personality development and skills. He indicated a course outline with five components: (A) Fundamental Economics, (B) Microeconomics, (C) Macroeconomics, (D) International Economics and (E) Personal Finance Economics.

Paper II: Relevance of innovative practices in teaching school economics in today's life

Discussants: Anjana Debnath, Delhi Public School, Pune

Mrs. Anjana Debnath (PGT Economics, DPS, Pune) made the presentation on "Relevance of Innovative Practices in Teaching School Economics in Today's Life." In her experimental study, she compared role of traditional and innovative methods of teaching in the development of understanding of school students of Economics. The traditional methods include direct instructions method, textbook and written assignment method, and chalk and board method. The innovative methods include interactive lectures, use of print and electronic media, teacher driven power-point presentations, case studies, peer-peer teaching and learning, project-based learning, survey method, games and simulations. The study had a random sample of 40 students in Classes XI-XII (20 from DPS + 20 from Govt. School) and used traditional and innovative teaching methods questionnaires. Innovative teaching methods have more impact on learning! Today's generation uses ICT in different fields of daily life including education.

She also described innovative methods practised in Takshila Educational Society for real life experiences. They are rural immersion programme, village survey, interaction with organic farmers, SHGs, rural banks, student internship programme, industrial visit, e.g. to Coca-Cola. A boring topic such as 'human capital formation' (Class IX) was made interesting through peer group study.

Paper III: Nurturing Creativity in Economics

Discussants: Sunita Pathak, Delhi Public School, Greater Noida

Ms. Sunita Pathak (PGT Economics, DPS, Greater Noida, UP) made the presentation on "Pedagogy of Economics: Nurturing Creativity in Economics." She began the presentation creatively by sharing her anecdotal experiences with the Class X students while transacting the topic of globalisation and its impact on India. She derived some key concepts of Economics from classroom discussion, which revolved around a popular Bollywood movie, Dhoom:3! These concepts include competition, unemployment, acquiring new skills, attracting consumers, supply and demand etc.

We have to take the subject of Economics to the theatres, canteens etc. We cannot force students to study. She described pros and cons of the present pedagogical methods for teaching Economics. Emphasising the need to sow the seeds of creativity, she listed methods for fostering creativity by encouraging students to read critically, analytically; avoid saying everything about a topic and make them think; asking questions that elicit original responses; giving challenging assignments; discouraging rote memorisation; encouraging the students to take part in economics clubs. While teaching the chapter 'Food Security in India' (Class IX, chapter 4), students were asked to go through the food security bill from the net. Two groups analysed it from different perspectives. We need to give more challenging assignments.

Among the challenges to nurturing creativity are fixed curriculum, which limits the scope of study; rigid timetable, e.g. quick uploading of marks; non-acceptance of unconventional ideas; library periods lacking direction; low level of motivation; parental pressure to excel and get maximum marks, lack of intelligence and general interest. Students also have the fear of being ridiculed. Snubbing the best student discourages the entire class.

Action research conducted by her found that the number of active learners increased from 10%

to 25% within two months due to the activities performed. By undertaking steps such as brain storming, role play, dramatisation etc. and providing enough support to the students, their creativity can definitely be fostered. There is a definite possibility of spark of innovation. Demonstrating the use of multimedia, she had shown an advertisement created by her students.

Paper III: Economics curriculum in states: A comparative study

Discussants: Arindam Basu, Delhi Public School, Ruby Park, Kolkata

Mr. Arindam Basu (PGT Economics, DPS, Ruby Park, Kolkata) made the presentation on "Economics Curriculum in States: A Comparative Analysis." He listed objectives of studying economics, status of economics as a subject in India and objectives of economics curriculum of different boards such as CBSE, ISC and IB. He further listed the titles of courses in the Higher Secondary Economics syllabus of State Boards of Andhra Pradesh, Gujarat, Madhya Pradesh, Maharashtra, Manipur, Rajasthan, Tamil Nadu and West Bengal.

He observed that curriculum appeared to impose unnecessary burden on students. For example, including all Five-Year Plans in the curriculum makes it burdensome. Project work or case study is absent as a result of which the student lacks the chance to develop analytical skills. He stated that curriculum has to be productive and innovative. The concept of Open Text-based Assessment (OTBA), introduced by CBSE, should be followed by other boards. Curriculum should include real life projects.

Paper IV: Economic dimension of government in school textbooks: an analysis of secondary level scoial studies textbooks in India

Discussants: M.V Srinivasan, Assistant Professor, DESS

The last presentation was made by Dr. M.V. Srinivasan (Assistant Professor of Economics, DESS, NCERT) on the topic, "Economic Dimension of Government: An Analysis of Secondary Level Social Studies / Social Science Textbooks in India." Government as a macro aspect in economics curriculum is totally unexplored. The issue of how economic role of government is portrayed in textbooks has not been thoroughly analysed. Another issue is how to deal with pressure from government agencies for inclusion in social science syllabus. His reflections were based on content analysis of Class IX-X Social Studies textbooks of Andhra Pradesh; Economics textbook of Maharashtra; Social Science textbooks of Karnataka and Tamil Nadu published by state government agencies during 2004–2014.

The following aspects of Government were observed. Government as authenticator of data; Planning Commission, Five-Year Plans, budget and taxation; welfare state and service provider, policies and legislations, understanding economic organisations and direct production activities. He found that texts encourage rote memorisation. They have the tone of moralising/ advising and have potential to be used as a tool of government propaganda. The texts followed top-down approach with few real life examples. Texts were not updated for more than 10 years. Concepts were used without bothering whether they were introduced to learners earlier. Texts do not allow students and teachers to get into active engagement.

He cited examples of rote memorisation / curriculum overloading (definition of an underdeveloped country given by the Planning Commission – Maharashtra, data about National Highways – Tamil Nadu), potential tool of government propaganda (India's new economic policies – Tamil Nadu), moralising / top-down approach (National Forest Policy – Tamil Nadu, the 1894 colonial

forest policy: An alternative way of presentation – Andhra Pradesh) and terribly outdated texts (information about Five-Year Plans – Karnataka). We need to look at textbooks critically. To sum up, there is a long way to see NCF, 2005 in action.

Prof. Neeraja Rashmi, Chairperson of the session, summed up the presentations. She mentioned about the necessity to forge links between higher education and school education; make economics more rigorous; use application-based real cases and daily examples to make topics more interesting. The advantages of innovative teaching methods compared to traditional teaching methods were displayed with examples. Examples from real life situations can be interesting. We heard interesting narratives about how to make students learn without making them realize so, hold their attention, divergence in economics curriculum across different boards and how textbooks portray government in a top-down approach.

Responding to suggestions on adding more rigour to the curriculum, she reminded about different types of schools. There is a danger of leaving many teachers and students behind. NCERT is approached by many government agencies to include their materials in textbooks, creating problems. But it is difficult to include them. Data, e.g. roadways, keeps changing and becomes outdated. Schoolteachers need to participate more in such seminars. NCERT syllabus and textbooks have to cater to divergent needs of those students who continue with higher education and also those who discontinue after Class XII.

During the brief discussion, Dr. M.V.S.V. Prasad (DESS, NCERT), Mr. Fayaz Ahmed Bhat (Lecturer in Economics, Govt. Degree College, Srinagar, J&K) and Dr. Santhosh A. (Asst. Professor, Thalassery, Kerala) sought clarifications from Mrs. Anjana Debnath about the nature of sample, variables, methodology, statistics, and questionnaires used in her study. Dr. Prasad commented that on the one hand, Prof. G. Omkarnath advocated that Economics be viewed as a social science subject to stress the human dimension. On the other hand, Prof. Ravikesh Srivastava emphasised that Economics be projected as a science subject to make it an attractive career choice. We need to reconcile these two contending approaches.

SECOND SESSION

Chairperson	**:**	**Prof. G. Omkarnath, School of Economics University of Hyderabad**
Facilitator	**:**	**Dr. M. V. Srinivasan, Assistant Professor, DESS**
Rapporteur	**:**	**Dr. Pratima Kumari, Assistant Professor, DESS**
Speakers	**:**	**Dr. B.L Pandit, Professor, Delhi School & Malabika Pal, Associate Professor, Miranda House, DU**

Paper I: Learning Theorieas in Economics & Linking School Economics Curriculum with Higher Education

Dr. Pal said that there is disconnect between school level and college level economics curriculum. She said curriculum should be at par with global level and contain ground realities. There is huge rush for Economics and availability of mathematically oriented teachers is less. She further suggested some measures to deal with this situation. State Boards should come together and exchange ideas how to link the curriculum. Basic concepts should be introduced with real life case studies. Case studies should be local specific. There must be visits by faculty to different states & boards, even foreign schools and universities. Feedback from students, parents and faculty must be collected regarding the curriculum. She concluded her lecture with a note that the national seminar is a good beginning.

Paper II: Economics- "Big Picture" with innovative approach

Discussants: Dr. Manish Chug, NIOS, Noida

Dr. Chug said on the basis of his observations he felt that content of curriculum is more important than the content of delivery. He highlighted that there is some important content that is missing in the curriculum. The missing areas are: How to start business, what is importance of Chamber of Commerce, real life case studies like Amruti from Gujarat who has started her business. Curriculum should take into account these kind of cases. He said that knowledge is jointly constructed by students and teachers. Students are active learners, they are empowered and power is shared between students and faculty. He further said that motivation to learn is also important so students should be convinced what they are learning is useful in life. Students should be enabled to apply learning in active and concrete ways.

Paper III: Situating Environmental Education in the Teaching- learning of Economics

Discussants: Ms. Ajita Hoshi, DESM, NCERT

Ms. Hoshi first explained in detail about the objectives of study. She further said that the holistic development of society is important and critical thinking should be developed among the students. She said that at present students have bookish knowledge and have very less critical thinking about the environment. She strongly said that environmental issues should be dealt in classroom in an infused manner.

Paper IV: Linkage of Economics Curriculum

Discussants: Ms. Anupama Srivastava, Delhi Public School Ranipur, Haridwar

Ms. Srivastava said that the non- mathematics students are at disadvantage. For them she suggested there should be minor maths and introduction of an additional module of relevant mathematics for these students. She further said that economics is introduced late in class IX. She suggested it should be introduced early. She said that the syllabus of class XI and class XII are totally detached. She emphasized on the need for re-organisation of the syllabus and change in . examination pattern and the way of questioning.

After the presentations, there was question-answer time and the session was concluded by the chairperson. The session was lively and interactive.

THIRD SESSION

Chairperson	**:**	**Prof. Saroj Yadav, Head of DESS**
Facilitator	**:**	**Prof. Manju Bhatt, Professor, DESS**
Rapporteur	**:**	**Dr. Aparna Pandey, Associate Professor, DESS**
Speakers	**:**	**Dr. S.K Thorat, professor of Economics, JNU**
		Chairman, Indian Council of Social Science Research and
		Dr. Nidhi Sabarwal, Director, IIDS

Paper I: Reform in knowledge to address the concern of the Marginalised Groups in the Economics

Nidhi Sabarwal , Director, Indian Institute of Dalit Studies , presented the paper . She discussed status of poverty and malnutrition in India by comparing statistical data of 1993 and 2010. Since malnutrition of proxy of poverty indicator, the study shows that malnutrition has declined in all groups but slower among Scheduled Castes . She emphasised on discrimination of scheduled castes based on three criteria i.e . Complete exclusion, differential exclusion and differential behaviour. She explained Discrimination in Economics such as statistical and belief based discrimination. She further cited examples to differentiate between belief and prejudice.

She also described theories related to economics of caste system such as Neo Classical Approach, Marxian approach and B.R. Ambedkar approach which are necessary for theoretical understanding of caste system. The paper highlighted the study conducted by Indian Institute of Dalit Studies in Caste and Labour market based on hiring, wages and terms and conditions. This study also discussed Matched Resume Audit Study which was conducted for theoretical understanding of economic discrimination.

In this session a research paper was presented by Abdul Kadir, PGT Economics, Anglo Arabic Senior Secondary School , Delhi on Academic achievement of students in economics at senior secondary level: A case study of a school located in Central District Delhi. In this study a tool was developed to understand senior secondary students' performance in economics , language proficiency , numerical ability . During discussion the presenter stressed that remedial classes for under achievers should be started in the beginning of the school session.

The following queries were raised during question /answer session.

Dr. Manju Agrawal from Delhi School of Economics asked from Dr. Nidhi that whether the area related to her study can directly figure out in the curriculum or only pedagogical intervention is possible.

Dr. Srinivasan ,NCERT , suggested that Indian Institute of Dalit may take a study based on NCERT social science textbooks that the impact of the chapters on children in classroom , where such issues are reflected thoroughly.

Ms. Anupama, teacher in Economics, DPS, Haridwar said that whenever these issues are raised during the classroom transaction, classes get divided because children are very emotional not diplomatic. Therefore, it is very difficult to handle such issues at school level .Dr. M.V.S.V. Prasad, NCERT, also supported her views and cited reference of Ompralkash Valmiki and Sachar committee report given in Social and Political Life textbooks. It was also discussed that sometimes teachers skip such issues in the classroom to avoid any conflict among students.

FOURTH SESSION

Chairperson : Dr. Saroj Yadav, Professor, DESS, RIE, Bhubaneswar

Facilitator : Dr. Shankar Sharan, Associate Professro, DESS

Rapporteur : Tannu Malik, Assistant Professor, DESS

Paper I: Academic Achievement of Students in Economics at Senior Secondary Level: A Case Study of a School Located in Central District

Discussants: Prof. Ismat jahan Siddiqui, I.A.S.E, Faculty Education, jamia Millia Islamia & Mr. Abdul kadir, PGT Econoimcs, Anglo Arabic Senior Secondary School

Mr. Abdul Kadir presented the paper on Academic Achievement of Students in Economics at Senior Secondary Level:A Case Study of a School Located in Central District, Delhi. He gave a background of the school in which they had conducted the study. It is a historical school in Old Delhi. It was established in 1692 by a Mughal Sepehsalaar Ghaziuddin Khan in the form of Madarsa. Later on it was known as Anglo Indian Delhi College. This school offers three mediums of instructions for classes VI to XII. Three hundred students are studying economics and thirty percent study in Urdu. Hindi and Urdu medium students sit together. Till 2008 Economics was compulsory for Commerce and Arts stream students. Later Economics was made optional for Arts stream. But students are loosing interest. There are three reasons behind it- 1) numerical abilities, 2) language and 3) teaching skills.

The objectives of the study are as follows:

1. To study quantitative abilities as a factor affecting students' academic achievement in Economics at Senior Secondary Level
2. To study language abilities as a factor affecting students' academic achievement in Economics at Senior Secondary Level
3. To study the effectiveness of using 'core teaching skills' in Economics at Senior Secondary Level

For this study stratified random sampling technique was used for the selection of sample. Total eighty students were selected for the study. Self made tools were used for the study.

A quantitative ability test was constructed with concepts of percentage, square root, fraction multiplication, one variable liner equation and rule of division. Feedback about 'teaching skills' was also collected from the economics teachers teaching in the same school. Analysis of Data was done with Karl Pearson correlation coefficient. Co-relation between quantitative ability and their exam was found significant. A weak correlation was found between language ability test and marks obtained by the students in summative examination.

Urdu medium students face some problems in Economics. Almost thirty percent students use Urdu. But they find that sufficient material is not available. The graph, diagram, tables are not communicative enough. They also have number phobia. They are so scared of numbers that they do not answer. They are scared of numerical problems. Not a single student tried to answer numerical problem.

A surgeon requires essential skills for performing surgery. In absence of these pre-requite skills he/she cannot perform his/her task efficiently. In teaching profession same analogy is used. A teacher should be aware of various teaching skills for performing his/her task efficiently. Teaching skills are not merely useful for economics teachers, but for all subjects. These skills are –

4. Lesson Introducing Skills: Students find economics teacher as boring. It is important for a teacher to connect with the previous knowledge Previous knowledge needs to be enquired by the teacher and a brief discussion should be held on current topic.
5. Questioning Skills: The ability to ask and answer questions is central to learning. There are some suggestions:

- Balanced and thought provoking questions should be asked
- Encourage lengthy answers
- Avoid yes/no questions
- Ask stimulating questions of how, why

6. Response Management: Responses need to be shaped in such a way that it can create critical awareness among pupils. While teacher interacting with the students in the classroom it is not necessary that all responses given by students are correct.
7. Behavior Regulating Skills: Behavior regulating skills are important to grab attention and meaningful interaction between teacher and students. E.g. right use of gestures and voice modulation.
8. Explanation and Illustration Skills: Illustrations like bars, diagrams, tables should be used for explaining the content.
9. Reinforcement Skill: A teacher needs to use reinforcement strategically to boost confi-

dence of students in classroom.

10. Communication Skills: A teacher needs to speak grammatically correct sentences. Flow of communication should be logical. Emphasis should be given on key points.
11. Writing Board Skills: Effective use of writing board in classroom helps pupil to understand any concept easily as it provides concrete experiences to students instantly.
12. Subject Knowledge: Sound subject knowledge is a must in a teacher.

Use of 'core teaching skills' positively affects academic achievement of students in economics at senior secondary level.

Prof. Saroj Yadav enquired if he has used teaching learning skills in the classroom and what was its impact?

Mr. Abdul Kadir explained that teaching skills are important for a teacher to perform their tasks effectively. He has experienced that effective use of 'teaching skills' by the teacher in the classroom affects academic achievement in subject positively. These skills are the set of activity which are supposed to be manifested by a teacher for effectiveness in teaching.

Prof. Saroj Yadav gave a gist of achievement, action research and various micro teaching skills reflected on improvement and invited questions and observations. She thanked the panelist

Dr. M.V. Srinivasan asked for a feedback from the participants. Prof. Saroj Yadav asked everyone to give suggestions on how to generate interest in Economics at school level.

Teacher suggested:

13. - Class VI onwards there should be little introduction to economics

- There should be horizontal and vertical link in the syllabus from classes VI to XII
- Micro and Macro portion should be separated.
- There should be teachers manual

A teacher revealed that TGTs do MA in Economics for the sake of promotion and are unable to cope up with the situation in the class. Hence refresher course for teachers can be organized.

In the end Prof. Saroj Yadav gave two recommendations:

- Development of material for teachers on 'Mathematics in Economics'. Manual can be developed on how to use mathematical application in Economics.
- Training of teachers can be carried out.

In the end Prof. Neerja Rashmi presented a vote of thanks.

3 CHAPTER FINAL PAPERS PRESENTATION

3.1 ECONOMICS FOR OUR SCHOOLS:ENDS AND MEANS

INTRODUCTION

Economics is evidently a popular subject with our school students. There can be little doubt that its popularity will only rise as the Indian economy grows in size and sophistication, and integrates fast with global economy. The resulting pressure on demand for economics and related skills seems to offer a challenge for our school system. The issues involved are complex and we shall do well not to view revisions in economics curriculum as a technocratic exercise trying to catch up with some imaginary international 'ideal' model. Nor is it proper to think of school textbooks as condescending versions of college (undergraduate) textbooks. Our purpose in this note is to argue that a revised economics curriculum for schools must be cognizant of(a) the peculiarities of the evolution of economics as a scientific discourse; (b) the urgent need for widespread economic literacy in India; and (c) India's developmental aspirations and intellectual tradition.

Our challenge is in terms of both curriculum and pedagogy. The curricular challenge is that a heightened demand for the study of economics in India occurs precisely when the global reputation of economics as a scientific discipline is at a low point. In fact, a crisis in economics itself is identifiable. The UN commission on global economic crisis is categorical that if the crisis since 2008 is the result of bad economic policies in advanced economies, bad policies are due, in the first place, to bad economic doctrines held by policymakers. Since doctrines can only arise in economics education, this points to a crisis in economics itself, at least in the kind of economics predominant in those countries. However, the crisis in economics is periodic. The Great Depression of the 1930's, the Oil Shocks of the 1970's and the ongoing crisis since 2008 have marked corresponding crises in the discipline. The prestige of economics seems to be closely associated with the performance of industrial economies. Our curricular choicesin India cannot be blind to this periodic crisis in economics. We shall, in fact, argue below that our curricular choice for schools should be in favour of a study of theeconomy rather than economicsas a set of mechanistic, a priori and universal 'principles'. Since the economy is an entity in the (historical) time-space continuum, its problems and modes of analysis are necessarily historically relative and contextual. Any economic 'principles' must be based on given, observed reality. Much of the crisis and controversy in economics today follows a failure to recognize this fact (see below).

There is a pedagogic challenge running alongside. If the student must begin with a study of the economyin-context, what should be that economy? Textbooks in the United States and Britain usually have examples and illustrations drawn from those economies. In India, textbooks tend to rely, if at all, on purely hypothetical examples. The problem with this course is that the student has no idea of the nature of the economic system under study. Is that an actually existing industrial economy run on capitalist lines? Or is it an abstract system of markets animated by rational economic agents? Doubtless, the economy under reference in our case should be none other than the Indian economy in which the student lives and whose facts and institutions she can easily relate to. And this will only

stand the student in good stead because Indian economy is, if anything, more complex and challenging to study than any of the advanced industrial economies. Consider for example the contradictory course of Indian economic development. Despite the impressive rates of economic growth it has recorded in recent decades, India remains one of world's largest concentrations of poverty and deprivation.The study of economics in India will be worth little if it does not make the student relate to the multiple deprivations and struggles of majority of Indians. We cannot leave the student in a situation where her textbook on economic 'principles' has very little to do with her textbook on Indian economy which, more often than not, is a compendium of facts and numbers completely detached from 'principles'.On the other hand, India has a vibrant intellectual tradition of its own dealing with the nature of Indian economic problem and its remedies. This tradition dates back at least to the nationalist writers of the nineteenth century and continues after independence. Our curricula and textbooks must recover and exploit this tradition (see below).

The complex history of economics

It is natural for the contemporary school teacher to feel very secure about economic 'principles', especially those known as microeconomicsbecause the laws of 'demand' and 'supply' and the associated concept of 'equilibrium' seem to follow from well-ordered logic of rational choice of individual consumers and producers. And textbooks, Indian or foreign, support this stereotype. However, it is this economics that has been shown to be in periodic crisis. It takes considerable investment in scholarship to appreciate that in the field of economics at least, the latest is not necessarily the best.The problem is compounded as books on history of economic thought present the subject as a chronology of ideas marking a steady progress in science, as Whig history. Limitations of space prevent a detailed consideration of the issues here, but we shall note the major developments in economics in the form of statements which the teaching fraternity is invited toreflect on and debate.

1. Modern economic analysis, known originally as PoliticalEconomy, originated in the 17th and 18th centuries in France and England which saw the disintegration of feudalism and the gradual emergence of the 'commercial economy'. With Industrial Revolution, the latter evolved into the capitalist economy. The need then arose for a framework to solve practical problems of public policy and the result was Political Economy. French Physiocrats and English economists such as Petty, Adam Smith and Ricardo developed this framework.
2. Political Economy aimed to be a comprehensive human science, integrating into its fold not only history and polity but also social structures and ethics. It analyzed consistentlywhy and how different capitalist economies progressed differently in riches. The organizing concept is 'social surplus' which the production economy always generated over and above the needs of reproduction. Analysis was focused on the historical, political and social conditions under which this surplus was generated, valued, distributed among social classes and reinvested by them in production. The entire economic process is conceived as a circular and cumulative one.
3. In the last quarter of the 19th century, the well-established and vibrant system of Political Economy was sought to be replaced by a new and entirely different system ofPolitical Economy. This happened not because the older system was found wanting in explanatory power or internal consistency, but because it seemed to maintain that labour alone is the source of social wealth. This doubt, although never satisfactorily established, was sufficient to generate an ideological climate supposedly favouring the labouring classes against the capitalist class.

4. Leon Walras of France, Stanley Jevons of England and Karl Menger of Austria worked independently to forge a system that completely shifted attention from production to markets, from surplus to scarcity, from growth of resources to their efficient allocation, from social classes to atomistic rational agents, from social needs to subjective utility, from complementarities in production and consumption to substitutability, and from historical method to Newtonian physics.
5. The operational structure of the new system, which has come to be known as (neoclassical) economics, is based on two fundamental but symmetrically opposite 'forces' of supply and demand which are to explain all economic phenomena simultaneously. The market-clearing solutions of the laws of supply and demand simultaneously explain prices, output, wages, profits, levels of employment of labour and capital, and choice of technique of production. The 'law' of supply is the direct result of picking out Ricardo's concepts of 'scarcity' and 'diminishing returns', which he applied to the specific cases of land and agriculture, and illegitimately extending them to all 'factors of production' and to all lines of economic activity. The symmetric 'law' of demand arises from subjective utility traceable to hedonistic philosophy.
6. The whole economy is presented as a linear process starting from scarce 'factors of production' slowly resolving themselves into desirable bundles of final goods and services whose economic value completely exhausts the economic value of the original factors, thereby leaving no surplus in the system. Markets are endowed with the sole function of allocation of scarce resources while in reality markets generate new resources.

This rashly brief review of over two-and-a-half centuries of economics which identifies distinct systems of economics raises one fundamental issue that is germane to our discussion. Why do we say that neoclassical economics is in periodic crisis? The Great Depression of the 1930's exposed the lack of predictive content of demand-supply economics. Whereas this theory concludes that a laissez faire economy should necessarily lead to full employment of labour and capital, advanced economies have shown a regular tendency ever since the Depression to significant involuntary unemployment of labour together with excess industrial capacity. The Keynesian Revolution in economics exposed precisely this inadequacy of textbook economics.

Post-War economic policies in advanced economies, as indeed textbooks, suitably incorporated Keynesian theory. But this was to be short-lived as the two Oil Shocks of the 1970's produced the twin phenomena of unemployment and inflation which even Keynesian theory was not equipped to deal with. This threw neoclassical economics into complete disarray, leading to fragmentation within. We thus have new and competing schools of economics within which nevertheless share the basic tenets of demand and supply. A more fundamental weakness of neoclassical economics surfaced in the meanwhile. Controversies relating to a theory of profit based on demand for and supply of capital snowballed into a whole new sub-discipline called Capital Theory which exposed the logical incoherence of neoclassical theory. We need hardly dwell on the ongoing global economic crisis whose implications for mainstream economics are still to be fully understood.

Implications for school curriculum and pedagogy

What is the good of relying on conventional 'principles' of economics which have failed to address and answer the problems of advanced economies and passing them on naively to unsuspecting school students? This is a question we as responsible members of the teaching community cannot

avoid asking. A second question is perhaps even more relevant. Since all economic theory, whether neoclassical or not, is concerned with the problems of the capitalist economy, should we burden the Indian school student with any theory at all?Asking these question is not necessarily asking for anarchy. There is a way out and that is shown by India's own tradition in economics. From the studies of India's colonial economy by nationalist writers ranging from Nauroji, Ranade, Joshi, and R.C.Dutt to Ambedkar, VKRV Rao and PC Mahalanobis, we have two valuable lessons. First, they critically analyzed British economic policy in India and found it wanting and misdirected in the conditions prevalent in India. Secondly, their empirical and analytical studies contributed positively to an understanding of the structure and functioning of Indian economy. In other words, they have shown that economic 'principles' are not ends in themselves and can claim no universal validity. They have also shown that the beginning of economics is in the study of the economyas an historical-institutional complex.In independent India, we have two outstanding examples of this critical-constructive tradition. Krishna Bharadwaj, a political economist,has shown how a conventional, neoclassical reading of agrarian markets is flawed and how non-price and non-economic factors animate markets in an economy with overlapping modes of production. AmartyaSen, a neoclassical economist, has exposed the weakness of the utilitarian foundation of neoclassical welfare economics and has contributed to the broadening of the concept of poverty. It would be a complete disappointment if we cannot exploit this entire Indian tradition to the fullest extent.

Focusing on the economy rather than economic principles and keeping the Indian economy in the empirical foreground of school economics has another reward. There is widespread economic illiteracy in India today not only among otherwise literate Indians and the educated middle classes but also among those whose professions (officials, people's representatives, media persons and so on) actually require them to be familiar with simple skills of economics. Such widespread economic illiteracy can cost the society in terms of quality of governance and especially quality of economic policies. As the Indian economy grows in size and sophistication, basic economic literacy should become an integral part of everyone's training in citizenship and school education is the obvious site for such training. Regardless of whether one seeks higher education in economics, the citizenry as a whole should know what GDP, budgets, taxes, inflation, interest rates and exchange rate mean for individuals and the society.

Another advantage of the study of the economy is that economic measurement can be made an integral part of the study. Unlike the case with other social sciences, most economic variables are measurable and economic data on these variables is not only regularly collected but, thanks to digital technology and the internet, is increasingly available in the public domain. Student's understanding of economic concepts would be better if they are given live data sets and made to actually compute per capita income, growth rate, cost of living and price rise. The necessary mathematics and statistics can be explained alongside without the need for a separate textbook on quantitative methods and such like. An interest in measurement also engages the student with regular reports on the economy through the print and electronic media.

A well thought out and graded structure of the study of the Indian economy at the school level can actually lay a firm foundation for studying economic theory at the college level, should the student be so inclined. For one thing, with the study of the concrete economy, she will see the need for economic theory and, indeed, appreciate why different kinds of economic theories coexist, why economists differ so often on the performance of the economy and on economic policies. An exposure to the Indian economy is valuable also in a substantive theoretical sense. Indian economy, poor

backward as it may be, is a very complex socio-economic formation because of its long feudal history and colonial rule. It is as though different kinds of economies coexist in it. It is a combination of capitalist and pre-capitalist institutions, of public and private sectors, of formal and informal labour, of sophisticated financial markets and moneylenders and pawn brokers, of production for the market and for subsistence, and of survival and profiteering. It is also a combination of liberal democracy and authoritarian social structures. A school student who can identify economic processes and issues for economic policy in such a society would be ready for a study of any economy in the world: poor, rich, emerging or transitional; or any system of economic theory: classical, Marxian, Keynesian or neoclassical.The fact that despite its recent economic growth performance India still is one of world's largest concentrations of poverty and deprivation offers a great challenge for economists anywhere. On the other hand, the study of economics by the Indian school student would amount to very little if it cannot ignite her mind about the economic future of 1.2 billion Indians. This is no jingoism.

A curricular outline

If the viewpoint on school economics presented above is found valid, the following curricular schema will be in order:

1. Up to Standard VIII economics will not appear as a distinct subject field. Economic issues taken up, if any, will form an integral part of undifferentiated social studies.
2. Standard IX: The first textbook on economics, titled ProductionandMarkets, will familiarize the student with the real economy. She will discover, through case studies, the diverse conditions under which the production economy operates and how it interacts with the system of exchange.Case studies, data and accounting inform the entire discussion.
3. Standard X: The second textbook, titled MoneyandBudgets, will demystify the monetary and financial system for the student besides introducing her to the economic role of the state. She will discover how the monetary-financial system interacts with the real economy. Apart from RBI data, case studies on insurance and informal credit markets will be used.
4. Standard XI: The third textbook, titled TheClosedEconomy, brings together the real economy and the financial system to round off the shape and structure of the entire domestic economy. The student should see how public policy mediates economic growth, employment, income distribution, prices and poverty. Inter-relations between macroeconomic variables will be explained through simple statistical correlations run on time series data sets.
5. Standard XII: The fourth and final textbook, titled TheOpenEconomy, will place the economy in an international context. It extends the discussion to include foreign trade, capital flows, exchange rate and payments and how these interact with the domestic economy and long-term national objectives of economic development.

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3.2 TEACHING ECONOMICS TO BEGINNERS THROUGMATHEMATICAL TOOLS.

Abstract: This paper seeks to examine the view that pedagogical practice of teaching economics at the 10+2 level can be supplemented by mathematical tools where the clarity in the concepts will be greatly enhanced by the introduction of mathematical inputs comprising algebra and calculus. For that purpose it attempts to navigate through the economics curriculum of National Council of Education research and Training and identifies the themes where mathematical tools can be usefully introduced as a major approach in contrast to the traditional one. Based on the findings, it suggests the capacity building of the teachers to deliver the course material more effectively.

I. Introduction

Despite the increasing presence of mathematical tools in economic analyses, teaching of economics to beginners still remains confined to traditional descriptive techniques going to the extent of using only graphs. Consequently, the training induced analytical skill of describing an economic problem without generation of sharp solution persists among learners and improvement in scientific approach for generating results fails to accelerate due to poor grounding. There is therefore a need for introduce mathematical tools at initial school level of economics teaching.

A basic problem in the practice of teaching economics at high schools of developing countries in general and India in particular which is difficult to overlook is the syndrome of what a teacher does not know is not important to be considered for teaching. Since the teaching in many schools remains teacher centric, the knowledge base of the teachers emanating from the traditional approach of descriptive rather than problem solving-type results in keeping the recent developments of mathematical tools out of the classroom purview. Notwithstanding the fact that most of the 69 Nobel laureates in economics with the exception of three to four have achieved the feat by adopting mathematical techniques in analyzing the economic problems, the usual classroom response conveyed is students' inability to cope with mathematical tools in economics teaching. Such a response could be traced back to inadequate exposure of teachers and textbook writers to use mathematical techniques rather than the problem of students' comprehension.

To keep pace with the recent developments in economic thinking the approach to teach economics at the beginning may have to be reviewed taking into account the teacher's preparedness rather than only projecting students' limitations understanding economics discussed with mathematical tools. The specific areas of school level economics curriculum where use of mathematics is likely to facilitate better understanding may have to be identified and expertise of the teachers in such themes, if not already acquired, must be supplemented to help improve the existing practices of teaching.

The present paper seeks to examine the existing economics themes covered in the high school 10 plus 2 level) and identify the areas where use of appropriate mathematical techniques can be used while imparting education to students. A crash course of mathematical tools to be used will be suggested for improving the some of the teachers' preparedness to teach the student.

Keeping in view the above consideration the paper present four sections as follows: Section II gives some stylized facts of economics theory as available in the existing literature. The succeeding section (Section III) deals with the prevailing economics course structure of National Council of Educational Research and Training (NCERT) for the classes X, XI and XII and identifies the themes

that have the potential for the inclusion of mathematical techniques. Section IV takes up the mathematical tools which may be included against the present course materials and presents the crash course of mathematical techniques. The final section presents the summary and policy inputs.

II: Some Stylized Facts of Economics Theory

Analysts dealing with economics attempts to find answer utilizing the framework offered by economic theories. The underlying methodology by now has offered results that have entered textbooks (see, Andrew and Bernake, 2001; Archibaldand Lipsey ---; Besanko and Braeutigam 2005; Boulding, 1948; Fusfeld, 1980; Henderson and Quandt, 1958; Kreps, 2012; Kreps,1990; Samuelson 1983; Snyder and Nichoson, 2008; Varian, 1989; Varian, 2003; Wainwright and Chiang; 2005; Tian, 2013). The following observations present a set that can be found in study materials dealing with economics theory. For example, the sequence of the following presentation can be found in Tian, Guoqiang(2013)

- Economics studies individuals' economic behavior such as consumers and producers making trade-off choices that allocate limited resources among competing uses.
- Making trade-offs becomes inevitable as people's desires are unlimited, but resources are limited.
- There are two basic economic institutions, market economy and planned economy, through which the economic systems run and strive to decide on the following issues:
    i. Types of goods and services that should be produced and quantity of production.
    ii. Ideal method of producing the product.
    iii. Product should produced for whom and method of its be distribution.
    iv. Agent on whom the decision making responsibility lies.
- Market economy functions through price mechanism and most decisions on economic activities are made by individuals.
- Planned economy operates through a centralized decision system and most decisions on economic activities are made by the government.
- Economics make economic predictions based on economic theories.
- Economic theories are developed to explain the observed phenomena in terms of a set of basic assumptions and rules.
- Assumptions made while studying economic problems are:
    i. Individuals are rational;
    ii. Resources are scarce;
    iii. Information is incomplete or asymmetric;
    iv. Economic freedom to exercise voluntary cooperation and exchange;
    v. Incentive compatibility mechanism to solve the problem of interest conflicts among economic units;
    vi. Well-defined property rights;

vii. Equity in opportunity; and

viii. Allocative efficiency of resources

- Any inquiry in economics comprises raising an economic question to find answer through formulation of a model and providing policy suggestion, if relevant.
- The framework used for such analysis while studying economic issues involve five basic steps, viz
    i. Imposition of behavioral assumptions: A key assumption economists make about an individual's behavior is that an individual is self-interested.
    ii. Adoption of economic institutional arrangements: Economic arrangements decide depicting the rules of the game such that an individual operates in a competitive market which decides the outcome.
    iii. Determination of Equilibria: A state that determines the best outcome given the economic environment and institutional arrangement. There are other constraints such as technical, resource, and budget which influence an equilibrium outcome.
    iv. Evaluation: Use of a criterion that produces the first best choice, i.e., efficient outcome.
- Analyzing an economic problem using an analytical framework helps in generating consistent conclusions.
- Methodologies are used such that economic issues are analysed following the tenets of some basic economic principles. Some examples are:
    a. consumer and producer theories provide a path to be followed for studying individuals independent decision choices.
    b. The general equilibrium theory draws inferences by integrating the theories of consumers and producers. In the process it provides a basis for studying interactions of individuals within a market institution and how the market equilibrium is reached in each market.
    c. The mechanism design theory offers insight on is provides an even higher level of studying an economic institution. Thus it helps compare various economic institutions and identifies the one that may be an "optima".
- Reference Systems: Economic analysis provides scope for comparison between two systems, a real world and an ideal status. For instance, in the general equilibrium theory compares equilibrium outcomes under various market structures with the ideal case of the perfectly competitive market. In another case, the first-best choice in a complete information economic environment is contrasted with the scenario of incomplete information. Such a process helps find mechanism for the development of theories with better precision.
- Economic theories or models sometimes start with unrealistic assumptions. Despite these, results generated are proved to be useful and can be utilized to make further analysis. Similarly, while a reference system may not be able to explain the real world, it provides benchmark for developing new theories which can explain the reality better.
- Analytical Tools: Economic analyses have generated a number of analytical tools taking the help of geometrical or mathematical models. With such tools complicated economic behavior

and phenomena are solved. In this context we may recall the examples like the demand-supply curve model and the game theoretical model.

- Theoretical Role: An economic theory performs three types of roles:
  (i) It can be used to explain economic behavior and economic phenomena in the real world.
  (ii) It can make scientific predictions or deductions about possible outcomes and consequences of adopted economic mechanisms when economic environments and individuals' behavior are appropriately described.
  (iii) It can be used to refute faulty goals or projects before they are actually undertaken.
- Generalization of a Theory: Inferences on universal nature of the theoretical insight are used to project laws of economics(viz., law of demand or law of variable proportion). However, it is seen that when theories have been developed by taking more general assumptions more useful insights have been thrown. The general equilibrium theory is considered such a theory.
- Limitations of Economic Theory: As economic theories are developed on the basis of assumptions, there is a direct link between usefulness of a theory with usefulness of assumptions which have boundaries. Therefore, every theory is not universal and cannot explain everything. However, their facilitation in enhancing our understanding of the economic phenomenon cannot be ignored. Testing the theories in the real world and incorporation of modification or refinement remain central to the development of economics as a science. To see the merit consider the case of the assumption of perfect competition. We know that no competition is perfect. However, the models of perfect competition have generated insights about real-world markets. Relaxing the assumptions of the theory, new theories have been developed to capture the behavior of agents in imperfect market structure. Thus, while applying a theoretical result to real world boundary of a theory must have been be known. Without such a precautionary measure recommendations based on a theoretical model are likely to be erroneous.
- Economics uses mathematics as a tool to model and analyze various economic problems. The accuracy of predication and postulation of cause and effect relationship among economic variables are measured and tested with the help of statistics and econometrics.
- Mathematics used in economic analyses is mostly algebra, calculus and statistics. While algebra is used to make computations such as total cost and total revenue, calculus is used to find the derivatives of utility curves, profit maximization curves and growth models. Statistics facilitates the forecasting and also determines the probability of occurrence of an even.
- Role of mathematics in theoretical formulation is seen due to attempts of making prediction about
  (i) what will happen in a market and
  (ii) the conditions under which the event will occur in the market.

Moreover, precise statements help resolve debates and make logical but counter intuitive results acceptable. Logically inconsistent statements are made easier to check. In other words, the language used in mathematical approach facilitates providing a framework such that

(i) boundary of a theory can be found;

(ii) reference systems can be identified; and

(iii) analytical tools can be employed.

From the above discussion it is apparent that economic analysis proceeds through framework to derive conclusions on economic issues making prediction and offering policy suggestions, if relevant. For that purpose it relies on theoretical models developed by making assumptions on the economic system and agents in it. The results generates depicts the scenario of an idealized state in equilibrium which can be put to comparison with real world situations. New theories are developed through introduction of refinements in assumptions which are capable of offering better insight compared to old theories. Since making predictions on the economic events and behavior of economic agents remain important objective of economic theory, precise statements of the variable of analysis is an essential requirement. The language of mathematics satisfies such requirements and economists use mathematics as a tool in their analyses.

Keeping in view the above observations an attempt will be made in the next section to navigate through the economic themes offered to beginners. The economics courses of NCERT recommended for 10 pus 2 classes will be examined to assess the scope of introduction mathematical tools to be taught to the students.

III. Contents of Economics Studies in NCERT

The National Council of Educational Research and Training (NCERT) was set up by the Government of India in 1961 to assist and advise the central and state governments on academic matters related to school education. It was entrusted, along with others, the following responsibilities:

(i) Implementation of National Curriculum Framework;

(ii) Production of teaching-learning experience;

(iii) Improvement in teacher education;

(iv) Improvement in cognitive ability of student.

As a part of its implementation of national curriculum framework, NCERT has published a set of economics textbooks which includes those of three classes X to XII. The content structure of economics courses is given in the following Table 1:

It may be seen from the table that learners at Class X (see, NCRET, 2006a) are introduced to economic development from a historical perspective. Emergence of economic activities overtime describes the process of development. The character of analyzing development through the lens of economic methodology is evident when attention is paid to measurement of development through indicators. In the process the economic activities have been grouped under primary and secondary sectors and an assessment of economic development is undertaken to put forth the idea of division of labour. With the progress in development, the modern economic structure is found have taken over and tertiary sector along with the primary and secondary sectors has emerged. The rising complexity of the structure in course of development is simplified through identification of measurement indicators by classifying the economic activities into organized and unorganized, private and public sectors.

Dealing with the role of money in the economy, students were led to know the intuitions like banking and credit systems. The prevalence of informal credit market in India was pointed out and dependence on credit for productive investment as well as its adverse impacts such as vicious cycle of indebtedness, poverty and debt-

trap was discussed.

Table 1: Contents of Economics Courses of Class X to Class XII in NCERT	
Class X: Understanding Economc Development	
Themes i) Economic Development ii) Sectors of the Indian economy iii) Money and credit iv) Globalization and Indian economy v) Consumers rights	Select Basic Concepts with Quantitative Attribute Development indicators productive investment, poverty
Class XI: 1. Indian Economic Development; 2. Statistic for Economics	
Development Economics **Themes** i) Development Policies and Experience (1947-1990) ii) Economic Reforms Since 1991:- Liberalization, Privatization and Globalization iii) Current Challenges Facing the In dian Economy:- Poverty, Human Capital Formation in India, Rural Development, Employment, Infrastructure, Environment and Sustainable Development iv) Development Experiences of India: A Comparison With Neighbors	**Select Basic Concepts with Quantitative Attribute** Balance of Payment, budget deficit, cash reserve ratio, deficit financing, devaluation, gross domestic product, infant mortality rate, inflation, life expectancy at birth, mortality rate, per capita income, poverty line, productivity, Statutory Liquidity Ratio, worker population ratio
Statistics for Economics **Themes** i) Collection of Data ii) Organization of Data iii) Presentation of Data iv) Measures of Central Tendency v) Measures of Dispersion vi) Correlation Index Numbers vii) Use of Statistical Tools	**Selective Basic Concepts with quantitative attribute** Mean, bimodal distribution, bivariate distribution, correlation, frequency distribution, mid-point frequency curve, multi-model distribution, non-sampling error, percentiles, range, univariate distribution, weighted average

Table 1: Contents of Economics Courses of Class X to Class XII in NCERT (Contd.)	
Class XII: Introductory Microeconomics and Introductory Macroeconomics	
Introductory Microeconomics **Themes** i) Theory of Consumer Behavior ii) Production and Costs iii) Theory of Firm under Perfect Competition iv) Market Equilibrium v) Non-Competitive Markets **Introductory Macroeconomics** **Themes** i) National Income Accounting ii) Money and Banking iii) Income determination iv) The Government: Budget and the Economy v) Open Economy Macroeconomics	**Select Basic Concepts with Quantitative Attribute** Average fixed and variable costs, average revenue, budget line, constant- , increasing- and decreasing-demand curve, concave and convex curves, cost function, demand function, equilibrium, income and indifference curve, isoquant, marginal product, marginal revenue and costs, marginal revenue product, market demand and supply curve, monotonic transformation, price and income elasticity of demand and supply, price line, production function, profit, value of marginal product, set, slope, substitution effects, supply curve, returns to scale, rectangular hyperabola **Select Basic Concepts with Quantitative Attribute** automatic stabilizer, expenditure multiplier, bank rate, cash reserve ratio, circular flow of income, consumer price index, currency deposit ratio, fixed and floating exchange rates, equation, GDP deflator, gross national product, primary deficit, income and expenditure methods of national income calculation, liquidity trap, macroeconomic model, marginal propensity to consume, money multiplier, Net investment, Net national product, nominal exchange rate, disposable income, nominal GDP, paradox of thrift, present value, revenue deficit, statutory liquidity ratio, transaction demand, value added, wholesale price index

Consequence of increased developmental activities and requirement of integration of economic systems with the world market under the process of globalization was included with observations on its impact on Indian economy and deliberated upon for the benefit of the learners. The closing chapter of the course made them aware of their rights as consumers and provisions of protecting themselves from business malpractices through special consumer courts.

On the whole the course attempted to make the beginners understand the processes of economic development relying on the historical backdrop and case studies. The idea that economic development would have to be understood through a set of development indicators and classification of complex structure into simpler ones could set the stage for quantification of variables for analyzing issues in an economic framework. Such a move could also have helped as a nice backgrounder for appreciating the next course on Indian Economic Development in Class XI (see, NCERT, 2006b).

The economics courses in Class XI comprise two papers viz., Indian Economic Development and Statistics for Economics (see, NCERT, 2006c). It is comprehensible that introduction to statistics, with a primary focus on data collection, presentation and summarization, spells out the requirement of quantitative techniques for economic analysis. To familiarize the students with the basic

tools of empirical data analysis with the concepts of data tabulation, mean and dispersion, correlation and index numbers seem essential to appreciate the themes to be covered in other paper, Indian Economic Development that exposes them to a good deal of numerical issues.

Indian Economic Development, the remaining paper of the two being taught in Class XI, tries to educate the learners on Indian economy and its economic policies. The resource base of the country and its utilization may provide an opportunity to appreciate the development process and to acquire skills to enrich students' analytical faculty. Topics such as Five Year Plans, allocation of funds to different sectors in accordance with sectoral policies, special attention to priority areas to like poverty, regional imbalance, infrastructure and rural development, initiation of economic reforms to integrate the economy with the world market are expected to familiarize the students with policy formulation and implementation processes. The repercussion of the Indian economic development on the environment and its sustainability included in the course would result in improving the awareness of the learners on a burning issue confronting the economies world over. The closing section of the course draws the attention of the students on the developmental experience of two neighboring economies, viz., Pakistan and China and presents before them a comparative perspective with that of India. Underlying objective of such an attempt could be imparting the skill of evaluating developmental processes through different benchmarks for drawing inferences.

Viewed from a quantitative knowledge base for grasping the concepts used while discussing the policies of Indian economic development, a student must have learnt, to cite a few cases, derivation growth rates (used in, for example, sectoral growth rates), computation of real per capita GDP, estimation of poverty line and its trend, besides application of ratios. While the course offered on statistics along with this course may be helping students, a review of economic application of some arithmetic concepts would be helpful. A list of quantitative attributes given in the table above may be seen to appreciate preceding observation.

Economics students of Class XII encounter theoretical concepts which form the basis of economic analyses through two courses, viz., Introductory Microeconomics (see, NCERT, 2007a) and Introductory Macroeconomics (see, NCERT, 2007b). The course on Microeconomics covers consumer and producer behavior, theory of firm under perfect and imperfect competitions. The learner is exposed to decision making tools of economic agents and determination of price and quantities under different market conditions. Introducing the basic concern of economics to study choice and decision making in a world of limited resources, the course points out the production possibility frontier with possible organization of economic activities in the institutional arrangement of market and centrally planned economies. The consumer, being rational, maximizes utility subject to her budget constraint. In the process of finding solution to such a problem, the study materials demonstrate the concepts such as budget line, indifference curve, consumer's optimum, derivation of demand curve and the law of demand along with a feature like elasticity of demand. Under next two chapters viz., production and cost, and theory of firm under perfect completion, students get to know the producer's behavior of profit maximization. This behavior is studied starting with the activity of production wherein costs are incurred by the producer and revenue is earned on the sale of the product. The difference between revenue and cost gives profit whose maximization is the objective of the producer. The way economics solves the problem of profit maximization offers scope for students to learn the concepts of production function, isoquant, short- and long-run classification of time period, total, average and marginal product, cost as well as revenue. The laws of diminishing marginal product, law of variable proportions, returns to scale, technique of profit maximization,

supply curve of a firm, market supply curve and price elasticity of supply are covered in the process. Building on the base of consumers' and firm's behavior results, market equilibrium analysis is given at the next chapter by bringing together demand and supply. Relaxing the assumptions made under perfectly competitive market structure to determine the price and quantity in equilibrium, the analysis is extended to non-competitive markets of monopoly, monopolistic completion and oligopoly in the closing chapter of the course.

Needless to point out that the nature of investigation undertaken in the microeconomics course requires quantitative tools to draw conclusions. The study materials make use of graphs and equations extensively using, though sparingly, the notation like function y=f(x), production function q=x_1^□ x_2^β, rectangular hyperabola equation form: xy=c, and Δ to denote change. A list of terms, not meant to be exhaustive, having quantitative attribute found in the course is given in the table above which indicate the inroad made by mathematical language into microeconomics analysis. If such a direction is followed and differential calculus is used in the present text, there will be improvement in the derivation of conclusions of the theoretical themes.

Another course offered in the class along with microeconomics is macroeconomics. Students get to know the decision making process with the aggregate economic variables like levels of output, price or employment of an economy and the way such levels are determined for the country as a whole. Moreover, learners also understand the interlinkages between different sectors like industry and agriculture or household and government. Contrasting with concerns of microeconomics which deals with individual economic agents, macroeconomics presents before them the broad scenarios like prices in the economy are rising or falling, the employment generation of the country as a whole is getting better or worsening.

Themes offered to students in the course starts with calculation of national income describing the methods of product or value added, expenditure and income. In the process, concepts of circular flow of income and macroeconomic identities, real and nominal GDP, GDP deflator, consumer price and wholesale price indices are covered. The succeeding chapter takes up discussions on money and banking dealing with functions of money, demand and supply of money, money creation by banking system and money multiplier process, instruments of monetary policy and Reserve Bank of India. Important concepts such as transaction and speculative motives in demand for money, velocity of circulation of money, liquidity trap, high powered, narrow and broad money, reserve deposit ratio and cash reserve ratio and bank rate are explained. Forces governing the values of macroeconomic variables such as slow growth in the economy, increment in the price level or a rise in unemployment are deliberated in the chapter entitled, Income Determination, and the primary answer tried to be obtained is the determination of National Income. The important concepts that enter the set of learning kit after going through this lesson are aggregate demand and supply, marginal propensity to consume, effective demand principle, marginal propensity to save, ex ante and ex post investment, parametric shift, autonomous change, multiplier mechanism, output multiplier, paradox of thrift and autonomous expenditure multiplier. The course deals with government budget as the next theme. With a brief introduction on the rationale behind government intervention due to existence of public goods, externalities and market failure, discussion starts with components of government budget and fiscal policy. Concepts like allocation and distribution functions of the government, automatic stabilizer, revenue and capital accounts, plan and non-plan expenditures, measures of government deficits - revenue, primary and fiscal, lump-sum taxes, discretionary fiscal policy and Ricardian equivalence are defined while presenting the chapter to students. The last chapter of the course discusses the open

economy macroeconomics when a country trades the rest of the world. The learning objects of the students in this part of the course are balance of payments, foreign exchange market and determination of income in the presence of an external sector. The concepts like degree of openness, trade deficit, current account deficit and surplus, capital account, BoP surplus and deficit, exchange rate, nominal and real exchange rate, nominal and real effective exchange rates, purchasing power parity, floating exchange rate, net exports, marginal propensity to import, interest rate differential, devaluation and open economy multiplier are conveyed to learners.

Discussion of the introductory macroeconomics course invokes a good deal of conceptual issues and solution mechanism of the problems at hand which require use of algebra as a tool of analysis. A selective list of concepts with quantitative attributes appearing in the course is given in the table above. It can be seen from the book that use is made of the of operator $\sum$ (summation) to explain the GDP as follows: GDP≡Sum of the total gross value added of all the firm in the economy≡ $GVA_1 + GVA_2 + ... + GVA_N$ This presentation leads to get $GDP = \Sigma_i^N = GVA_i$

Or,

in expenditure method of GDP calculation depicting the sum total of the revenues that the firm i earns is given by

□RV□_i≡Sum total of final consumption,invement,government and exports expendituresreceived by the firm

$$RV_i = C_i + I_i + G_i + X_i$$

Since there are N firms, summing over them we get,

$$\Sigma_i^N = {}_1 RV_i = \Sigma_i^N = {}_1 C_i + \Sigma_i^N = {}_1 I_i + \Sigma_i^N = {}_1 G_i + \Sigma_i^N = {}_1 X_i$$

It is important to understand that such presentation presupposes the readers (both teachers and students) have an understanding of summation operators. There are a number of instances in the book, where it is expected the readers to have familiarity with the language of mathematics. A formal exposition of mathematical tools for economics as a prior requirement to cover the course is therefore expected to act as a facilitator.

The above discussion on NCERT economics course for Class X to Class XII indicate the use of methodology found in economic analyses to (i) take the help of classification of economic variables of a complex struc ture to make these amenable to assessment through quantitative indicators as found in Understanding Economic Development and Indian Economic Development, (ii) use mathematical language as a tool to explain the themes in microeconomics and macroeconomics theories. While the present texts use extensively graphs, equations and algebra in explaining the theoretical contents, use of differential calculus which could have facilitated the discussion more effectively has been side tracked. Since the language of mathematics has already been used in the texts, it may not be out of context to assume that such a knowledge base for both teachers and students is already presupposed. It would therefore be useful to make explicit mention of the requirement of exposure to high school level algebra, geometry and calculus to cover of courses of economics and offer a resource base of use of mathematics for economic analysis. Such a resource base is expected to help both teachers and students as a ready reference.

IV. A Crash Course on Mathematical Tools for Beginners in Economics

From the discussion of the preceding section it is evident that concepts of graphs, equations, algebra and functional representation are already used in micro and macro economics. Keeping in view the coverage of the themes in introduction to microeconomics (see NCERT, 2007a), addition of differential calculus along with those concepts would help learners in reaping the benefits like,

- development problem-solving skills;
- thinking clearly to make a statement formal by translating weak verbal arguments into precise, consistent statements;
- becoming familiar with the language of used in modern economic analyses; and
- appreciation of the power of economic theory.

In order to facilitate the learning process the themes of algebra, equation, geometry and differential calculus may be kept together to form a unified course on mathematical tools for beginner in economic analysis.

A course structure of the theme that could be included is presented below:

1. Sets, Functions, Limit and Continuity: Functions; Graph of a Function; Bounded Functions and Their Bounds; Monotone Function; Inverse Function; Types of Function; and Concept of Limit.
2. Derivatives: Geometrical Interpretation of Derivatives; Differentials; Higher Order Derivatives; Application of Derivatives; Slope and Curvature of a Function; Taylor's Series; Mean Value Theorem and L ' Hospital's Rule.
3. Partial Differentiation: Partial Derivative; Higher Order Partial Derivatives; Cross-Partial Derivative; Total Derivative; Derivatives of Implicit Functions; Application in Economics; Homogeneous Functions and Their Properties.
4. Extreme Value optimization: Maxima and Minima; Identification of Maxima and Minima; Point of Inflexion; Conclusive Criterion; Extreme Values of Multivariate Function; Sufficient Condition for Extreme Values; The Case of Extrema with more than Two Variables; Function of Three Variables and Extrema; Function of n Variables and Extrema.
5. Unconstrained Optimization: First Order Condition; Second Order Condition; Some Economic Problems.
6. Equality Constrained Optimization; Inequality Constrained Optimization; Simple Economic Problems.
7. Linear Algebra: Determinants: Definition and Concepts; Minors and Cofactors; Properties of Determinants; Product of Two Determinants; Adjoint and Reciprocal Determinants; Symmetric Determinants; Skew and Skew-Symmetric Determinants; Solution of Simultaneous Equation by Cramer's Rule; Consistency of Equation; Matrix: Concept of Matrix; Types of Matrix; Matrix Operations; Equality of Matrices; Addition and Subtraction of Matrices; Matrix Multiplication; Adjoint and Reciprocal Matrices; Trace of a Matrix; Sub Matrices and Minors; Transpose of Sum of or Difference of Matrices; Transpose of a Product of Matrices; and Matrix Inversion.

When covered as a part of economics course, the above themes will provide a unified platform

of the mathematical tools. Further, understanding the necessary and sufficient conditions used in the discussion of economic issues for ascertaining a statement to be true will become easier.

V. Summary and Conclusion

The discussion above tries to look into teaching of economics to beginners with the aid of mathematics which remains a problem in developing countries. Since the economics teaching at high school is largely classroom centric, inadequate exposure to mathematics of both students and teachers works as a stumbling block to accept a switch over from traditional descriptive method to more recent mode of teaching economics.

Some commonly accepted facts on economic analyses indicate that the framework used helps in testing and predicting on what will happen in the market and conditions under which events take place. The methodology used often leads to unintuitive but logically inescapable results and tenets of economic theories help explain the behavior of agents without logical inconsistencies. For following such a line of analysis the language of mathematics because of inherent characteristic of precise presentation become handy.

The textbooks prepared by NCERT for the students of Class X to Class XII follow the ways of thinking economically and try to present issues of economic development through quantitatively measurable indicators and breaking down the complex problems into simpler ones through classification. Statistics dealing with data collection and summarization is offered as a part of economics course. Moreover, themes of micro and macro economics presented taking the help of graphs, equations, algebra and functional representation.

In view of inroad made by mathematical language in the study materials of NCERT, it will be pertinent to strengthen the prevailing trend by supplementing the presentation with differential calculus which has the advantage of making economics problem solution easier and helps learners become literate in the language of modern economics. For that purpose, present paper suggests inclusion of a crash course on mathematical tools for economics analysis for students. Intervention of the body like NCERT may be resorted to enhance the preparedness of teachers through organization of workshop on course.

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3.3 NATURE OF ECONOMICS: REVISITING THE ECONOMICS CURRICULUM AT THE SCHOOL LEVELS

Economics is primarily a social science. This is what we disregard when we teach and so research. We tend to apply economic principles in our decision making on a daily basis without questioning regarding their relevance in a complex society of interconnectedness. Economics as a social science discipline, should not only explain the functioning of the economy and its various economic aspects, it should help build up a cohesive society, and foster citizenship. Mainstream neoclassical Economic theory seeks to model the economic behavior in a narrow way, the self-interested behavior of an individual. Though market is an institution where the conflicting behaviours of the buyers and sellers are resolved, and the market prices giving the right signal to an individual as well as to the economy for guiding allocation of resources at the respective spheres. It is on this basis that the policy makers seek to construct a market based economy as it has been the case since the implementation of the new economic policy in India. What is important for the students, the future citizens of our country is to realize that this is not the only way to model or conceptualise the behavior of the people. There are indeed strong interconnections and interdependences in the society which are essential for community living with fellow feeling,compassion and commitment which transcend the definition of homo-economicus. It is also important for the students to realize that the market fails in many ways which call for government intervention. The concepts of externalities and public good are important for us to understand the role of the government and our responsibilities. It is time that the students are introduced to the concepts of market failure, externalities and public good, role of government and corruption albeit briefly to sensitise the students about their responsibilities as good citizens of the country at their school levels apart from presenting a realistic portrayal of the economic aspects we encounter in the reality.

Introduction

Economics is primarily a social science which essentially deals with the economic aspects of the society.In order to study and understand the social order, mainstream Economic theory focuses on the economic behavior of an individual as the society is construed to be the aggregate of the individuals. In order to develop the understanding of the economy, the mainstream economic theory begins with the conceptualization of the economic behavior of a representative individual who is bereft of caste, gender, religion, culture and other societal considerations which contribute to the making of an individual. It is in the sphere of the market that the individuals are engaged in trading and resolve their conflicting interests.

Though an economy is understood and explained in terms of markets, the present syllabus fails to do justice to the concept of market, its application and more importantly, why does the market as an institution often fail to deliver which necessitates government intervention. We all participate in the market related activities and face government intervention on a daily basis in different spheres of our existence and decision making. To appreciate and understand the economy, it is imperative that the students are exposed to not only the different structures of market but more importantly to develop a critical understanding of the market and the role of the government to deal with many challenges our economy is faced with.

The manner in which economics curriculum is designed at present at the school level, the students are not prepared to be well equipped to grapple with the reality and appreciate what the disci-

pline can do and cannot do to help build up a better economy, a better society and contribute to the making of a cohesive and just social order. It is also important for the students to learn the tools and apply in their decision making. The present curriculum for economics at the higher secondary level fails to address these issues. It is time that we effect necessary changes in the curriculum to make the subject more relevant,useful and interesting. Traditional way of looking at it in the form of teaching the basic micro and macro and a somewhat detailed thrust on national income accounting does not really solve the problem. In this paper an attempt is made to argue how the present curriculum could be revised by incorporating new concepts and themes within microeconomics and macro-economics.

Objectives of teaching Economics at the school level

The core of the society is believed to be the economic core. Accepting this without critical thinking about the discipline can generate a distorted picture of the role of the individuals and the society. Economics is primarily a social science where individuals are not merely individualistic individuals with no interconnections with others in the society. It is only in the sphere of market, that we are self-interest driven and can afford to be so. Market oriented explanation would also capture only a limited aspect of the society. This is what we disregard when we teach and apply economic principles in our decision making on a daily basis.Economics as a social science discipline has also a role to play to construct a cohesive society and build up compassionate and concerned citizen.

The manner in which the present curriculum is designed, a student remains to me mind utterly ill-equipped to understand the real world. The subject does not seek to establish any connections with the other social sciences, like political science, psychology, history and even geography. It is expected that a student should develop working knowledge about the economic reality and she should be able to use her understanding in her day to day decision making. This assumes importance as the rapid spread of internet facilities and inundation with information in our daily life, emergence of various market forms and the government policies which form public debate in the media.

Nature of Mainstream Economics

Mainstream neoclassical Economic theory seeks to model the economic behavior from a narrow perspective by focusing on the self-interested behavior of an individual who is faced with a constraint, for example a budget constraint a consumer irrespective of time and space is quintessentially faced with. Market is lauded to be an institution where the conflicting behaviours of the buyers and sellers are resolved, and the market prices give the signal to the economic agents for enabling them to take right decisions which facilitate allocation of resources. It is on this basis that the policy makers seek to construct a market based economy as it has been the case since the implementation of the new economic policy.

In macroeconomics, the economy is studied as a whole. It is important for us to realize that the economic functioning cannot be understood by understanding the individual only. The economic outcome at the macro level is not the sum of individuals' behavior. This goes against the mainstream type understanding of the macroeconomics which seeks to study the macro as an outcome of the aggregate behavior of the economic agents, the individuals.

It is also important for the students to know that a developing country like India faces a set of challenges which are both micro as well as macroeconomic in nature. India despite rapid growth continues to be a developing economy in terms of social indicators. There are economic factors responsible for our state of development but there are non-economic factors too. The answers to many

of the questions in the development discourse are not often unambiguous and convincing. One has to be objective to assess both sides of the argument. Disagreement is a part of economics discourse and that is why economics is ideological.

Therefore, irrespective of the social factors which constitute an individual, the individual is a representative individual as all the individuals are concerned with their material well-beings at the basic core indisputably. In order to pursue the objective of maximizing consumption, the individual is driven primarily by self-interest. Market is argued to be an institution which resolves social conflict as the economic agents with conflicting interests voluntarily participate in the exchange of goods and services.

A brief history

There was a great divide in the emergence of the economic theory. Earlier, it was Political Economy which was taught in the universities which presented a comprehensive picture of the economy and the society. It was Marshall, Jevons, Walras who gave a shape to the mainstream market oriented economic theory. Though the clue of market as an institution to guide social order and its conceptualisation as an 'invisible hand' was provided by Adam Smith in his magnum opus The Wealth of Nations in 1776, Smith, Ricardo, Mill, Malthus and Sraffa had a different understanding of the economic landscape which was rather comprehensive.

Possible topics for inclusion

The overall approach should be to make the students aware of the importance and relevance of the economic theories the students are exposed to in microeconomics in particular. While discussing market, its possible fallibilities and its irrelevance with real life examples are required to be introduced to the students. While discussing micro, I would like to give emphasis to the following areas of relevance for inclusion in the curriculum. The inclusions could be in the form of boxes and questions which would encourage the students to think, relate and learn.It is also important for the students to realize that the market fails in many ways which call for government intervention.

1. Information asymmetry and price as a signal

In all the spheres of decision making it is implicitly assumed that the decision maker has the adequate information about all the options before the choice is exercised. Without adequate information about the alternative choices, the decision can go wrong. This absence of information becomes an acute problem when the information regarding the quality of the product is not known. This happens when we deal with the second hand product, like second hand cars, or other electronic gadgets or even houses. Moreover, information available and gathered can be potentially misleading and inadequate.

In case the quality of the product is unknown and doubtful we are not certain about the quality of the product which is a pre-requisite. For quality to be certified we need a certificate which vouches for quality by a different party. We are awarded with the certificates after we successfully pass examinationswhich give a signal regardingquality of education and skill embodied in the person. In the consumer goods market, we often repose faith on the brand value of the product. The websites of the manufacturers and the companies give us information about the product. Some of the portals also help us in facilitating the comparison of the products we intend to buy. These days when we actually visit the shop, we are adequately informed about the product. The internet has fostered an

information revolution. Joseph Stiglitz was awarded with the Nobel prizefor his work in the area of information and its relevance in our daily life and in many areas of functioningofthe economy.Some information has to be gathered at a price and some are freely downloadable. We can think of a box on internet and information revolution and information asymmetry.

2. Concept of Externalities

In economic theory, we theorise the economic behaviour of the people under the assumption that the individuals are not affected by others' levels of consumption and production activities. But in reality, itis very important for us torealiseand appreciate that there exist myriad interconnections in consumption and production.As we are affected by others'consumption and production, similarly our consumption and productioncould affect others both positively and negatively. When we burn crackers, we pollute the air we all breath. Those with breathing problem, suffer the most. When play themusic at a high pitch, we cannot afford to assume that others are also enjoying the music we are playing. When we throw garbage on the road but not in the bins earmarked, we pollute the atmosphere and make the roads dirty. For a peaceful happy coexistence in the society, it is important that we realize how we all are interconnected in the society and should respect our inter-dependence. When our levels of consumption affect others positively, we are said to be generating positive externalities for others and when our activities hurt others, we generate negative externalities. Though it is argued that market exists to resolve conflicting objectives of two different parties, but in the majority of such cases of externalities, markets are actually missing. So there cannot be any valuation of the product or the activities generating externalities and so there does not exist any possibility of resolving the conflicts. Ifthe individuals concerned and affected meet each other there could possibly be a solution amongst them. But in the majority of the cases the markets do not exist. Hence it is the task of the government to intervene in the economy in the form of taxes if the activities, production and consumption areto be discouraged or subsidised if the activities are to be promoted. For example, primary education and primary health are to be subsidized whereas pollution and smoking are to be taxed. Some films are often made exempt of entertainment taxes to promote national interests. Khadi products are subsidized by the government. In some states alcohol consumption is banned and in some states alcohol consumption is permitted but heavily taxed.

What is important for the students, who are the future citizens of our country, to realize that self-interest driven individuals can help achieve the social optimum when there are no interdependence in the society. Even consumption of some goods which are apparently private areactually not. There is an urgent need to recognize such strong interconnections and interdependences in the society which are essential for community living, and inculcate compassion and commitment which transcend the definition of calculational rationality of homo-economicus.To understand the society based on market has a tendency to severe the link between market based economic considerations and the society and the market from nature. Rampant use of plastic bags despite ban is an essentially an exampleofmarket failure.

3. Public good

Public goods are typically the examples of externalities but it is an extreme case. In our market based economic analysis, we only deal with private goods. Once we consume a private good, the same amount of the good is no longer available to others. If we eat a piece of pastry or bread, the same bread or the pastry is not available for others for their consumption. But there are a wide

range of goods that we need to consume and whether we realize it or not, they are essential for our existence, which are not private goods. These are the goods we collectively consume. Street light or a light house or a national highway or state administration for examples, police and defense are the examples of public good. In these cases, market cannot function as it is often difficult for the supplier or the provider to exclude the consumer for non-payment for his or her consumption. If the consumer is aware of the fact that she could be a free rider, it is a natural tendency to free ride. In that case, cost of provision of the goods will remain uncollected and the provision cannot be sustained. Though the service or the good is collectively consumed, there are cases where exclusion is possible. FM transmission could be made excludable but it is not whereas the TV transmission by private profit making service providers is made excludable and the service is paid for to recover the cost of operation and sustain its delivery. As long as there is no congestion, the highway is also an example of public good where toll is tax is levied to recover the cost of the construction. If the collective consumption of the good is desirable or beneficial for the society, the government would not exclude the consumers even if it is possible. For defense, it is just not possible to exclude those citizens who did not pay for the defense services specifically. Sometimes articles are downoadable and the product is made available free of cost and and sometimes the film, music or research articles are priced.

If the good is collectively consumed and the consumers could not be excluded from its consumption, the good is called a public good like defense or street light or light house. Since the cost of provision of these goods can not be recovered by pricing these good and services, the government has to make arrangement for the provision of these goods by levying taxes on the people.

There are some goods which are private in nature though the goods or resources are collectively owned in the sense that consumption of one's would lead to the depletion of the resources and hence less is likely to be available for others but exclusion is not possible. Fishing in the river or the sea or the common grazing land in a village. There is a likelihood that these resources are quickly depleted as there is a natural tendency to maximize consumption. It is a matter of concern that the stock of sharks and whales in the sea are steadily getting depleted. These are called common property resources.

There are goods, provisionsof which deserve merit irrespective of what people prefer. Often we are myopic and refuse to envisage the future. We continue to believe that our own individual action would indeed have no effect whatsoever or at the most a marginal effect and hence it can be ignored. What is forgotten that allothers could do the same and in the longerrun the society and the economy would collapse and the production would become non-viable.The government does not leave it to the public to decide how much would they like to consume but take appropriate policy decisions to rein in unsustainable tendencies to secure the future.

4. Role of government and federalism

We read in the paper about the deliveryof public services and a variety of taxes that are imposed by the central government, the states and the local bodies. There is a rational behind designing of the fiscal federal set up. Central government levies income taxes and taxes on production. States levy taxes on sales, entertainment and other state specific items. The local bodies, the municipal corporations also impose taxes on certain items and deliver basic goods that the community needs to consume. In general there are imbalances in their revenues and expenditure commitments across the states which are horizontal in nature and across the vertical tier of the governments, the centre, the states and the local bodies. The Center sets up the Finance Commission every five year to examine the issues of

fiscal transfer. The 73rd and 75thAmendments of the Constitution seek to empower the local bodies through elections to serve their respective jurisdictions.Then there is Planning Commission to make plans every five years for the nation as a whole and the states in collaboration with them.

5. Subversion of economic principles: exploitation, irregularities and corruption

In view of an increase in the spate of corruption, scams and frauds and the media coverage, it is imperative that the students understand the economic aspects of corruption and why it is detrimental to our existence and the society. There has been an increasing tendency amongst the youths to rationalize corruption and highlight the positive side of corruption. Society is breaking apart because we are pursuing our self-interests but at the expense of others and the society as a whole. We feel alienated from the society and refuse to see the larger picture and how we ourselves are on the verge of being hit if everybody behaves in the same manner by taking recourse to unfair means. Corruption and illegal generation of incomes, often referred to as black incomes have become systemic and systematic. On the top of it, there are glaring misconceptions in the reports and the media about corruption, black money and the black economy, the factors responsible and remedies we can think of.

There is often a tendency to resort to unfair practices and rationalize it by arguing that taking recourse to corrupt practices was possibly the best way out of the problem. People avoid and evade taxes to generate illegal incomes. In one of its first model to understand tax evasion, the tax payer is portrayed to be a rational economic agent with no scruples. It is important for us to realize that any violation of law is ultimately detrimental to the interests of the society. Though it may appear that the individual gains in the process by taking recourse to unfair practice, the society as a whole suffers and the tax evader unknowingly becomes the victim. Bribery it seems lubricates the process, but it is important that the bribe is extracted by hindering the normal delivery of services. If we pay bribe, we foster the culture of bribery and we become the victims. What is due to us in the normal process, are denied.

While corruption is essentially the abuse of public power, in the economy there are a series of illegalities which are performed outside the realm of the government. Though there is a general tendency to malign the government as inefficient and corrupt, but illegalities are performed in the private sector as well when taxes are evaded.

The concept of black money is different from that of the black economy. When taxes are evaded, black incomes are generated. The generation of black income means that the government collects less taxes, and ability to spend on social welfare and physical infrastructure is badly impaired. The country is deprived of investible resources as savings out of black incomes are parked in unproductive activities and stashed away in the foreign banks. Corruption leadsto wide spread policy failure. Often it is argued that excessive rules and regulations are the factors behind black income generation. While it is understandable that rules and regulations for example the tax laws should be simplified to the extent possible, it is afterall a questionof moralty. In some countries like Norway, people pay taxes honestly even if the tax rates are on the higher side. In other developed countries, role of morality in the payment of taxes has been found to be important.

6. Ethics and Morality in Economics

In fact the mainstream economics has evolved and now being overwhelmingly followed in the text books world over has distanced itself from ethical considerations. Market resolves the conflict between being self-interest driven and at the same time helping the society to achieve what is opti-

mum. It is important for us to make people aware that we also should show concern and respect in our conduct for others in the society and the process, how we achieve what we intend to achieve. Social norms and culture which frame an over-arching framework for us to behave varies from country to country and from region to region. Other than economic factors, social norms, and values, importance and rights and entitlements, agency and freedoms are extremely important. We should not be guided all the time by our self-interest and get ourselves disconnected and distanced from the larger society. It is we who will suffer and pay the price for our indifference and self-centeredness.

Concluding remarks

It is time that the students are introduced to the concepts of market failure, externalities and public good, role of government and adverse effects of corruption albeit briefly to sensitise the students about their responsibilities as good citizens of the country even at their school levels. The students will be concerned as well as equipped with the economic concepts and the tool to guide their decision making. The students should understand and appreciate the role of the government and take safeguards to prevent inefficiencies and unfair practices from creeping in. We become responsible when we realize what the government does for us and what the government is failing to do in our democratic system. Incorporation of certain concepts and real life issues will go a long away to make the discipline of Economics meaningful and interesting for the future citizens of the country.

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3.4 LEARNING ECONOMICS IN SHOOLS- A DYNAMIC CURRICULUM FOR EMPOWERMENT OF CHILDREN

It is essential to improve the quality of education for handling challenges of a dynamic society by streamlining the knowledgebase of the learners to make them wiser. In India, majority of students end up at or before the secondary level. Hence curriculum redesigning and pedagogical intervention for empowering children at elementary/secondary levels through capability enhancement are considered essential. Such school-drop-outs should acquire basic functional knowledge of Economics to take economic/financial decision independently. At the higher secondary stage, students should acquire theoretical knowledge on economic concepts along with higher functional knowledge. The non- utility tag attached to Economics as compared to physical sciences can be eliminated only when the approach to its teaching/learning changes. Textbooks based on NCF 2005 made paradigm shift in approach to learning, but learning Economics can be made more relevant and meaningful by further shifting the focus from mere understanding to capability enhancement. This paper suggests changes in curriculum and pedagogy of Economics that are required at different stages after analysing the present textbooks. Each such change is suggested along with the rationale.

Learning of basic economic ideas and activities is to be introduced at the elementary stage. Introduction of utility based content at the secondary stage should be done to create awareness and for imparting functional knowledge on activities like alternate channel banking/financial products, banking frauds and security, financial inclusion, accounting, budgeting, payment systems, taxation system/structure, consumer awareness, cost-benefit analysis, inventory management, retailing and trading skills, direct cash transfer, client management etc. At this stage weightage on concept attainment is to be restricted to 15%-20% of the total knowledge domain. At higher secondary stage scope for detail conceptual study for understanding of the economy must be there along with functional knowledge. Weightage on concept attainment at this stage should be 30%-35%.

Introduction

Skills and knowledge are the driving forces of economic growth and social development of any country. They have become even more important given the increasing pace of globalization and technological changes. Countries with higher and better levels of skills adjust more effectively to the challenges and opportunities of such changes. In knowledge economy, the skill sets can range from professional, conceptual, managerial, operational, and behavioural to interpersonal skills and inter- domain skills. Economics is one such subject which can provide a number of skills and knowledge to students at secondary and senior secondary stage empowering them to be productive members of the society. Particularly through economics curriculum, financial literacy can be spread among school students which have become a minimum requirement to handle day to day financial activities and to take correct financial decisions independently. In India, majority of students end up at or before the secondary level. Therefore, functional knowledge and skill development acquired during these years should empower them to handle day to day activities effectively and to make them aware about society, governance etc. as a responsible citizen. To achieve this we need to relook at the curriculum as a whole. This paper suggests introduction of economics curriculum at Elementary stage and certain modifications at the Secondary level. This also necessitates some modification at the senior secondary level to maintain continuity. The Curriculum is to be developed with three types of contents, i.e. dynamic, functional and conceptual, of varying proportions depending on objectives and needs keeping in view the changing economic and financial scenario/environment.

Objectives:

The objectives of the paper are the following:

- To develop the curriculum comprising dynamic, functional and conceptual contents of finance and economics;
- To include the above three components in varying degrees/proportions depending on the objectives and need of the economic and financial scenario;
- To suggest the kind of integration required in different stages of economics curriculum;
- To explore the appropriate pedagogical intervention required for bringing about requisite changes in the economics curriculum.
- To introduce basic Financial and Economic concepts in the elementary stage through Activities/Fun Games;
- To Include contents on financial systems relating to BFSI sector at the secondary stage;
- To include contents on financial and economic systems covering all aspects of the financial activities involving basic BFSI products at senior secondary stage.

Methodology:

Interaction with various group of students and teachers of different schools during the last few years on National Curriculum Framework 2005 and the feedbacks received from them has helped in conceptualising the ideas.

Conceptualisation:

The World Education Forum report -- 'Stimulating Economies through Fostering Talent Mobility' made in collaboration with The Boston Consulting Group in 2010-- demonstrates the magnitude of an impending global labour crisis by analysing talent shortages across 22 countries and 12 industry sectors and argues that talent mobility can stimulate economies in both developed and developing countries. It said that India will face huge skill gaps in some job categories due to low employability over the next 20 years and also warned of a looming global labour crisis. Despite high unemployment, the global economy has entered a decade of unparalleled talent scarcity, the report added. If left unaddressed, it will put a brake on economic growth in both developed and developing countries, the report said. In India through the National Skill Development Corporation, 50 million people in the 12th Plan period, including 9 million in 2013-14 have undergone skill development under various sponsored programs. Various proposals are there by the National Rural Livelihood Mission and the National Urban Livelihood Mission to be spent on skill development activities for employability and productivity. These types of skill development are mostly confined to production, maintenance, ancillary activities, and services for boosting employment. Such areas are not included in secondary curriculum due to various constraints like inadequate infrastructure, and as these are mostly menial works. Another important aspect which has lately been realized recently in India is requirement of financial literacy for which efforts are being made by few agencies like Reserve Bank of India. Financial literacy is the ability to understand how money works in the world: how someone manages to earn or make it, how that person saves it, how he/she invests it (turn it into more) and

how that person donates it to help others. More specifically, it refers to the set of skills and knowledge that allows an individual to make informed and effective decisions with all of their financial resources. Raising interest in personal finance is now a focus of state run programs in countries including Australia, Canada, Japan, United States and the U.K. Financial Literacy creates demand for financial products & services, thereby accelerating the pace of financial inclusion as it enables the common man to understand the needs and benefits of the products and services offered by the banks. However it cannot meet the vast demand in view of the financial inclusion program by which every adult citizen will have a bank account and every village will have a bank and ATM. The decision of making available all financial products to every citizen at doorstep will make the economy a vibrant one. Practices like affinity fraud, and predatory lending, can also be checked. Accumulation of unproductive assets (unaccounted) can be avoided. Saving can be channelized towards productive investment and income generation for future. Cheating by unscrupulous middlemen can be avoided. Scams and financial disasters can be avoided. Billions of unclaimed deposits / premature / discontinued / lapsed insurance policies which are lying due to lack of financial literacy by the investors/ customers can also be avoided.

In a few years there will be villages in India without schools but with a bank and an ATM. This is the reason why there is the urgent need of financial literacy for all. The importance of financial literacy can be understood by analysing an international OECD (Organisation of Economic Cooperation and Development) study published in late 2005 analysing financial literacy surveys in OECD countries. The findings of the study are as follows.

- In Australia, 67% of respondents indicated that they understood the concept of compound interest, yet when they were asked to solve a problem using the concept only 28% had a good level of understanding.
- A British survey found that consumers do not actively seek out financial information. The information they do receive is acquired by chance, for example, by picking up a pamphlet at a bank or having a chance talk with a bank employee.
- A Canadian survey found that respondents considered choosing the right investments to be more stressful than going to the dentist.
- A survey of Korean high-school students showed that they had failing scores - that is, they answered fewer than 60% of the questions correctly - on tests designed to measure their ability to choose and manage a credit card, their knowledge about saving and investing for retirement, and their awareness of risk and the importance of insuring against it.
- A survey in the US found that four out of ten American workers are not saving for retirement. A recent study quoted in the Journal of Financial Planning found that only 16% of Americans included financial planning in their New Year's resolutions for 2013, down from 20% in 2012 and 33% in 2009
- In U.K. many people are failing to plan ahead, many people are taking on financial risks without realising it, Problems of debt are severe for a small proportion of the population, and many more people may be affected in an economic downturn, the under-40s are, on average, less financially capable than their elders
- The survey in Saudi Arabia showed that only 11% keep track of their spending; although 75% thought they understood the basics of money management. An in-depth analysis of this

survey revealed that 45% of youngsters do not save any money at all, while only 20% save 10% of their monthly income. In terms of spending habits, the study indicated that items such as mobile phones and travel account for nearly 80% of purchases. 90% of the respondents stated that they are interested in increasing their financial knowledge. Financial literacy programs in Saudi Arabia teaches basic financial skills such as budgeting, saving, and dealing with credit cards through a series of workshops endowing pupils with vital abilities required to make wise financial decisions in daily life.

Scope for introduction of Financial Literacy Program in School Curriculum

In Singapore, the National Institute of Education, Singapore established the inaugural Financial Literacy Hub for Teachers in 2007 to empower school teachers to infuse financial literacy into core curriculum subjects and to embed pedagogically sound activities to engage students in learning. A longitudinal study on the impact of financial literacy education on attitudinal and behavioural change is on-going. The baseline study on financial literacy in Singapore Schools in 2008-09 involved more than 6000 students and a thousand school teachers. It is the vision of the Hub to empower educators to equip their students to be financially savvy so as to make informed decisions and exercise discipline in managing their personal finance. In the same manner in India, financial literacy can be spread among school going children by integrating financial literacy content in the Economics curriculum. Such a learning as a young adult early in life can have significant consequences for future economic wellbeing. Such education at very young age enables young people to grow as questioning and informed consumers confident to manage their money and finances effectively. It has another advantage. Inclusion of financial literacy in formal curriculum saves government from the trouble of making people financial literate at later age of their life. Financial Literacy at school stage must also be connected to other elements of current school plan such as adolescent education, inclusive education, environmental education, etc.

In India, National Curriculum Framework 2005 suggests that curriculum is a plan to develop capabilities that are likely to help achieve the chosen educational aims. The range of human capabilities is very wide and through education we cannot develop them all. The concern is therefore with those that are necessary and significant in relation to our aims, which offer potential for further development and for which we have some pedagogic knowledge. One of the basic capabilities according to NCF 2005 is forming and sustaining relationships with the social world, with the natural world, and with one's self, with emotional richness, sensitivity and values. The RTE Act also lays down points such as conformity with values enshrined in the Constitution, all round development of child, building up child's knowledge, potentiality and talents, development of physical and mental activities to the fullest extent. NCF 2005 also suggests that social sciences provide the social, cultural and analytical skills required to adjust to an increasingly interdependent world and to deal with political and economic realities. It further suggests that the content needs to focus on a conceptual understanding rather lining up facts to be memorised for examinations. To fulfil these objectives text books were written. The various socio political and economic realities were presented in the textbooks in a very child friendly way for easier understanding of students. A major shift in the epistemological frame has also taken place. Along with developmental issues normative dimensions like issues of equality, justice and dignity in society has been highlighted. The Economics textbooks too highlight these issues. One of the objectives of curriculum must be to empower students through a functional knowledge of these systems of economics that affect their lives. The objective also lies in

making informed decision-makers; students will apply acquired knowledge to real life experiences and would try to solve problems of real life. When studying the legal and political systems, students will become aware of their rights and responsibilities and put this information into practice. Similarly while studying about the financial system in an economy; students must acquire knowledge and skill which will help him to handle financial problems both at present and in future. Financial literacy should be embedded in Economics Curriculum at different stages in different proportions. Like the environmental education programme, adolescent education program; financial literacy program can also be included in school curriculum.

Suggestions for modification of Economics Curriculum

For decades, economists, prominent educators, Nobel laureates, and business and government leaders have advocated for economic literacy as an essential component in school curricula. Their arguments have ranged from the need to improve people's ability to manage personal finances to the value of economic education for critical thinking and an informed citizenry. Nobel laureate and Yale economist James Tobin argued in a July 9, 1986, Wall Street Journal column: "The case for economic literacy is obvious. High school graduates will be making economic choices all their lives, as breadwinners and consumers, and as citizens and voters. A wide range of people will be bombarded with economic information and misinformation for their entire lives. They will need some capacity for critical judgment. They will need it whether or not they go to college". As Economics over the years has emerged as a very important subject affecting and shaping life of students, it should be introduced at the elementary stage. Learning of basic economic ideas and activities should be introduced at the elementary stage. Present Economics text book for class 9th may be introduced at elementary stage as all the units of the book are basic inputs; students at the elementary stage can well grasp these. As compared to civics and history book, the Economics text book at the elementary stage is having simple language, narration is also simple. In order to reduce the curricular burden at the elementary stage reorientation and restructuring of portions in all social sciences is necessary.

In the class 9th textbook, Problems and prospects of non-farm activities in the villages have been discussed. But it is mentioned that credit should be available at low rate of interest. That means credit is available at high rate of interest as people in villages mostly avail credit from non-formal sources. In the class 10th text book it has been mentioned that in rural areas most of people do not have access to formal credit as collaterals are needed to avail bank credit. But present financial inclusion policy of government has opened many avenues of availing credit in rural areas and in many cases collaterals are not required. Students should be exposed to such information. Latest changes should be incorporated in the syllabus. Such changes governing credit deployment, mobilisation of deposit, other financial services and insurance, etc. are to be covered under dynamic sections which are to be made available through electronic media like NCERT website, Knowledge Commission website, EDUSAT system, TV programmes, mobile applications, etc.

Besides this, contents on financial literacy may be included in this book at elementary stage for increasing financial capability of students. Basic functional ideas on how money can be saved and multiplied, how loans can be taken from banks etc. should be imparted to them. At this stage economics curriculum should cover some basic concepts like income, expenditure, saving and borrowing, etc. Activity based exposure to financial literacy can be made at this stage. At this stage, weightage on basic concepts should be 50%, functional part should be 40% and dynamic part 10%.

At the secondary stage students must be exposed to functional knowledge on the following.

- Understanding the economic and business environment
- Understanding the functions and use of money.
- Exploring what it means to be enterprising
- Learning how to manage money and personal finances
- Understanding the need to manage risk in the context of financial and career choices
- Taking risks and learning from mistakes.

Students need to know about certain dynamic concepts like various formal and non-formal sources of lending, basics of banking activities related to day to day life like types of demand and time deposits, penal interest, incentives on interest, loans and advances, various development schemes of governments and lending institutions and NBFCs, SHGs, subsidies, moratorium period, obtention of security documents and mortgage, various general and life insurance covering different types of risk like crop, cattle, fire insurance etc. etc. at this stage. Introduction of utility based content at the secondary stage should be done to create awareness and for imparting functional knowledge on activities like alternate channel banking/financial products, banking frauds and security, accounting, budgeting, payment systems, taxation system/structure, consumer awareness, cost-benefit analysis, inventory management, retailing and trading skills, direct cash transfer, client management etc. At this stage weightage on concept attainment is to be restricted to maximum 30% of the total knowledge domain. More emphasis here should be on functional part. It should be 40% and dynamic part should be 30%.

At the senior secondary stage the Economics curriculum should help to foster students' intellectual power, and develop their economic perspectives that will benefit their further studies at higher stage. This curriculum should provide a useful preparation not just for studying economics but also for other university studies such as management, financial studies, law, environmental studies, and public and social administration. The perspectives, knowledge base and skills in senior secondary Economics curriculum can broaden the range of further study choices for students. This curriculum should also blend well with courses which prepare students with practical skills for employment in the service sector. On completing senior secondary education, some students will enter the workplace directly. Their economic literacy, awareness and ability to make informed decisions will help them to cope with the demands of an ever changing work environment. At higher secondary stage scope for detail conceptual study for understanding of the economy must be there along with functional knowledge. Financial literacy can be imparted with much focus on concept attainment and theoretical analysis at this stage. Weightage on concept attainment at this stage should be around 60% of the total knowledge domain. For dynamic part students can explore other materials at this stage. So weightage on dynamic part in the textbook can be around 15%.

In the second chapter, "people as resource", a discussion on how countries like Japan invests more on human resource for efficient use of other resources has been made. This gives the message to students that for the larger benefit of the economy education and skill development is necessary. Such messages should be given to students wherever it is feasible.

Through Economics textbook at 10th level, students are exposed to various economic activities of the economy and the developmental scenario of the country. Analysis of key problems of the economy and familiarity with recent changes in the economy helps learners to develop their analytical

skill and it also helps them to understand the need for such changes. However knowledge given in these topics deals more with the knowledge required to have a just society. Like the 5th chapter, which sensitises and encourages learners to participate in the consumer movement other chapters should aim at imparting knowledge and skill to make learners participate in the developmental process. What role an individual can play in development of the economy. For development what kind of skill development is necessary? These ideas must be given to students. Moreover, while dealing with the topic sectoral development in India, students need to know the various ways in which development of agriculture and industry can take place. The purpose should be to show the development path to students and not just the development scenario in the country or the measurement of development.

Pedagogical intervention

Further for enhancing capability appropriate pedagogical intervention has to be made.

Examples of pedagogical intervention required to enhance the financial capability of students are given below.

- Use of case studies, simulations, scenarios, role play and drama
- Step by step guide on everything about a checking account including writing a check, making deposits, balancing an account, and reconciling a statement.
- Introductory information on budgeting, including what it is and how to do it. Budget guidelines are given in percentages along with tips like Pay Yourself First and the Envelope System.
- Asking students to maintain a personal finance diary, suggesting them for knowing how much money they have, how much they need, and how to reach their goals by cutting back on what they spend.
- Activities like posters with simple and appealing slogans, which communicate the messages of money management, savings, borrowings and basic banking products pictorially,
- Through tip sheets, guidance and helpful tools
- To have direct and indirect contact with people from business. To engage with ideas, challenges and application from the business world. To enhance students' financial capability in schools, banking staff may be involved.

Teaching through enquiry may involve individual or group learning tasks. Project learning, field studies, and studies on economic and financial issues are some of the methods that can be adopted by Economics teachers. In some schools, with prudent planning and design, teachers can provide students with opportunities to learn through running a small scale business venture.

Students have to study authentic issues in which they need to master the causes, consequences and relevant data. They may also have to suggest methods to alleviate or solve the problem based on a sound economic rationale. Such learning tasks provide students with experience in constructing knowledge and generating solutions to problems, and sharpen their critical thinking skills. A collaborative project on 'find a way to stretch your money' can be taken up as an alternative to typical textbook driven curriculum.

Students can work on problems that arise in other subjects and in contexts beyond the school. They can make links between economic wellbeing and financial capability and other subjects and

areas. Mathematical skills contribute to financial capability and to other aspects of preparation for adult life. Activities on mathematics may be related to financial matters. Most areas of English could provide opportunities for researching, exploring or discussing money and financial issues. This may include taking part in presentations and debates about money matters.

For the success of financial literacy in schools, school administrators, teachers and parents must be involved in such financial literacy programs.

Conclusion:

Curriculum development is a big challenge taking into consideration the challenges and changing needs of the society. Economics curriculum designed in the above manner can meet some of the challenges of the society. References:-

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3.5 INNOVATIVE METHODS OF TEACHING ECONOMICS AT SECONDARY SCHOOL LEVEL

Economics is the queen of social science. It is a dynamic subject which touches the daily life of all human beings. Like mathematics, economics uses quantitative method to evaluate the reality of theoretical premises. At its core, economics is abstract and requires a considerable amount of conceptual thinking. Knowledge of economics imparts knowledge as well as develop attitudes and values which will help students to understand economic problems and issues and participate effectively in the reconstruction of society. It is important that high schools teachers teach this subject in a manner that is both interesting and meaningful. Teachers must design authentic activities inside and outside classrooms to help students acquire relevant knowledge and skills. A creative teacher should provide adequate opportunities to construct knowledge and thus create active learners who are in continuous interaction with the subject. Some teachers are more comfortable with one mode while others may be comfortable with yet another ode. It is important that teachers learn to use all modes as all of them are complementary by designing different kinds of activities for a class. A learner centered classroom can make a difference and make students become responsible for their learning and help them discover that learning of economics can be fun too. When students learn this way, they constantly seek to reconstruct their knowledge to understand emerging economic situations, and are motivated to find the answers on their own and b become independent learners. The usual method of teaching economics at the high school levels traditionally centers around a lecture format, accompanied by visual aids such as demand and supply charts. This conventional approach may mot always engage the attention or interest of students. High school economics instructors should explore other methods of instructional delivery, more active tools that get students involved in learning the basis of the discipline. This paper focuses on a variety of innovative methods of teaching economics to high school students.

INTRODUCTION

The study of economics has assumed great significance as it systematically studies the economic network of society including agriculture, business, money and banking, international trade, transportation, planning, growth and development. It is a science that studies various activities concerning wealth, its production, distribution and consumption. Economics is also helpful in finding solutions to economic problems- individual, national and global. It is, perhaps, the only discipline in social sciences in which a Noble Prize is awarded. When economics is such an important subject, then why do students at secondary schools find it boring and dry. Teachers have to examine the pedagogy they use in the classroom to teach economics. It is evident that the traditional “chalk and talk” method is largely responsible for students being bored, disengaged and distracted. This method also develops negative attitude of students to the subject. Fortunately, teachers today can use a number of innovative methods such as cooperative learning, case studies, problem solving methods, project method, media, games and simulations, peer tutoring and brain storming to make learning of economics interesting. Following are some of the innovative methods which can be employed in the classroom for the curriculum transaction of economics at secondary level.

INNOVATIVE METHODS

COOPERATIVE LEARNING

Cooperative learning is defined as a structured, systematic instructional strategy in which small groups work together to produce a common product (Copper, 2003). In cooperative learning each student serves as a major learning resource for each other, sharing and gathering information needed. In a cooperative learning environment, there is a positive interdependence, students assist one another, share ideas and resources and plan cooperatively what and how to study. The teacher does not dictate specific instructions but rather allows students varying degrees of choice as to the substance and goals of their learning activities, thus making them active participants in the process of acquiring knowledge. Students perceive that they can reach their learning goals if and only if the other students in the group also reach their goals and they are beneficial to all with whom they are cooperatively linked (Deutsch, 1962; Johnson, Johnson and Stanne, 1990).

Cooperative learning environment improves higher level of thinking skills and problem solving, seeks to minimize anxiety of students and competition by creating an environment where students feel safe and learn from mistakes. According to Gilbert Macmillan (1983) the advantage of cooperative learning groups is that it gives students an opportunity to talk aloud, challenge and defend a point of view, and focus on the problem solving process rather than the answer. Students enjoy the process of learning, like the class and school better and show interest in the subject. Enjoyment and interests are the positive outcomes of this strategy. It also fosters higher level of motivation and more interpersonal relationships, helps children to assume responsible adult roles and act on the environment relatively, reduces anxiety and tensions and increases self esteem among the students.

Cooperative learning is a viable and effective instructional methodology for teaching and learning because it helps make a subject exciting and enjoyable for both students and instructors; even the shy student finds it easy to be involved; and many students maintain a high level of interest in activities (Robertson, Davidson and Dees 1994). The think-pair-share technique is probably the best-known and the most widely used for cooperative learning structure (Millis and Cottell 2003). In a think-pair-share activity, each student is asked individually to consider a problem first; then, students discuss the problem in pairs; finally each group develops a single answer.

According to Johnson and Johnson (1989), cooperative learning experiences promote more positive attitudes toward the instructional experience than competitive or individualistic methodologies. In addition, cooperative learning results in positive effects on student achievement and retention of information (Dishon and O'Leary, 1984; Johnson & Johnson, 1990 Slavin, 1991. According to McKeachie (1986), students are more likely to acquire critical thinking skills and meta-cognitive learning strategies, such as learning how to learn, in small group cooperative settings as opposed to listening to lectures. Cooperative learning activities enhance elaborative thinking and more frequent giving and receiving of explanations, which has the potential to increase depth of understanding, the quality of reasoning, and the accuracy of long term retention (Johnson, Johnson and Holubec, 1986). Therefore, the use of cooperative learning methods should lead to improved student learning and retention from both the developmental and cognitive theoretical bases.

Nazeer, Abdull (2006) conducted an experimental study on the effect of cooperative learning model on enhancing the teaching and learning of economics at secondary schools in the Maldives by trialing a cooperative learning model to enhance economics teachers' awareness of the impact

that cooperative learning might have on student learning. Some elements of both ethnographic and grounded theory methodologies were employed and specific data collection methods included workshops, classroom observations, interviews, video tapes and student questionnaires. Nine teachers and 232 students were involved in this study. The research was conducted in three stages (pre-intervention, workshops to train the participants, and post-intervention) over a period of three months in three selected schools in Male', the Maldives. In the pre-intervention phase, the teachers taught in a traditional manner, but after the intervention they incorporated elements of cooperative learning method to teach economics in their selected classes. The overall findings showed a considerable change in teachers' and students' attitudes and perceptions about traditional teacher-centered methods towards more student-centered methods of cooperative learning. It was evident that both teachers and students perceived cooperative learning to be an effective method of teaching. The findings revealed that both teachers and students understood and could see the benefits that cooperative learning offered to the teaching and learning of economics. Students indicated that they liked working in groups and appreciated getting help from other students. In addition, the results revealed that students' interactions and involvement in classroom activities, as well as interest and motivation to learn economics, increased during the implementation of the cooperative learning model. This study suggested that training teachers and students for cooperative learning is salient for effective implementation of cooperative learning for a positive influence on students' learning and teachers' pedagogy.

CASE STUDY METHOD

The case study method of teaching is a popular approach in many subjects and is now beginning to catch on in economics. In the case study method, the teacher reads or shows a case (a historical or hypothetical situation) to the students and then leads a class discussion in which the relevant principles are applied to the situation. Case studies can go a long way in showing students that economics is not all about abstract graphs and spreadsheets. Unemployment can be taught to class IX with the case study method. Here the class can be divided into small groups. Data on unemployment in India over the years should be given to each group so that they could discuss the given data; identify the problem, the potential causes of unemployment and its possible solutions. Then each group can make a presentation on the given problem. This will allow students to perceive the problem in their own way, analyze it and suggest solutions. It gives them a platform to have different views on unemployment and they will realize that as long as they can logically justify their solutions there was no right or wrong answer - hence the teacher's views are not the only views on a topic. The teacher can use the case study method to extend a student's understanding of real life issues and in turn enhance his/her existing conceptual knowledge. In a nut shell, case method includes providing an opportunity for students to apply what they learn in the classroom to real-life experiences. This method has proven to be an effective way of both disseminating and integrating knowledge. Since the case method is an instructional strategy that engages students in active discussion about issues and problems inherent in practical application, it can highlight fundamental dilemmas or critical issues.

PROBLEM SOLVING METHOD

Many a times problem solving is an effective strategy to help students construct their concepts. For example, one of the first concepts of microeconomic theory is that of scarcity and choice leading to opportunity cost. In order to teach this topic, a problem can be posed on planning a school leaving party. Information is given to students regarding the money they can spend on things like food, music, decorations, venue etc. Each group of students needs to decide on which option they will choose

giving the rationale behind the choice. Through this exercise students themselves come up with the economic problem of wants being unlimited and resources being scarce due to which choice needs to be made. Also they will be able to comprehend that there is an opportunity cost attached to every choice or decision that is made. The problem solving method is a wonderful way of helping students construct their own knowledge based on their findings on a given problem. Clearly, the teacher's role in this method of teaching is that of a facilitator and guide, wherein she can probe and ask questions as to why students have made certain suggestions. Chapter 3, Money and Credit of the NCERT social science text book for class X students can be effectively taught through this method.

PROJECT METHOD

Under the project based learning approach, students can be given a real world situation which they can analyze and present using their academic knowledge and creativity. Project work takes the central ideas of a topic beyond the academic curriculum. Whilst many teachers view projects as an individual activity with the findings being presented in a project file, projects are an effective way of ensuring collaborative small group learning. It is a powerful method of developing research skills, data collection and communication skills along with critical and creative thinking and self reflective skills. In addition it also teaches students project management skills such as time management, presentation and team work. This method can be used to discuss topics such as Comparative Development Experiences of India and its Neighbours. For example if they do a consumer survey project in statistics then students clearly know that they will be graded on the hypothesis being tested, questionnaires developed, appropriate data presentation, data analysis including approach taken, conclusions drawn towards accepting or rejecting the hypothesis along with neatness and submitting work on time. It is important for any teacher to give the assessment criteria to her students prior to undertaking any activity. This will help students understand what is expected from them and allow them to focus on wanted deliverables rather than unwanted ones. Chapter 1 on Development can be taught through this method.

MEDIA INTEGRATION

Media integration refers to the use of documents, recordings, films and computers in the classroom environment. In economics, the most useful media for teaching include news broadcasts, documentaries and fictional works that deal with economic subject matter.

Print Media

Economics teachers should be well versed with using print media to showcase the practicality of the subject in their classrooms. When doing data presentation in statistics, students can be asked to collect different types of graphs. When the government budget is announced, teachers should keep all newspaper cuttings to discuss these budgets. Similarly teachers can ask students to keep a record of foreign exchange rates for a week so that this data can be used whilst explaining flexible exchange rates. Along with these basic uses, print media can be used to take discussions beyond the academic curriculum on a particular topic. For example, the Economist has developed a Big Mac Index to compare exchange rates across co untries. This little magazine clipping can be given to the students to discuss how purchasing power parity is used to determine exchange rates.

Electronic Media

Generally students dislike Indian economics as they find it boring and believe it has to be learnt by rote. It can be made interesting by showing them movies such as edited version of "Do Bhiga Zameen" as a precursor to discussions on India at the eve of independence. After watching the movie students can broken into groups to discuss the issues relating to Indian agriculture. Each group then can presents their findings to the class. It will definitely provide deep visual impact on the students, which will help them to better understand and be sensitive to the conditions of Indian agriculture. Feature films and documentaries can also be shown for a variety of topics related to environment and sustainable development. Agriculture and related sector of X standard NCERT text book can be taught by this method.

Teacher Driven Power-Point Presentations

Most teachers use power point presentation only for name sake; they should make power point presentation in such a way that makes class more interactive. Power point presentation is one of the best options to teach complicated topics. Most of the students find it difficult to understand the difference between two ideas like domestic product and national product. The visual presentation will help the student understand the concept with greater ease. The power point presentation will make a static equilibrium diagram more dynamic – students can see how movements and shifts in demand and supply curves take place. Color coding can help to make diagrams clearer and improve attention span. Presentations should then be moved towards showing non diagrammatic concepts such as output multiplier through pictures and animations. The visual impact will assist students to better grasp abstract concepts. Indian economics offers a wide scope for using power point presentations to engage students in discussions to better understand and articulate ideas. In fact several of our Indian Economics chapters have only pictures depicting the central ideas of the chapter. The presentation is shown and students can deliberate on what the pictures shows, its causes and potential solutions. When students are shown pictures, it can bring a highly energized, animated and passionate discussion on the impact of globalization and students are able to discuss on the positive and negative aspects of globalization. Chapter 4, Globalization and the Indian Economy can be taught through this method.

Sucheta Kumari and Geeta Rani (2012) conducted a study to find out the efficacy of Instructional media on academic achievement of three different groups of students of XII class in economics when taught through varied media viz. Print Media (Self-Instructional Modules), Visual Media (power point presentations) and conventional approach. Hypothesis of the study was 1. there is no significant difference among the academic achievement of three groups of students of class XII when taught by three different media of teaching viz. Print media (self instructional module), visual media (power point presentation) and conventional approach. All the students were tested on two occasions, i.e. pre test and post test. In this way (3×3×2) factorial design, proposed by Lewis (1968) as nesting cum crossing design was followed. In the present experiment, 90 students were selected in all from 12th class of Vaish Sr. Sec. School, Rohtak (Haryana). Students were selected on the basis of their scores obtained in the intelligence test, i.e. group test of mental ability (GTMA) by Jalota. These students were divided into three equal groups, thirty students in each group. In the study two types of tools were used: 1. Instructional Tools Which were used to impart instruction to the students in Economics through three different approaches viz. Modular material, power-point presentations with animation and graphics 2. Measuring Tools included (a) Group Test of Mental Ability by Jalota

(b) Academic achievement Test made by investigator herself. Data was collected on two occasions, i.e., pre-test and post-test. In order to find out the effect of instructional media, analysis of variance (3×3×2) as per Lewis (1968) was employed. Findings of the study revealed that achievement scores of the students in economics increased the most when they were taught through the visual mode of instruction (PPT) comparatively than by self instructional module and the conventional approach.2. High intelligent students acquired the highest achievement scores as compared to students with moderate and low level of intelligence. 3. After the treatment, students achieved the highest scores on post test as compared to pre test in all three treatments. Among three varied treatments achievement mean score of the students were highest when taught by visual media i.e. power point presentation.

LEARNING GAMES AND SIMULATIONS

Simulations and games can also stimulate student interest in economics course material. Examples of such simulations include a budgeting game in which each student has a hypothetical amount of money to use for monthly expenses. This simulation applies mathematics skills and illustrates the economic principle of using limited resources—in this case, money—and setting priorities to meet needs and wants. Simulations are very popular in economics. Teachers can use simulations, computer or otherwise, to show students how abstract economic concepts and equations "work" when put into practice. These simulations can include games as well as models. The UK Economics Network website has a number of easy to reproduce simulations listed on its website.

Kenneth J. Klasen and Keith A Willoughby (2003) conducted a study to assess student learning in class simulation games. An effective game will help students understand concepts more quickly and remember them better than from a lecture. The game used here was a simulation of an inventory system, where student teams place orders for an item on a monthly basis (based on limited knowledge of prior demand), and then the instructor informs them what the demand is for that month. There are holding costs for items not sold and shortage costs if they run out of items. The students then place their order for the next month. To evaluate student learning, two methods were used: a before-and-after questionnaire, and playing the game twice. Both methods allowed for an initial benchmark to be established, followed by a measure of how much students improved. For the questionnaire, answers were scored and a paired-comparison t-test was calculated to assess learning. When the game was played twice, student performance was calculated including the change in student profits. Results pointed to the conclusion that students learned from the game. Basic inventory knowledge increased, students gained an appreciation for the complexity of inventory issues and of decision making in general, and students enjoyed the game and thought it was a worthwhile learning experience. It was evident that many students grasped the larger strategic issues and were beginning to apply them more broadly. Although not all changes were statistically significant, most did improve, suggesting that students developed a deeper hands-on understanding of the issues. The current study is confirmatory in the general use of simulation games.

PEER TEACHING AND LEARNING

Students teaching each other in a variety of ways are another strategy to enhance leaning. Some of the ways through which students learn from each other are discussed below.

Jigsaw Reading: This is a strategy which is very useful for topics that require a large number of points to be covered such as factors affecting elasticity of demand. The class is divided into groups and each group reads only one factor and ensures that every group member understands it. The

teacher then asks any one group member to articulate the understanding of the group. Students pose their questions to the presenting group and the teacher once again becomes a facilitator of learning.

Pair Learning: This strategy is particularly effective when revision needs to be undertaken before an examination. For instance, in order to revise the different equilibrium studied in microeconomics – consumer, producer ad market, students can be paired in a manner where one student has understanding of these concepts whilst the other student has doubts and issues. The student who has difficulties first listens to the explanations and then articulates his/her partner.

Performance Related Tasks: This strategy uses several of the above detailed strategies to teach one concept. For instance, in order to teach functions of money, the class can be divided into groups. Each group will be given an end product through which they will have to present the problems of a barter system and therefore, the functions of money. These include Dramatization. Dramatization: Dramatization of ideas is a powerful medium through which children can learn. In the process of enactment, they internsalize the overreaching ideas on a topic and are able to recall them at a later date. In addition to reading and learning the content, theatre gives tremendous scope for students to imbibe life skills such as communication, team work, time management and also showcase their creativity.

BRAINSTORMING

Brainstorming is an activity which quickly elicits many ideas, reactions or points of information from a group. In this activity, a question is posed and the group members are asked to immediately give all the responses which occur to them without censuring or holding anything back. Everything is listed without any question, discussion or clarification. Later the ideas are screened, categorized, and analyzed. This activity is undertaken when a group has been inactive or seems to be uninvolved in a discussion. Brainstorming can be used to produce an overview of the dimensions of a problem (ask for causes: direct, indirect, remote, subtle and/or for consequences: immediate, long range, probable or improbable) or solutions (ask for practical and imaginative) or of reactions and feelings. For example, before starting the New Economic Policy, students can be asked to discuss their ideas of why new economic policy had to be implemented in India in 1991 along with some of the key policy changes.

CONCLUSION

When teachers are asked to move away from “chalk and talk” method which is very familiar to them they would find it difficult to switch over to the new methods immediately. It is therefore necessary for teachers to make classroom teaching more interactive by using the innovative methods within the framework of traditional “chalk and talk” method. Teachers must realize that difficult to understand topics in economics can be taught through innovative methods described in this paper. Research evidences have conclusively pointed out the importance of methods like cooperative learning, media integration and games and simulations. Adopting innovative methods on the part of the teachers requires a positive attitude, openness to change, time management, classroom rearrangement, commitment and the desire to achieve the instructional objectives effectively.

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3.6 CONCEPT LEARNING IN ECONOMICS AT SECONDARY SCHOOL LEVEL- A CURRICULAR DIMENSION

This paper which is based on a research study attempting to unfold various curricular dimensions in the field of economics with a special focus on concept learning in the curriculum and issues related with this at the secondary school level.

Taking note of changing focus in economics, as reflected in the various NCFs and social scientific nature of the discipline of economics which is laden with concepts and the nature of these concepts which are not only difficult to understand but also carry specific meanings of their own, a need was felt to analyze concept learning in economics at the secondary level. Secondary level curriculum of NCF introduces economics as a separate component of social science. This stage therefore can be very instrumental in forming a base for the learning at senior secondary level where economics is introduced as a separate discipline. If right foundations are not laid at the secondary level with rightful place given to basic concepts, the understanding of the related concepts at senior secondary level becomes a big challenge. Given these considerations, the study tried to analyze the economics curriculum at secondary stage with main focus on concept learning, following the threefold criterion; Selection of concepts, placement of concepts and interlinkages (vertical, horizontal). Selecting the methodology of content analysis due weightage was given to the theoretical framework of concept learning. The study concluded that given the topical nature of social science curriculum in Indian context, insufficient selection of basic concepts on one hand and wrong placement of the concepts on the other is seriously challenging the basic foundations of the discipline of economics. Another missing link being interlinkages between concepts that needs to be established. There is dire need for more comprehensive coverage of basic concepts along with rightful placement to ensure effective concept learning in economics.

BACKGROUND OF THE STUDY

As a teacher and researcher my own teaching experiences and the problems that I have encountered while teaching economics to senior secondary classes due to the lack of conceptual clarity of basic economic concepts, have encouraged me to explore the dimension of concept learning in economics at secondary level.

In the context of Indian Education it is very important to trace the historical evolution of the present day social science curriculum in general and economics in particular, so as to understand the place given to economics in the overall social science curriculum at school level. Since the nature of Social Science curriculum is componential in nature; Economics happens to be just one component of social science at secondary school level (Class IX and X). In such a case being a small part of the syllabus it is important to understand how well each part gels with the others and is linked across the subject boundaries.

It is important to throw light on the place given to economics in the Social Science curriculum ever since the first National Curriculum Framework (NCF henceforth), was prepared by National Council of Educational Research and Training in 1975. What has been the weightage awarded to economics out of the total weightage given to social science at secondary level? The analysis in terms of weightage given to economics will help reflect the evaluation aspect of the curriculum and will throw light on the status awarded to this component.

After analysing various curriculum frameworks in the light of place given to economics this can be reiterated that there has been neglect of economics as part of social sciences as other components tend to dominate social sciences like history and geography. This neglect of economics has continued for a period as long as around 35 years.

This brings a very important concern into light that although there is agreement on teaching economics at secondary level but the place that it deserves being a leading social science in the contemporary world, has not been given to it as reflected in the weightage given.

Evaluation goes a long way in influencing the teaching of any discipline. We can make out that under the scheme of evaluation less weightage awarded to economics has led to neglect of this subject at secondary level and therefore concept learning has suffered due to this. There is a big conflict between integrated approach to social sciences on the one hand and preservation of boundaries of each discipline under social sciences on the other hand as the syllabus remains componential in nature. Similarly given the fact that at secondary level the whole approach to social science to a large extent is textbook oriented and class room based, it is important that due weightage is given to economics in the syllabus so that right content and relevant concepts find place in the textbooks as well.

THE PROBLEM

Economics is a social science that seeks to analyse and describe the production, distribution, and consumption of wealth. "Scarcity is the fundamental concern of economics". (Savage & Armstrong, 1992). It is often described as a body of knowledge that discusses how a society tries to solve the human problems. Economic ideas are influential in restructuring society, for better or worse. An understanding of economics is important in the pursuit of progressive social change, even more than in the pursuit of personal enrichment. Although, economics as a discipline is studied scientifically, its nature is embedded into the social framework. Economic theories have social implications; thus it is one of the leading social sciences. To develop right attitude among learners it is important that they are exposed to this very subject at school level itself as it deals with the ordinary business of their lives.

The moment we visualise economics as a discipline; basic concepts call for better understanding as the basic foundations of any discipline are based on these. In the context of economics there is a need to identify basic economic concepts such as goods and services, consumer, producer, economy and so on. It is important that the subject matter of economics includes explanations of concepts like these. But it is not an easy task to select which concepts should find place in the curriculum at secondary level. Economic concepts are difficult to understand. Therefore there is a need to give enough weightage and clarity of concepts in the curriculum. Concept learning is of paramount importance in economics given the different nature of economic concepts. For example: How is production understood by a geographer and economist is different. Production of goods and services is a baseline structure for an economist and then it gets linked with consumption and distribution, but in geography we have another perspective of looking at production. In geography we deal with place, climate mainly. Therefore given the different perspective all together in economics for the same concepts, it is important that the curriculum accounts for a clear focus on concept learning in this discipline. Economics being a social science offers enough scope for conceptual framework to be built to extend existing ideas to new situations. Once we understand the differing nature of concepts in economics it will become easier to make place for right conceptual focus in curriculum and thus necessitating the right concept learning.

Another thing to be highlighted is that there is no single concept but multiple concepts in economics. Therefore it is pertinent to identify lower level concepts and higher level concepts. When the lower level concepts are taught to students in the rightful manner, it will provide strong foundation for understanding higher level concepts at higher stages of learning. The neglect of teaching of lower level or basic concepts proves a hindrance in understanding higher level concepts. If right foundations are not laid at the secondary level with rightful place given to basic concepts, the understanding of the related concepts at senior secondary level becomes a big challenge. Therefore it is very important that curriculum with focus on concepts is stressed upon from the secondary level itself. This will provide them a strong foundation on which their conceptual thought process can rest.

Keeping these in mind the present research endeavour attempts to analyse the coherence between concept and content as covered under the economic component of social science curriculum and the way it has been taken care in the interest of concept learning based on the theoretical frame of concept development.

THE PURPOSE

Purpose of the study was to identify and critically analyse the economic concepts chosen to be taught at secondary level along with their placement and interlinkages (vertical and horizontal). Based on this the following objectives were identified:

- To identify economic concepts in the themes covered by the economics component of Social Science curriculum at secondary level.
- To critically analyse the criteria for selection of these concepts in the light of objectives of teaching economics at the secondary level as stated in the curriculum.
- To critically analyse whether these concepts are placed in a logical order in the economics syllabus.
- To analyse the interlinkages of these concepts across themes selected in the economics syllabus.

THEORETICAL FRAMEWORK

When we attempt to focus on the conceptual dimension of curriculum in a discipline, it is very important to unfold theoretical bases, on which the whole idea of concept learning can be based.

“Concepts are described as abstract categories of meanings removed from specific instances. The human intellect makes use of this system of classifying, categorizing and organizing the vast amount of specific knowledge with which it deals”. (J. Jarolimek, 1985).Concepts play a very important role in any discipline. They have some special characteristics or attributes which differentiates them from mere labels or names given to a phenomena.

“Concepts in social science and thus in economics meet the criteria of being timeless, universal, abstract and broad. They are ideas about human behaviour and transcend time and space providing transfer value to new situations” (Arthur K. Ellis, 1991).

Concepts must follow an ordering. They cannot just be randomly picked up and placed in a curriculum. It is important to realise that well-ordered concepts can easily be perceived into a thought system.

A child is placed in a social setting and he tends to already encounter random experiences in the

life outside schools. A school‟s job is to reduce the random encounters and replace it with non-random encounters which foster a meaningful experience because time for life, for learning, is limited. Along with this given the time- binding nature of events in school, the careful selection, placement and sequencing of content and concepts become inevitable; The sequence that proceeds from, simple to complex, concrete to abstract and known to unknown.

Concept statements with carefully developed ordering of concepts enable us to deal with different levels of experiences and understanding. For example concept of price in economics needs to be applied in the context of demand, supply and ultimately in understanding the nature and forms of markets. Furthermore, carefully developed concept-statements enable a teacher to bring order to the settings, or learning processes which facilitate concept development.

Since concepts in the social sciences are orderly explanations of human action, therefore concept learning is of paramount importance in social science and hence in economics as well.

Given the nature of concepts in economics which have specific meanings of their own and the importance of conceptual thinking, there is need for deep focus on concept building rather than providing students with only factual knowledge. This provides them a strong foundation on which their conceptual thought process can rest.

Also to be considered is an important fact that concept and content are two dimensions of the curriculum which should not be segregated. As we know there is no single concept in economics but a multiple concepts. Therefore it is pertinent to identify lower level economic concepts and differentiate it from higher level economic concepts. When the lower level economic concepts are taught to students in the rightful manner at secondary stage, it will provide a strong foundation for understanding higher level concepts at higher stages of learning. On the basis of theoretical bases of different models of concept formation, it can be inferred that concept learning in economics should proceed in the following manner:

1. First of all relevant economic concepts to be taught should be identified.
2. The selected concepts thus should be placed into those themes as part of the content to be taught.
3. A child has to attain distinction in the way concepts are dealt with in the discipline of economics.

I would also like to accentuate the importance of conceptual focus which is required irrespective of the type of curriculum be it topical or concept based. Furthermore, even if we talk of topical nature of the curriculum, the focus on concepts can be taken care of very well pedagogically. This means that teachers need to identify conceptual ideas and then build the content upon it through selection of right instructional strategies. Therefore economic concepts need to be rationally selected and placed well in the themes so that teacher can take these one by one and build the content upon these.

Given the differing nature of economic concepts and the theoretical frame under which it should be taught, this research study intended to gauge as to what extent does the secondary level curriculum tries to follow these bases along with the problems and possibilities in the area of concept learning at this level.

Based on Content Analysis, in the context of this study method employed can be described as analytical, critical and interpretive. This involved the following steps:

1. Identification of Concepts.
2. Analysis of Concepts in the curriculum.

3. Drawing inferences.

For the analysis of concepts, theme based approach has been followed as at secondary level economics syllabus in C.B.S.E. has been divided into themes for class IX and X. The approach was guided by N.C.E.R.T. textbooks for class IX and X as the same is recommended by Central Board of Secondary Education (C.B.S.E.). An exclusive analysis of the syllabus or the textbook has not been the objective of this study. Since concepts find their places in various content areas of the syllabus, the concerned syllabus prescribed for secondary level is looked into. It is also true that the way these „concepts" are presented is equally important. Hence the concerned textbook is also looked into for the purpose of analysing the concepts. But analysing the textbook or the syllabus for its own sake is not the task. Based on the C.B.S.E. syllabus and description of the content, basic concepts were identified from each chapter in the textbook. The concepts selected and stated have followed the order in which they have been placed in the chapter pertaining to that theme. The objectives for that theme have also been stated next and in the light of these objectives the treatment of basic concepts within the chapter has been analysed on the basis of three fold criteria. The three fold criteria involve Selection, Placement and Interlinkages between concepts. The concepts thus identified have been analysed in the light of content and the objectives of that particular theme. Then the way these concepts are placed has been looked into and eventually an attempt has been made to analyse the interlinkages between these concepts if any.

DISCUSSION ON FINDINGS

Given the purpose of the study which was to analyse the content of economics with the lens of conceptual focus at secondary level, the following issues can be highlighted:

Analysis for class IX

In some of the themes chosen as far as placement is concerned a reordering is called for. As far as concept selection goes certain most basic concepts have either been missed out or have been overshadowed. Wholeness of the concept has been compromised with, thus leading to incomplete conceptual understanding. As far as presentation of themes in terms of story is concerned, focus has been too narrow. There is absence of linkages both vertical as well as horizontal across the concepts. Basic concepts have been simplified to such an extent that it has led to ambiguity in the understanding of concepts. Certain higher level concepts have been chosen without inclusion of necessary basic level concepts essential for understanding them. For developing normative consideration and sensitivity among learners the selection of concepts requires to be broader. This was found missing.

Analysis for class X

Child centric approach has led to too much simplification of concepts to be taught at this level. Story based focus with insufficient selection of relevant concepts has undermined the concept learning. There was absence of linkages among themes selected as part of the syllabus making way for lack of horizontal linkages. Themes are too segregated therefore concept linkage has been challenged. A radical reordering of not only concepts but of themes is also required for the right conceptual foundations to be laid. Absence of interlinkages partially due to wrong placement of themes as well as concepts within the themes chosen will hinder the process of concept learning. A reordering of concepts is also called for within the specific themes.

CONCLUSIONS

In the light of the objectives of this study, that was to critically analyse the selection, placement and interlinkages of economics at secondary level, the following conclusions were drawn after the analysis:

- The analysis has thrown light on the fact that for most of the themes chosen at secondary level for class IX as well as X, certain most basic concepts have either been missed out or have been overshadowed.
- In certain themes the wholeness of a concept has been compromised with therefore togetherness with related concepts has been partitioned thus making way for incomplete understanding or misinterpretation of concepts on the part of the learner.
- Another thing to be noticed is that while selecting the story as part of embedding concepts within the textbook the focus has been too narrow.
- For few themes placement of concepts seems to be appropriate but especially in IX class economics, themes require a reordering of concepts so that learning sequence is not broken and concept learning can be progressed from known to unknown.
- After reviewing the economics syllabus for class X, it could be seen that there was absence of linkages among themes selected as part of the syllabus making way for lack of horizontal linkages. Themes are too segregated.
- The basic concepts are simplified to such an extent at secondary stage that vertical linkages have become very difficult across level thus jeopardizing learning at higher levels.
- Too much simplification of concepts at secondary level has posed a lot of challenges in the form of struggle with higher level economic concepts at senior secondary level.
- Less weightage granted to economics in the scheme of examination at secondary level as a component of social science has played havoc with economics as a discipline.

SUGGESTIONS

- There is dire need for giving economics its rightful place at secondary level so that concept learning is taken care of.
- There has to be consonance in the approach to curriculum at secondary and senior secondary level. Therefore it calls for greater vertical interlinkages so that learning at one level serves a sound foundation for learning at another level. This is especially true of the discipline of economics where the matter is essentially conceptual in nature. This needs to change as the syllabus at Senior Secondary level is not that simple in approach.
- There is dire need for more comprehensive coverage of basic concepts that should find place within the content chosen for class IX and X at secondary level.
- In the absence of correct placement of concepts a teacher has to choose her teaching strategy in a manner so as to complement the transaction of the content in a rightful manner. But it is equally important that the curriculum should be designed in such a manner that a conceptual sequence is well defined and articulated so that discrepancy if any due to variation in pedagogy will not defeat the purpose of learning in a rightful manner. If concepts are well placed in the content then teacher can take them up one by one and build upon these.

- The proper sequencing of concepts within the content as well as the textbook is very important especially at secondary level where it is an important tool to guide the instructional strategy of the teacher.
- In Indian context topic based approach to curriculum is followed. But I feel that concept learning in this frame is equally important especially for Social Sciences, and to be more specific, in economics. The results of this analysis have shown that given the topical nature of curriculum in Indian context for Social Sciences insufficient selection of basic economic concepts on the one hand and wrong placement of the concepts on the other hand is seriously challenging the basic foundations of the discipline of economics.

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3.7 SCHOOL ECONOMICS IN THE NATIONAL REPOSITORY OF OPEN EDUCATIONAL RESOURCES (NROER) AN OVERVIEW OF THE DEVELOPMENTAL PROCESS

Open Educational Resources (OERs) are increasingly being promoted by enthusiasts in the field of education as a solution to the challenges of access, quality and cost of digital content worldwide. The National Policy on Information and Communication Technology by Ministry of Human Resource Development, Government of India (2012), in its policy goals discusses about creating an environment for collaboration, cooperation, sharing and promoting universal, equitable, open and free access to ICT. The most important aspect of openness is the free availability of resource over the Internet, and recurrence of as few as possible restrictions, in the form of licencing activity, on the use of resource by the users. Central Institute of Educational Technology (CIET), National Council of Educational Research and Training (NCERT) and Department of School Education and Literacy, Ministry of Human Resource Development, Government of India has launched National Repository of Open Educational Resources (NROER), which is a digital repository of open educational resources offering resources for all school subjects and grades in multiple languages. The resources are available in the form of concept maps, videos, multimedia, interactive objects, audio clips, talking books, photographs, diagrams and charts, articles, lesson plans and textbook pages. This research paper provides a glimpse to the NROER with special reference to the Economics content of Secondary school level. It is an attempt to provide an overlook of the complete methodology of development of Economics content in the form of concepts, concept maps and multiple resources on the NROER.

Key words

Open Educational Resources (OERs), National Repository of Open Educational Resources (NROER), concept maps, interactive objects, multimedia.

1.1 Introduction to Open Educational Resources (OERs)

Open Educational Resource (OER) is a new phenomenon which may be seen as a part of a larger trend towards openness in education including more well-known and established movements such as Open Source Software (OSS) and Open Access (OA). The most important aspects of openness are the free availability of resource over the Internet, and recurrence of as few restrictions as possible on the use of the resource by users. There should be no technical barriers (undisclosed source code), no price barriers (subscriptions, licensing fees, pay-per-view fees) and as few legal permission barriers as possible (copyright and licensing restrictions) for end-user. The end-user should be able not only to use or read the resource but also to adapt it, build upon it and thereby reuse it, given that the original creator is attributed for her work.

The term Open Educational Resources first came to use in 2002 at a conference hosted by UNESCO. Participants at that forum defined OER as: "The open provision of educational resources, enabled by information and communication technologies, for consultation, use and adaptation by a community of users for non-commercial purposes." Open Educational Resources are digitised materials offered freely and openly for educators, students and self-learners to use and re-use for teaching, learning and research.

OER is said to include the learning content which have full courses, courseware, content mod-

ules, learning objects, collections and journals; tools which are software to support the development, use, re-use and delivery of learning content including searching and organization of content, content and learning management systems, content development tools, and on-line learning communities; and implementation resources comprising of intellectual property licenses to promote open publishing of materials, design principles of best practice, and localization of content.

1.2 National Repository of Open Educational Resources (NROER)

Keeping in line with the OER movement throughout the world, CIET, NCERT is involved in the development and management of the National Repository of Open Educational Resources (NROER) (Figure 1). The National Repository is developed in collaboration with the Department of School Education and Literacy, Ministry of Human Resource Development, Govt. of India. Metastudio, the platform hosting the repository is an initiative of Gnowledge Labs, Homi Bhabha Centre for Science Education, Mumbai. NROER was launched by Honorable Union Human Resource Development (HRD) Minister, Govt. of India Dr. MM Pallam Raju in presence of Honourable Minister of State for HRD Dr. Shashi Tharoor, Secretary, Higher Education Shri Ashok Thakur, Secretary, School Education and Literacy Shri Rajarshi Bhattacharya, Director, NCERT Prof. Parvin Sinclair and other distinguished guests during the National Conference on ICT (Information and Communication Technology) for School Education on 13th August 2013 in New Delhi.

Figure 1: The interface of National Repository of Open Educational Resources (NROER)

NROER is a solution developed to address the challenges faced by the education sector of our country. It intends to reach the unreached, include the excluded and extend education to all. It is a collaborative platform involving everyone who is interested in education. It offers resources for all school subjects and grades in multiple languages. It brings together all the digital resources for

a school system such as educational videos, concept maps, audio clips, interactive objects, photographs, diagrams, charts, images, articles, learning objects, talking books, textbook pages and documents, any resource that can be served digitally. The major objectives for developing the national repository are:

- To make digital electronic content available for teachers and students.
- To enable the participation of the institutions/ organizations, community in development and sharing of digital resources.
- To create mechanism to evaluate digital content.
- To provide platform for teachers and students to participate in online courses.

1.3 Licensing process on NROER

Open Educational Resources provide teaching learning fraternity with the quality study materials to facilitate the expansion of learning worldwide. By the use of open licensing the teachers and learners can be liberated from the concerns of the permissions and other conditions attached with the use of content or software. NROER uses Creative Commons license for promoting quality education. Creative Commons has six types of licences. NCERT has taken the initiative of declaring that NROER carry the CC-BY-SA license instead of CC-BY-SA-NC which contains a more restrictive clause and was advocated by Wikimedia and other advocates of open educational resources (Figure 2). This decision by NCERT is in tune with UNESCO's Paris Declaration on Open Education Resources and will ensure that all the resources are freely accessible to all. To put it in the language of the Creative Commons—to reuse, revise, remix and redistribute.

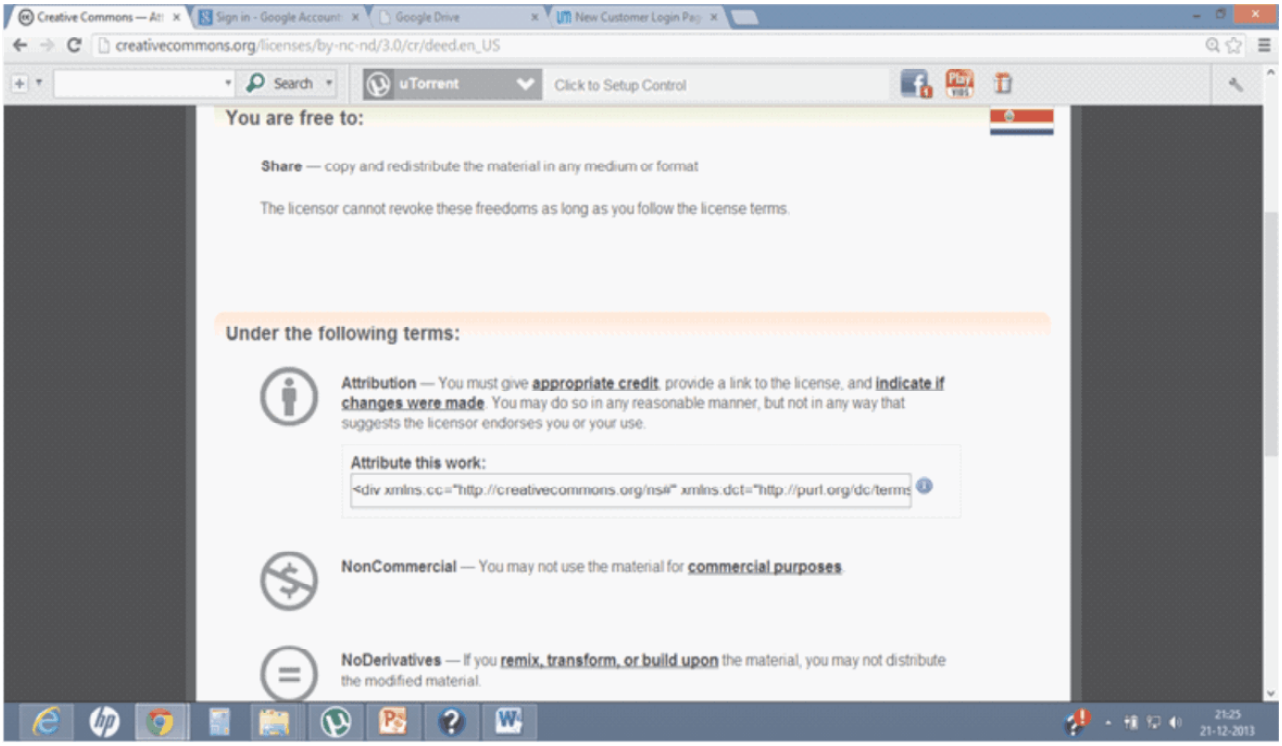

Figure 2: Details of licensing process provided by Creative Commons

2.1 Development of Economics Content on NROER

NROER is based on concepts; the complete structure of it is knitted around the concepts which are extracted from the textbooks of NCERT. The Repository is offering the content for all the levels of school education, starting from Elementary level and proceeding to Secondary and Senior Secondary Levels. In the subject of Economics the NROER is starting with Secondary level, there are more than 45 concepts listed in the subject. All these concepts are linked with each other to constitute a concept map. The whole process of development of Economics content on the NROER is discussed as under:

(1) Identification of the concepts of Economics

The process of concept identification in Economics started by the thorough study of the Textbooks of 9th and 10th along with the syllabus document of NCF 2005 by faculty members and through workshop mode, the concepts were listed out and debated upon among the group of teachers of various Government and Private schools while the workshops and after that the final list of concepts to be shown to public after uploading on NROER was finalised (Figure 3). In the meantime the concepts identified by the internal faculty was also standardised through the workshops by the group of teachers.

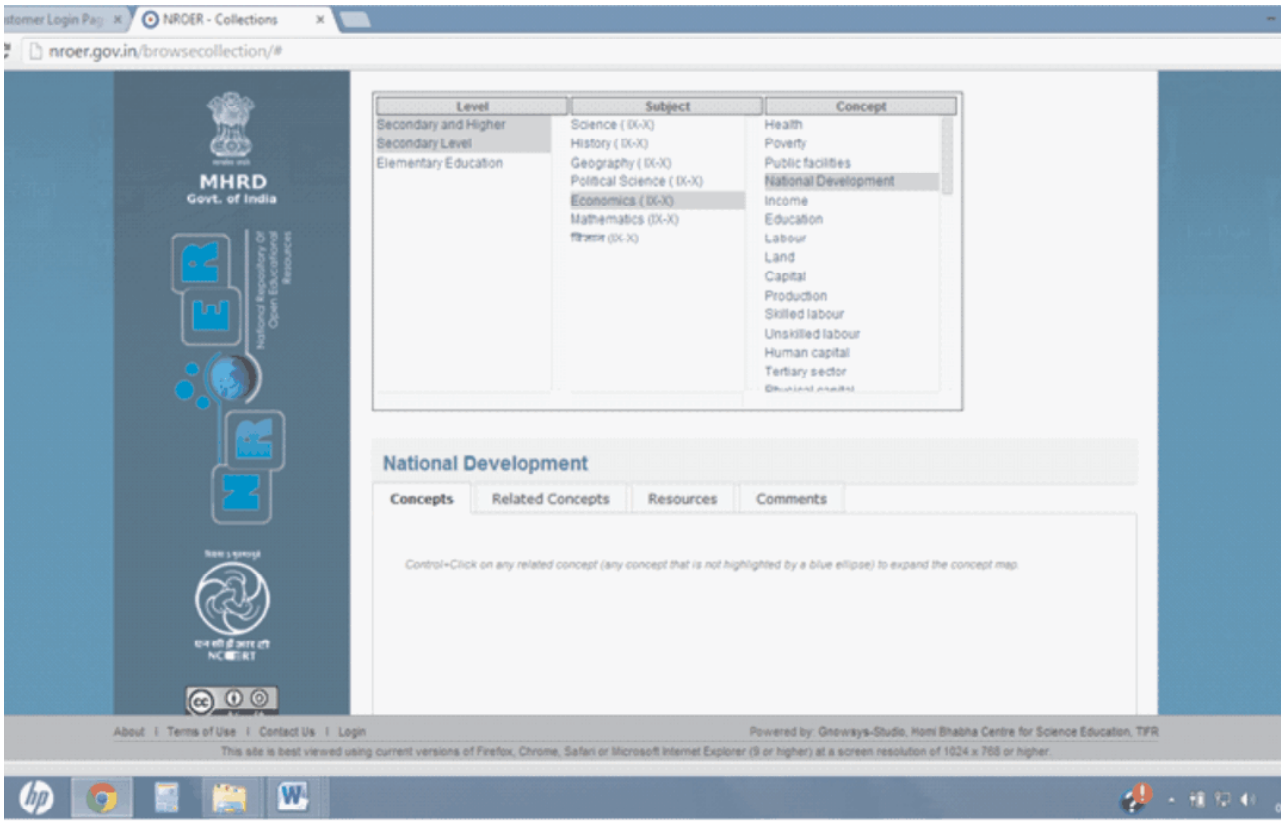

Figure 3: Concept list of Economics for Secondary level displayed on NROER

(2) Concept mapping of identified concepts providing them relations and reverse relations

As the NROER is based on concepts, it organizes its collections into an ever growing semantic map of concepts. Concept mapping is the essential part of process of development of the repository;

therefore the institute is working towards this direction. The concept map itself is a learning resource for teachers, providing an opportunity for critically assessing the curriculum and aiding the construction of their own unique learning themes for their classrooms. The digital resources are mapped to concepts. This enables access to a library from which teachers can choose appropriate resources. Each resource is tagged to related concepts making it accessible for use. The resources can be downloaded and commented upon and are released for free use.

The concept maps on NROER are prepared by groups of teachers along with CIET faculty members in workshop mode. The concept maps primarily were sketched on charts or sheets of paper by the group of teachers by making discussions on the different aspects on which the relationships between the concepts constitute in order to produce a complete semantic map. The speciality of concept maps on NROER is that there is a reverse relationship also with every relationship among the concepts. After the preparation of concept maps they were presented in front of the forum of teachers and subject experts for verification, after verification the uploading of concept maps was executed on NROER web site.

If a ctrl + click is executed with any concept of the concept map the concept map expands, and on clicking to any concept of the concept map the designated page for the concept opens, which comprises the Concept Name with its definition(s), and other details like related concepts, resources and a comment box, this resultant feature of getting the page for a particular concept is same when we search or browse any concept on the NROER (Figure 4 and 5).

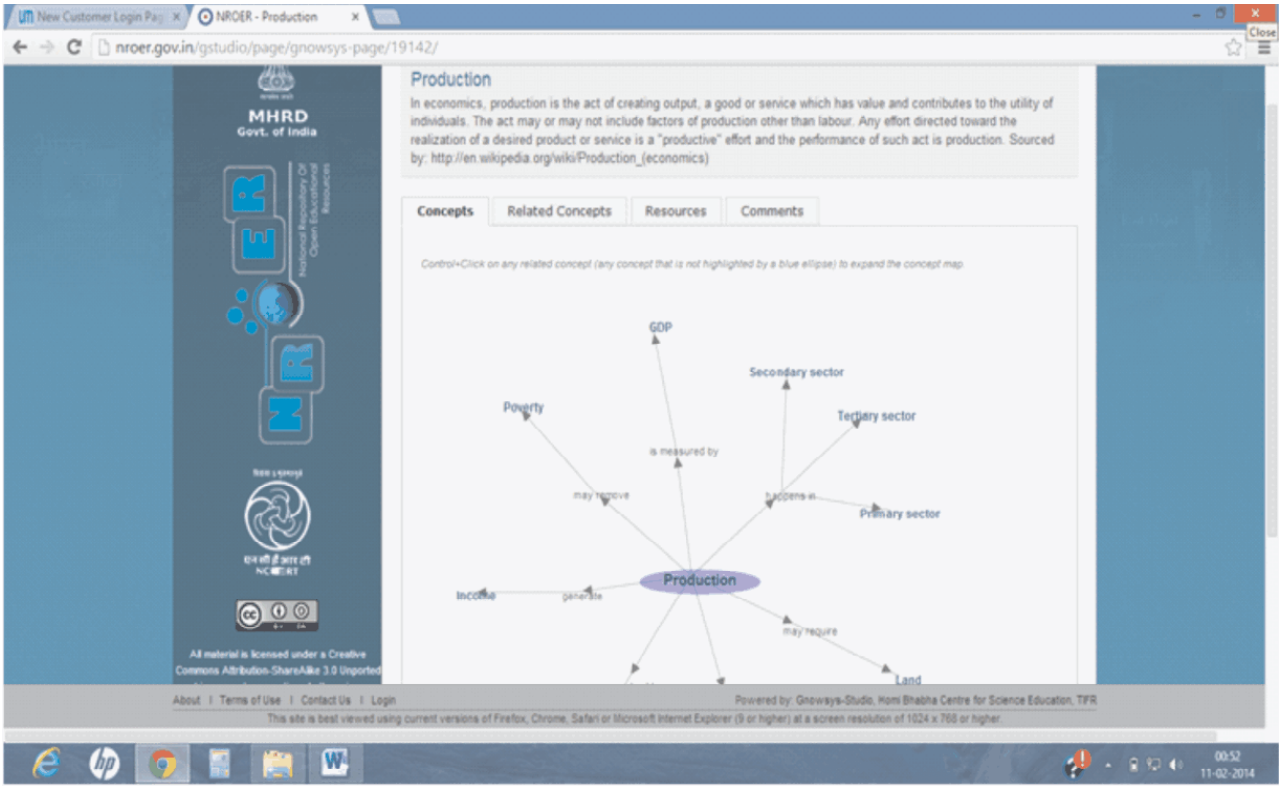

Figure 4: A concept page from the Economics concept list on NROER, showing definition of the concept, buttons for related concepts, resources, comments and concept map as default feature.

Figure 4: A concept page from the Economics concept list on NROER, showing definition of the concept, buttons for related concepts, resources, comments and concept map as default feature.

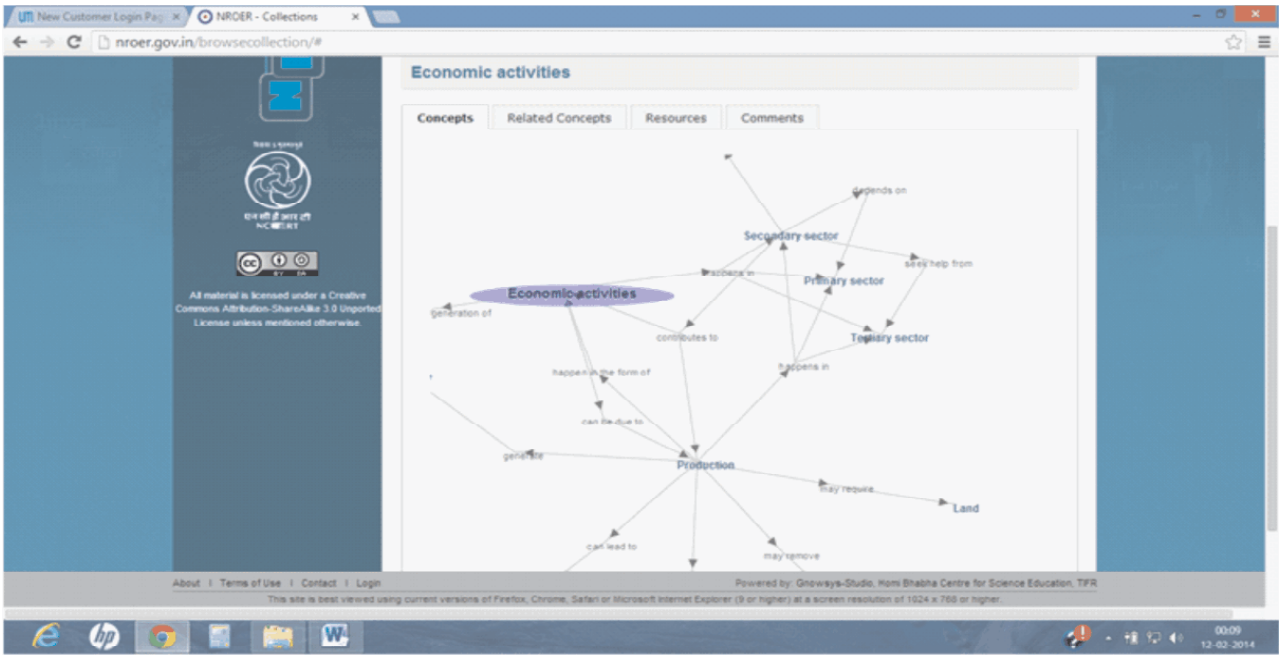

Figure 5: A ctrl + click expands the concept map to its extension limits

(3) Adding up of multiple resources with every concept

On the NROER, after linking the concepts with each other in the concept maps the concepts were mapped with different available related resources like videos, audio clips, images, documents, etc. (Figure 6). These resources can be accessed by the people in various ways, they can view download, use, reuse, revise, remix and redistribute these resources, in this process they have to take care of releasing the revised resource again on NROER under CC BY-SA license.

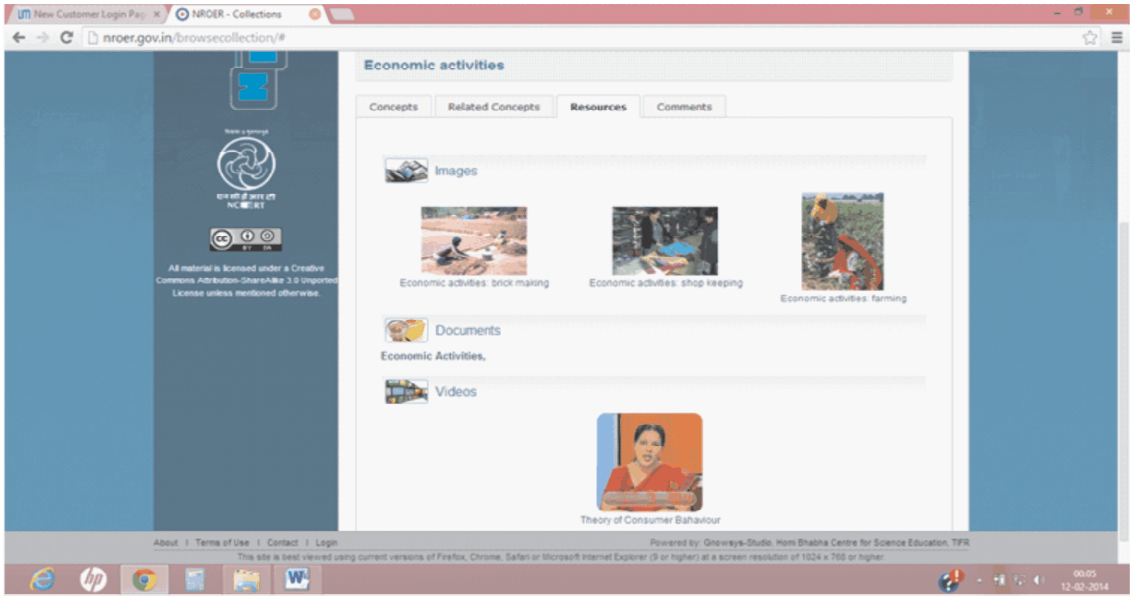

Figure 6: The resource page on NROER showing multiple resources for the concept of 'Economic activities'

(4) Tagging of concepts to allow multiple access with other related concepts and resources

On the NROER every concept is provided with certain tags, these tags are the nearest neighbourhood terms or most appropriate related key term with the concept. By assigning tags the application of search option is enhanced as these key terms help in navigating through the related resources for the concept because every related resource for the concept is also tagged with the same tags/ key words (Figure 7).

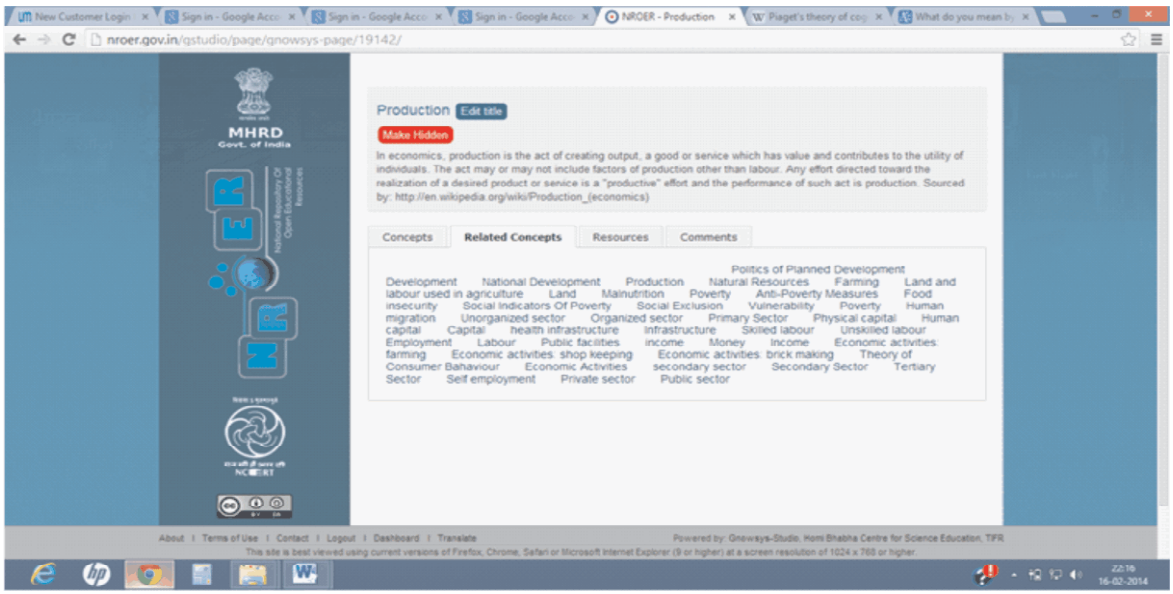

Figure 7: The window on NROER showing related concepts/tags with the concept 'production'

2.2 Advantage of concept mapping as a tool for learning

NROER is completely based on concept mapping and online accessibility of resource in such a form which bridges the gap between cognitive learning and application based learning. Concept maps are based primarily on the learning theories of cognitive psychologists, specifically Ausubel's Assimilation theory. A concept map helps represent ideas in a way that models an individual's cognitive structure.

According to David Ausubel, "the most important single factor influencing learning is what the learner already knows" (Novak, 1998). Relationships between concepts are formed when two concepts overlap on some level. As learning progresses, this network of concepts and relationships becomes increasingly complex. Ausubel compares meaningful learning to rote learning, which refers to when a student simply memorizes information without relating that information to previously learned knowledge. As a result, new information is easily forgotten and not readily applied to problem-solving situations because it was not connected with concepts already learned.

However, meaningful learning requires more effort, as the learner must choose to relate new information to relevant knowledge that already exists in the learner's cognitive structure. This requires more effort initially, however after knowledge frameworks are developed, definitions and the

meanings for concepts become easier to acquire. Further, concepts learned meaningfully are retained much longer, sometimes for a lifetime. Teachers can encourage creative thinking by using tools such as concept maps.

3.1 Educational Implications of NROER: What people (teachers, students, etc.) can do on the Repository?

The NROER provides multiple resources for every concept in order to make the teaching – learning process of the same more effective. These resources are present in the form of videos, audio clips, interactive objects, images and documents. Anyone who accesses the repository can view, download, use, remix, revise, reuse and redistribute the selected resource, but the revised resource should be shared again on the repository for further dissemination of the same, as all the resources are released under CC BY-SA licence on the NROER. This process has a wide scope of frequent use of digitised content by the society, fulfilling the most important objective of NROER. In addition there are some more educational implications, listed as under:

(1) Contribution of digitised resources by teaching-learning community on the NROER

The collaborative creation of e-content is among the aims of NROER, to fulfil this aim NROER invites contribution of resources from the teaching-learning community or anybody who has created or retrieved any open educational resource and want to release the same under CC BY-SA license (Figure 8). For making a contribution one has to register on the Repository after that a small form with fields for licensing attribution and details of the contributed resource is to be filled, this is followed by attaching the resource to be contributed, and submitting on the NROER. The contributed resource will be uploaded on the Repository after evaluation of the same, evaluation is done by a structured mechanism on NROER.

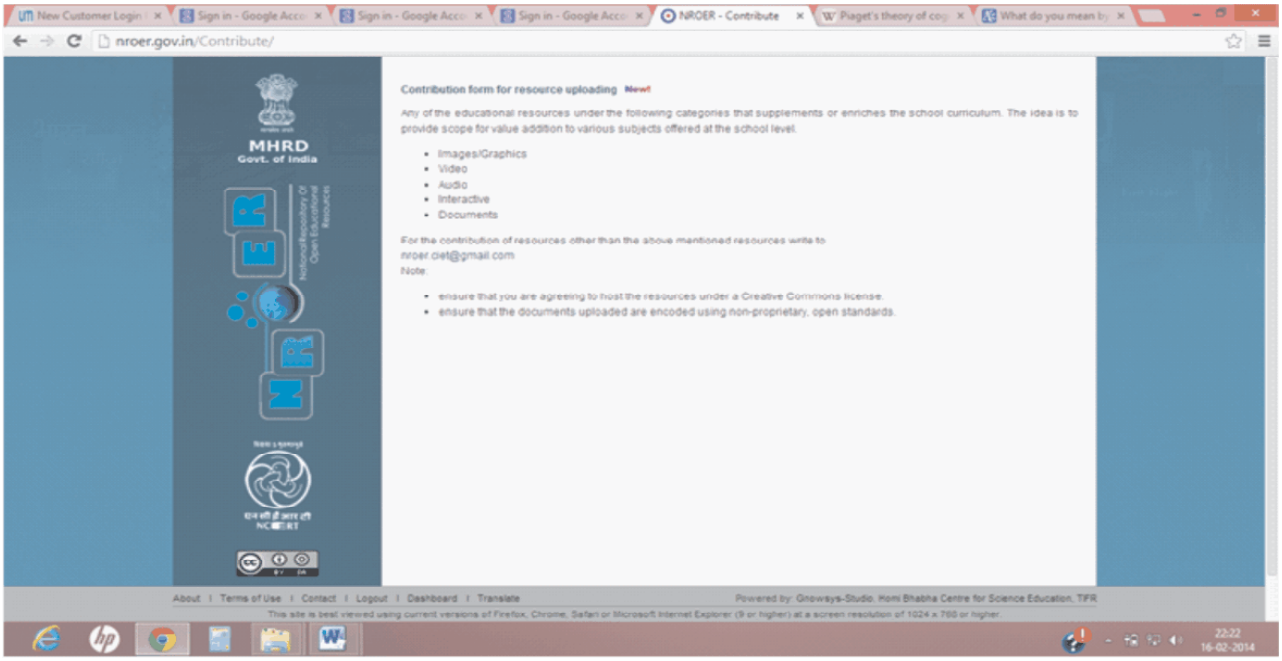

Figure 8: Window for contribution of resources on the NROER

(2) Commenting , critique on the concepts or related resources

NROER follows a democratic mode of action which includes active involvement of users and contributors by the means of commenting or critique on any aspect of the Repository, be it resources, descriptions, concept maps, definitions or others (Figure 9). The users can also rate a resource by assigning stars to it. This process allows the management team to continuously receiving feedbacks and acting accordingly. This process also allows a user to share the ownership of a resource as everything is released under Open Access Scenario on NROER.

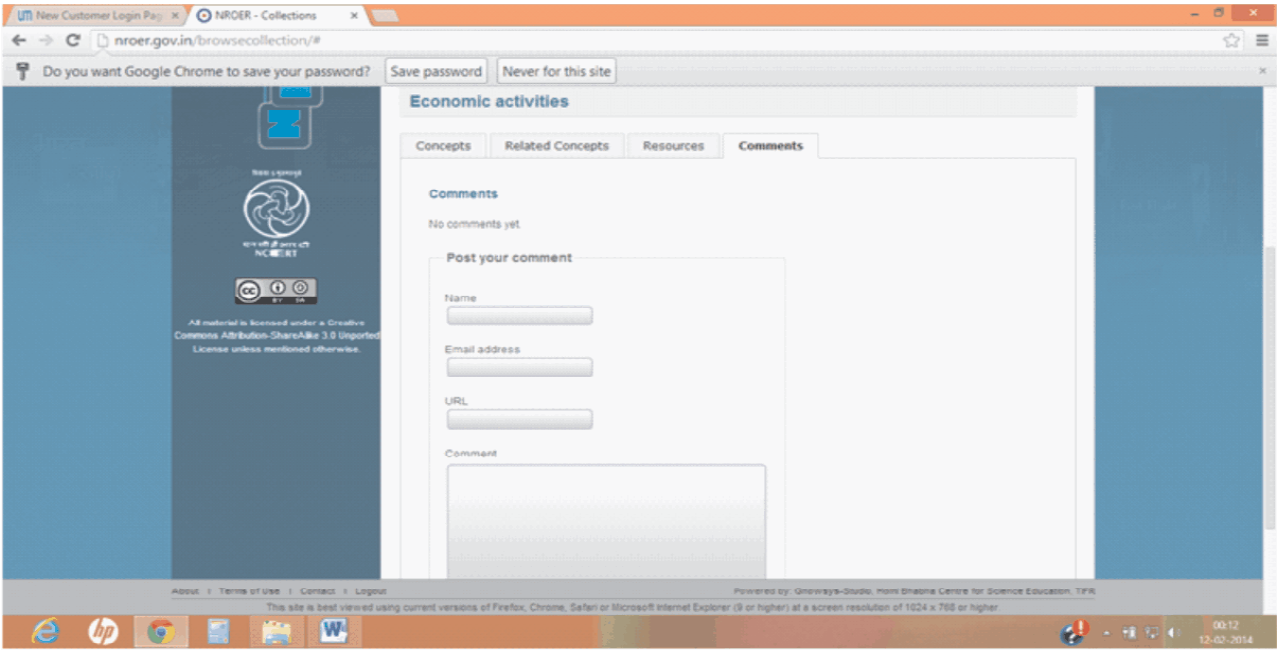

Figure 9: Window showing comment/critique option on the NROER

Conclusion

The open educational scenario worldwide and especially in India is gaining popularity with every passing day. National Repository of Open Educational Resources (NROER) is an enthusiastic project in this row. Resources housed on NROER are free to access, reuse, remix and redistribute by anybody, as they are released under the CC BY-SA licence. With NROER the NCERT is willing to cross the boundaries of the textbook. The Economics content is one of the examples in this line. The dream of NROER will be realized when it becomes useful for each and every teacher, each and every child, across geographies, bridging the digital divide. This dream requires the contribution and critical participation of each one of us. Be a part of the movement. Join today.

Web Resources

- http://nroer.gov.in
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3.8 INTERFACE BETWEEN ECONOMICS AND MATHEMATICS.

ABSTRACT

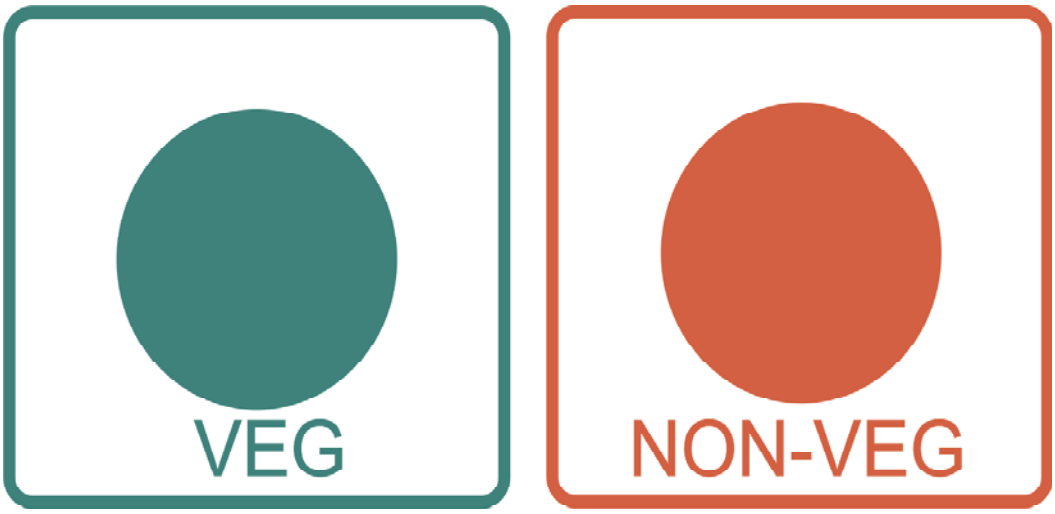
If Mathematics is the queen of Sciences then economics is the most utilised application of Mathematics Right from the olden days of exchange of materials for business to the story of Aladin where lack of Mathematical knowledge forced Aladin's wife to ask her relatives for measuring weights.

After ages and upon development the development of Economics and mathematics their relationship has also grown tremendously. After the onset of CCE the need of Integrated approach to learning has cropped up.This paper reflects my efforts to integrate social studies with Mathematics in general and Economics and Mathematics in particular for secondary school curriculum.

The foundation stone of this paper was laid in my mind in one of the parent teacher meeting. Actually, few students who were excellent in art, sports, music dance etc were not doing well in Mathematics. As a teacher, I was immensely moved by their talent in other fields and as an individual I am ardent fan of that creative talent. The parents were not happy as their children could not do well in Mathematics. In fact, they were aggressive and frustrated over this issue. That was the day; I realized that "Mathematics is the queen of all Sciences". As a teacher I wanted to improve their performance in Mathematics, so I decided to bring about some innovative methods/experiment to help my students.

As I have already stated that Mathematics is the queen of Sciences I have always been curious to connect Mathematics with other disciplines my efforts in connecting Mathematics with Social Sciences is

CONNECTING MATHEMATICS WITH SOCIAL STUDIES



SIGNS

We found "MATHS" the prime cause of this geographical phenomenon.

these two bodies of water were merging in the middle of The Gulf of Alaska and there was a foam developing only at their junction. It is a result of the melting glaciers being composed of fresh water and the ocean has a higher percentage of salt causing the two bodies of water to have different densities and therefore makes it more difficult to mix.

The Mathematical number of amount of salt per unit volume in the two oceans is different in these oceans hence they do not meet.

Now Economics is a very interesting as well as challenging subject and my efforts to connect it with different disciplines and my subject goes like this

ECONOMICS AND ENGLISH

There are many proverbs in English

- A bird in hand is worth two in the bush.
- An inch of time cannot be bought by an inch of gold.

Infact the proverb no 1 is an excellent combination of English, Mathematics and Economics.

This proverb has the capacity to warn us against debt traps.

ECONOMICS AND MATHEMATICS

According to a definition " Production, exchange and consumption of goods and services are among the basic economic activities of life.

Now let us see the Linear Programming problems on production (Manufacturing) ,

Exchange of goods (transportation) Consumption of goods (Diet problem).

LINEAR PROGRAMMING PROBLEMS ON PRODUCTION (MANUFACTURING)

A small firm manufactures gold rings and chains. The total number of rings and chains manufactured per day is at most24. It takes 1 hour to make a ring and 30 minutes to make achain.The maximum number of hours available per day is 16. If the profit on a ring is 300 and that on a chain is 190, find the number of rings and chains that should be manufactured per day , so as to earn the maximum profit. Make it as an L.P.P. and solve it graphically.

EXCHANGE OF GOODS (TRANSPORTATION)

There are two factories located one a place P and the other at place Q. From these locations, acertain commodity is to be delivered to each of the three depots situated at A, B and C. The weeklyrequirement of the depots are respectively 5, 5 and 4 units of the commodity while the productioncapacity of the factories at P and Q are respectively 8 and 6 units. The cost of transportation perunit is given below:How many units should be transported from each factory to each depot in order that thetransportation cost is minimum? What will be the minimum transportation cost? How we can helpour parents/nation to save money by using easy/public transportation.

CONSUMPTION OF GOODS (DIET PROBLEM).

A diet for a sick person must contain at least 4000 units of vitamins , 50 units of minerals , & 1400 of calories . Two foods A & B , are available at a cost of Rs, 4 & Rs , 3 per unit respec. If one unit of A containa 200 units of vitamin , 1 unit of mineral & 40 calories & one unit of food B contains 100 units of vitamin , 2 units of minerals & 40 calories , find what combination of foods should be used to have the least cost ?

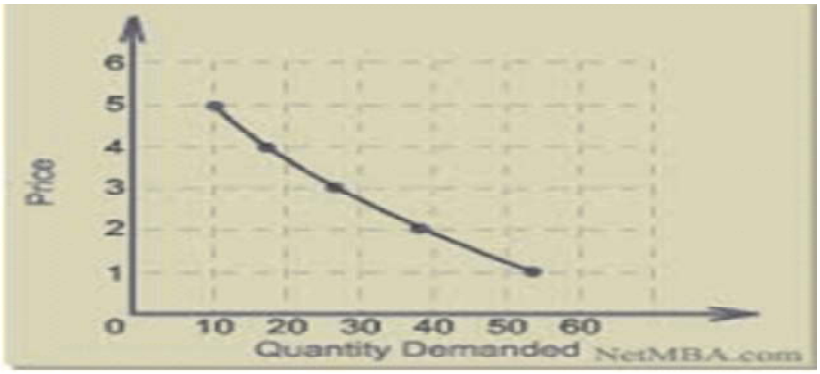
ECONOMICS AND DIRECT VARIATION.

NO OF COMMODITY	COST OF COMMODITY	PROFIT
1	100	20
1000	100000	20000
INCREASE	IN	COST
1	200	
1000	200000	40000

SO

N1/N2 = P1/P2

When we are teaching the concept of direct variation to a 7th grade child we must try to put the idea of Consumer behaviour and budgeting into his mind by means of above example and explaining him that this problem will work only if the behaviour of the consumer does not change along with rise in price.



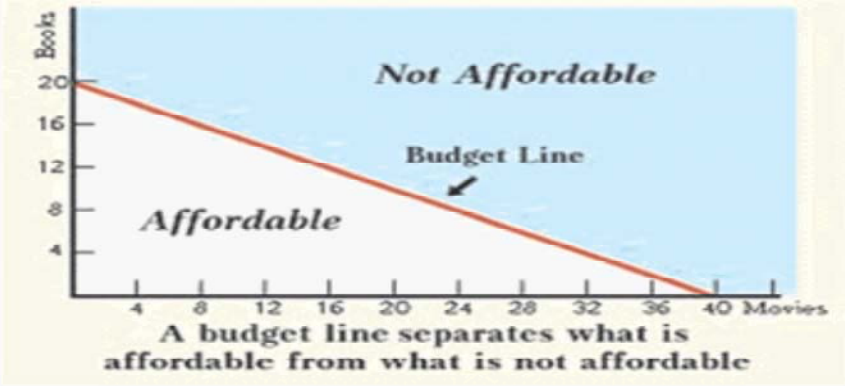
The idea of demand curve can be given.

This can further be connected to a value based question that Should the cost of basic commodities like milk, rice etc increased for mere increasing the profit. What will be the fate of poor people then?

BUDGET LINE

In class XI we have Linear inequalities the concept of budget line and its graph can be taught with linear inequalities

ECONOMICS AND MORALITY



In olden days there was barter system. One Shop keeper complained the King about another Shopkeeper saying that the bread which he sells me saying that it is one pound is always lesser than one pound. What shall I do?

The other shopkeeper was called by the King and he was shocked to know about the case he was really a honest person. Then why did he do that?

The answer that he gave the King was shocking!

He told the king I do not have weight for one pound the complainant sends one pound of fruits to me I use them as weight and give him one pound of bread.

3.9 PUPILS' PERFORMANCE IN ECONOMICS- AN ACTION RESEARCH

Abstract

It has been observed that economics as an academic subject has become very significant and relevant from employment and other points of view in today's fast changing economic world which have resulted in an increase in its demand at the school level. The education system specially the National Curriculum Framework (2005) focuses on pupil-oriented teaching-learning process in classroom in which efforts are made to bring out pupils' excellence. Teaching methodologies and techniques have been more advanced and facilitative to pupils. So, keeping these facts in mind it is desired that pupils should necessarily perform better in economics at the school level. But, the things are somewhat different as observed in one of the Government Boys Senior Secondary School of Directorate of Education, Delhi Administration, where the performance of pupils' in economics at senior secondary level- class XI in their first term examination was very low. Educational theory tells us that pupils' learning is affected by multiple factors and their performance depends on many factors like difficulty level of curriculum, teaching-learning process, classroom environment, teachers' teaching competence level, pupils' learning commitment level, availability of appropriate study material, pupils socio-economic status, overall school environment etc. It became necessary to find out the possible specific reasons responsible for the low achievement in economics of these pupils' and to achieve this objective an action research is planned and conducted. Present paper, apart from the methodology and tools of action research, expresses statistically the first term score of pupils which they achieved in economics, reasons responsible for their low achievement and presents some suggestions for improving their performance in economics as an academic subject, in future.

Key Words: Pupils', School, Class, Economics, Achievement, Learner centered approach.

Introduction

Nowadays, Economics has been emerging as one of the most important subject of knowledge for better job opportunities. It has occupied very important status not only in the school curriculum but in higher education as well. It has been recognized that economics has great implications for both individual and society as a whole. At secondary level it is taught as an inter-disciplinary subject under social science in which it is given lowest weightage and accordingly only few concepts are taught as an introduction of economics as a subject. While it is being recognized that more focus should be given to weightage of economics at secondary level so that the students with adequate knowledge could enter at the next level. At senior secondary level, economics is being offered as a separate subject with full weightage. But because of low encouragement at secondary level, its choice of study at this level is affected and it remains one of the most difficult subjects. Following in table 1 are mentioned class wise books of NCERT:

Table 1: Class Wise Description of Books of NCERT

S No.	Classes	Books
1.	IX	Economics
2.	X	Understanding Economic Development
3.	XI	• Indian Economic Development • Statistics for Economics
4.	XII	• Introductory Microeconomics • Introductory Macroeconomics

Instructional Objectives of Economics

According to NCERT (1988), following are the instructional objectives of Teaching Economics at school level:

- To acquire the knowledge (information) of facts, terms, concepts, conventions, trends, principles, generalizations, assumptions, hypotheses, problems, processes etc. in Economics.
- To develop an understanding of facts, terms, concepts, conventions, trends, principles, generalizations, assumptions, hypotheses, problems, processes etc. in Economics.
- To apply the acquired knowledge of Economics and its understanding in unfamiliar situations.
- To acquire the practical skills essential for the study of Economics.
- To develop interest in the subject and problems related to economic life of the people of one's own country and of those of other countries of the world.
- To develop desirable positive attitudes necessary for developing a broader outlook.

Meaning of Action Research

Action Research is a practitioner based research which is essentially designed to deal with a practical problem and to support a planned programme for change. It has its own characteristics; some of them are the following:

- It assists the teacher in solving his practical problems related to teaching, curriculum etc.
- It increases professional competencies of the teacher.
- It can be conducted in the immediate work situation.
- It is participatory.
- It is concerned with diagnosis of a felt problem in a particular situation and solving it in that context.
- It has a vast scope as it covers almost all activities performed by the teacher and school like teaching methods, evaluation procedures, classroom control, school management etc.

Rationale of the Study

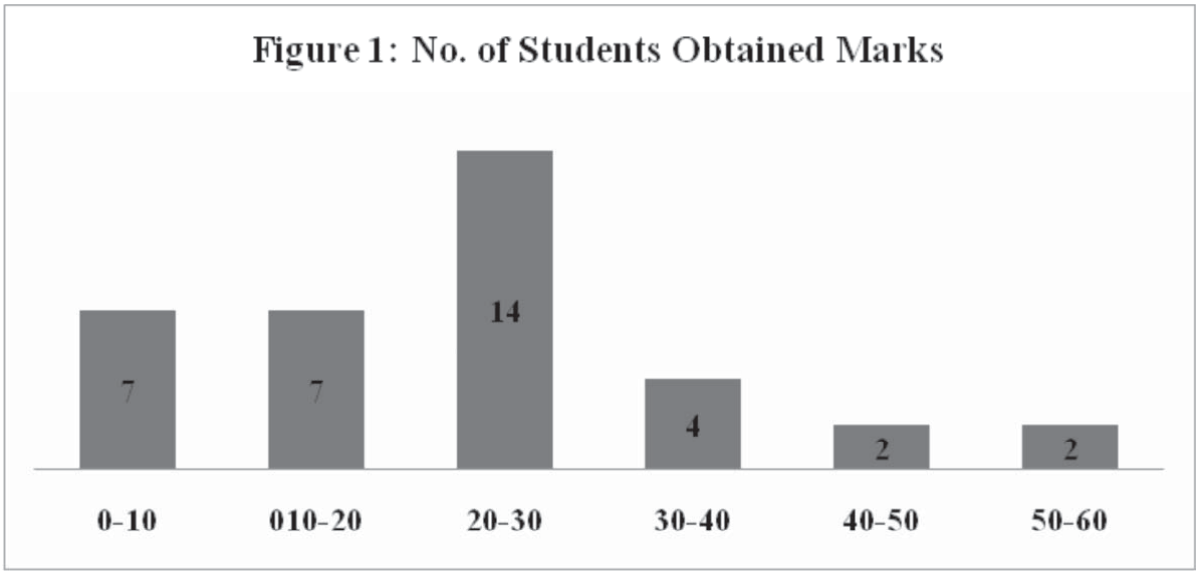
In recent years, there have been many reforms in the education field specially the teaching learning process and the evaluation system. NCF 2005 brings the students in the centre place in the system and focuses on the role of students in the learning process. The role of teacher is that of a facilitator not a dictator. All these aim at improving the learning process and also improving the student's achievement in different school subjects. With all these reforms, it is expected that student achievement will increase. But during the supervision of the B.Ed. Teaching Practice, it was observed that the achievement in Economics subject was very low of XI class students of G.B.S.S.S. Kalkaji. The performance of the students was very disappointing. So, the researcher decided to look into the factors that were responsible for such a performance. The researcher decided to understand the student and teacher view on this. So, the researcher found a problem and tried to find the answer for it through action research and to give some suggestions on the same. The secondary data was collected in the form of the achievement score of the students in the first term paper in Economics

out of 75 marks. Data was collected of the whole XI class of the school comprising of 36 students out of which 6 students were of reserve category. Following in table 2 and Figure 1 roll no. wise and in table 3 and Figure 2 category wise marks are presented:

Table 2: Marks Obtained in Economics by Students in First Term of the Session 2013-14

Roll No.	1	2	3	4	5	6 (SC)	7	8	9
Marks Obtained (75)	28	27	13	02	18	14	19	05	23
Roll No.	10	11	12(SC)	13	14(SC)	15	16	17	18
Marks Obtained (75)	26	44	23	06	01	22	21	04	03
Roll No.	19	20	21	22(SC)	23	24	25	26	27
Marks Obtained (75)	16	25	33	20	03	15	26	29	40
Roll No.	28	29	30	31	32	33(SC)	34	35	36(SC)
Marks Obtained (75)	32	31	52	36	18	57	25	25	27

Source: Award List Economics in of First Term of the Session 2013-14



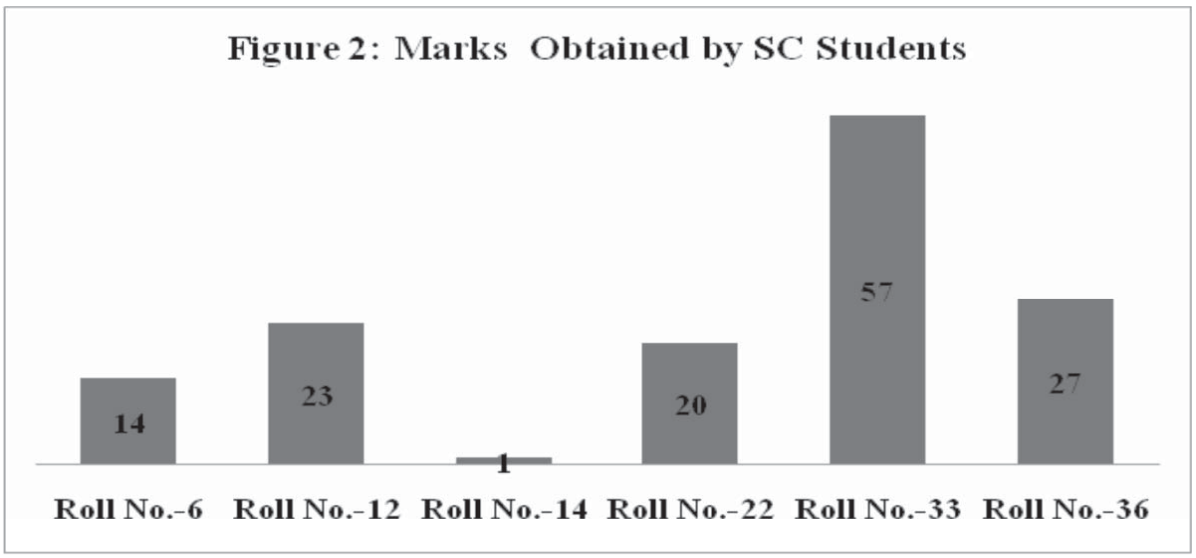


Table 3: Statistical Analysis of Pupil's Ist Term Achievement in Economics

S. No.	Components	Mean	Median	Mode	Standard Deviation	Range
1.	All Students	22.47	23.0	25.00	13.17	56
2.	Non SC Students	22.23	24.0	24.17	12.35	50
3.	SC Students	23.66	21.5	17.18	17.05	56

The mean score of the students was 22.47 (30%) only. This shows the low performance of the students. The highest score was 57 and the lowest was 01 only, so the range of marks was also very large, that is 56. Six students scored less than 10 marks. Only two students scored above 50 marks. No student scored above 60. The standard deviation of the data was also very high, i.e. 13.17. This shows the deviations from the mean score.

The mean score of the students in the reserved category was 23.6 (31.5) which is higher than the mean of all the students taken together. The range of marks in this category was 56, which is very high. The highest score in this category was 57 whereas the lowest was only 1. The highest and the lowest scorer both belong to the reserved category.

The mean score of the students was 22.23 (30%) only. This shows the low performance of the students that belong to the general category. The highest score was 52 and the lowest was 02 only, so the range of marks of this category was also very large, that is 50. Five students scored less than 10 marks and only one student scored above 50 marks. No student scored above 55. The standard deviation of the data was also very high, i.e. 12.35. This shows the deviations from the mean score. It is to be noted that there are five students who scored below 10 marks in this category and also the mean score of this category was lower than the reserved category.

All this analysis shows the overall poor performance of the students in the first term examination. The researcher was interested in knowing the reasons of the poor performance by the students.

Selection of the Problem

The selection of the problem is the first step of any research. It determines the research methodology and the other steps of research. In the current study, the problem selected is as under:

'Study of Pupils' Performance in Economics'

Objectives of the Study

Following were the objectives of the study:

- To analyze the status of level of understanding of the Economics textbooks by the students.
- To understand the student's view on Economics as an academic subject and its Teaching-Learning Process.
- To identify the reasons responsible for the low achievement of the students in Economics.
- To compare the performance of the students when taught by learner centered approach with the traditional approach.
- To identify the factors that can help in improving the achievement in Economics.
- To suggest measures for improving the achievement of students in Economics.

METHODOLOGY OF THE STUDY

Tools of the Study

14. Informal Interview with the Economics Teacher teaching the XI class in the school.
15. Focus Group Discussion with the Learners.
16. A Rating Scale to help improve the achievement of students in Economics. A four point rating scale was developed to know the views of students for achieving objectives of the study. Following in table 4 are given description of rating scale items:

Table 4: Component Wise Description of Rating Scale Items:

S. No.	Components	No. of Items	Sl. No. Items in Scale
1.	Text-Books	6	1-6
2.	Home Environment	2	7-8
3.	School Environment	1	9
4.	Class Environment	1	10
5.	Teacher's Strategies	4	11-14
6.	Use of Community Resources	1	15
Total	15		

Sample of the Study

The entire Commerce section of XI class of G.B.S.S.S. G Block, (E), Kalkaji comprising of 36 students was taken as sample of the study. The rating scale was administered on 30 students only as 6 students were on long leave.

Collection of Data

The primary data was collected from the whole XI class of the school comprising of 30 students out of which 36 students.

Analysis and Interpretation of the Data

Table 5: Item Wise No. and Percentage (%) of Respondents on Four Point Scale

Item No.	Items	Fully	Mostly	Some What	Not At All	Total
1.	According to you from the following, how much are you able to understand the content of the textbook 'Indian Economic Development' after reading it?	07 (23)	12 (40)	11(37	00 (00)	30 (100)
2.	According to you from the following, how much is the utility of the content of the Economics textbook 'Indian Economic Development' in improving your achievement in the subject?	08 (26)	16 (54)	06 (20)	00 (00)	30 (100)
3.	According to you from the following, how much improvement is needed in the content of the economics textbook 'Indian Economic Development' in future to make it more useful and relevant?	10 (33)	09 (30)	11 (37)	00 (00)	30 (100)
4.	According to you from the following, how much are you able to understand the content of the textbook 'Statistics' after reading it?	10 (33)	15 (50)	05 (17)	00 (00)	30 (100)

5.	According to you from the following, how much is the utility of the content of the Economics textbook 'Statistics' in improving your achievement in the subject?	09 (30)	13 (44)	06 (20)	02 (06)	30 (100)
6.	According to you from the following, how much improvement is needed in the content of the economics textbook 'Statistics' in future to make it more useful and relevant?	08 (27)	09 (30)	11(37)	02 (06)	30
7.	According to you from the following, how much is the utility of self-study in improving your achievement in Economics?	18 (60)	10 (34)	02 (06)	00 (00)	30 (100)
8.	According to you from the following, how much is the utility of home environment in improving your achievement in Economics subject?	14 (47)	13 (43)	03 (10)	00 (00)	30 (100)
9.	According to you from the following, how much is the utility of school environment in improving your achievement in Economics subject?	14 (47)	14 (47)	01 (03)	01 (03)	30 (100)
10.	According to you from the following, how much is the utility of peer cooperation in improving the effectiveness of your learning of the content of Economics subject?	10 (34)	18 (60)	02 (06)	00 (00)	30 (100)
11.	According to you from the following, how much is the utility of teacher's using student centered teaching processes in improving the effectiveness of your learning of the content of Economics subject?	20 (66)	10 (34)	00 (00)	00 (00)	30 (100)

12.	According to you from the following, how much is the utility of teacher using teaching skills such as asking questions, explaining etc. in improving the effectiveness of your learning of the content of Economics subject?	22 (63)	05 (17)	03 (10)	00 (00)	30 (100)
13.	According to you from the following, how much is the utility of teacher's additional efforts such as extra individual teaching, giving learning resources etc. for teaching the content of Economics in an effective manner?	11 (37)	15 (50)	04 (13)	00 (00)	30 (100)
14.	According to you from the following, how much is the utility of project work in learning the content of Economice more effectiverly?	05 (16)	16 (54)	07 (24)	02 (06)	30 (100)
15.	According to you from the following how much is the utility of using school and community resources to imporove your achievement in Economics?	07 (23)	12 (40)	07 (24)	04 (13)	30 (100)

Note. Figure Outside the Bracket Denotes Number of Respondents.

Figure Within the Bracket Denotes Percentage (%) of Respondents.

- 40% of students responded that they mostly understood the content of the Economics textbook 'Indian Economic Development' after reading it, whereas 37% understood it partially and 23% fully understood after reading it. This shows that mostly students understood the content of the Economics textbook.
- 54% students found the content of the Economics textbook 'Indian Economic Development' mostly useful in improving the achievement in the subject, and 26% found it fully useful and 20% somewhat useful. So, mostly all the students found the content useful in improving their achievement in the subject.
- 37% students felt that somewhat improvement is needed in the content of the economics textbook 'Indian Economic Development' in future to make it more useful and relevant.
- 50% of students responded that they mostly understood the content of the Economics textbook 'Statistics' after reading it, whereas 33% understood it fully and 23% partially understood after reading it. This shows that mostly students understood the content of the Economics textbook.

- 44% students found the content of the Economics textbook 'Statistics' mostly useful in improving the achievement in the subject, and 30% found it fully useful and 20% somewhat useful. However, 2 students, i.e. 6% responded that they did not find the Statistics textbook helpful in improving the achievement in the subject.
- 37% students felt that somewhat improvement is needed in the content of the economics textbook 'Statistics' in future to make it more useful and relevant. 30% mostly agreed that improvement is needed in the content of the economics textbook 'Statistics' in future to make it more useful and relevant. 6% students were of the view that no improvement is needed in the content of the textbook.
- 60% of the students responded that self-study is fully useful in improving their achievement in Economics and 34% felt that it is mostly useful in improving their achievement in the subject.
- 90% students believed that home environment is very useful in improving their achievement in Economics.
- 94% students believed that school environment is very useful in improving their achievement in Economics. However, there was one student who felt that school environment is not at all useful in improving the achievement in Economics.
- 60% of the students mostly found peer cooperation useful in improving the effectiveness of your learning of the content of Economics subject whereas, 34% fully agreed with the statement.
- 100% students believed that mostly teacher's using student centered teaching process helps in improving the effectiveness of their learning of the content of Economics subject. This shows that the students want their teachers to use student centered teaching process.
- 63% of the students were of the view that teacher using teaching skills such as asking questions, explaining etc. are fully useful in improving the effectiveness of your learning of the content of Economics subject. The students gave a lot of importance to the teacher's teaching skills.
- 50% students responded that mostly the teacher's efforts such as individual teaching, giving learning resources etc. are useful in teaching the content of Economics in an effective manner. They appreciate the extra efforts put in by their teachers for helping them in their learning process.
- 52% students believed that project work is mostly useful in making the content of Economics more effective. However, 6% were of the view that the project work was not at all useful in making the content of Economics more effective.
- 40% students responded that school using community resources was mostly useful to improve your achievement in Economics. 13% of the students responded that school using community resources was not at all useful to improve your achievement in Economics.
- In the focus group discussion that was conducted with the learners stressed upon the inability of the teachers to make the subject interesting and lively. The teachers mostly used the textbook reading method to teach the content. No activities are taken up by the teachers. Also, some students pointed out that teacher's punctuality was also an issue, teachers are irregular and also inattentive in checking the homework given by them. The students are not motivated

properly by the teachers so that they can perform well in the subject. They stressed on the school environment also that it is not helpful in learning. So, the students pointed out teaching methodology, lack of motivation, inattentiveness of teachers, and school atmosphere as the main factors for their low achievement in the subject. The students were of the view that if the teacher starts teaching in creative way, they will be interested in the subject.

- In the informal interview with the teacher, the teachers pointed out that the students are not interested in studying, they get no motivation and support from their homes. The teacher was of the opinion that student's socio economic background was also one of the factors for their poor performance. The teacher said that the students were not regular in studies; they only study when they have their examination, also most of them do not complete their home work and some of them have no notebooks also. The teacher said peer teaching can be a good option that can work with them.

Reasons Responsible for Low Achievement of Students

On the analysis of the informal interview of the teachers, focus group discussion with learners and analysis of views presented in the rating scale, the following reasons emerged for their extremely low achievements:

Less weight age of Economics in IX and X class:

It can be seen that economics is taught under the subject Social Science along with History, Geography and Political Science. The weight age of marks given to Economics in IX and X is only 20% which is very less as compared to the other subjects. Less weight age in Examination means less teaching periods and less focus on it by teachers and learners. So, the learners are not able to develop proper understanding of the subject.

- **Economics mostly taught by General Social Science Teachers IX and X class**

Economics is taught under the head Social Science in IX and X classes which is generally taught by a single teacher. Mostly it is seen that the TGT Social Science is from Geography or History background who generally is not able to do justice with Economics teaching. It is observed that the teacher does not have the required experience and understanding of the subject.

- **Teaching Method adopted by teachers in the classes**

It has been observed and pointed out by students also that the teachers adopt the traditional method to teach the subject. They adopt just the lecture method to teach the students. The activity method, role play, discussions, project work, problem solving etc. are not used by the teachers.

- **No availability of quality learning material**

Good quality learning material is not available to the learners which help them understand the concept taught properly. Textbook is the only resource used by the teachers and students. The text books are not properly used I the classrooms. The activities are ignored by the teachers.

- **Economics taught by a retired teacher who is working in extension period, so low motivation level**

The Economics teacher of the school under study was a retired teacher who was given extension of 2 years. So, the motivation level of the teacher and the learners was very low. They did not take interest in the classes.

- **The school and home environment not conducive for learning**

It has been pointed out by the students that the school and their home environment were not conducive to learning. Proper motivation and resources are not provided to the students. Learning resources are not provided to the students. Community resources are not utilized in the teaching learning process.

Planned Interventions and its effects

As it was concluded that the students were not satisfied with the traditional teaching approach adopted by the teacher through the analysis of the rating scale and the focus group discussion with the students learners that the teaching methodology, the researcher decided to intervene in the teaching learning process. The researcher guided the pupil teacher teaching the subject under the practice teaching programme with the learner centered approaches with special focus on the constructivist approach. The pupil teacher was trained by the researcher in the learner centered approaches. The pupil teacher, after going through the training, taught the same class Economics topics using the learner centered approaches wherein the learners were actively involved in the activities.

The researcher observed the classes of the pupil teacher in which he adopted the learner centered approach. The following observations were made:

1. The response level of the students increased.
2. The participation of the students in the class activities increased.
3. The students started questioning in the class.
4. The students started listening with patience to the pupil teacher.
5. The motivation level of the students increased.
6. The students copied the material from the blackboard correctly.
7. The student's regularity and sincerity increased.

The pupil teacher, after delivering the student centered lessons, took their achievement test which consisted of 40 items of 1 mark each. It was seen that the mean score of the same students was 20.56 which is around 50%. This is very high in comparison with the mean score and percentage of their first summative test, which was 22.47 marks out of 75, which is 29.8% only. Their mean percentage increased from 29.8% to 50% after going through the intervention planned by the researcher.

The students responded well in the classes and their understanding of the concepts increased. They started taking interest in the Economics concepts and classes. They started questioning in the class and participating in the classroom activities. Their achievement also increased tremendously, after the intervention.

Results of the Study

Mostly the students were of the view that the two economics textbooks, i.e. Indian Economic Development and Statistics are useful and the students understand them after reading them. The students pointed out that the teachers did not use any creative method of teaching the subject and not enough motivation was provided to them by the teacher. One factor that could be the reason behind the teacher's incompetence to motivate the students and make them understand the text could be that the teacher has not attended any in-service teacher education programme that can help in methodol-

ogy and also the content knowledge. Also, many Economics teachers are of science background as they cannot do M.Sc. from correspondence, they prefer doing M.A. economics from correspondence and become PGT in Economics. But they cannot do justice with the subject.

Teacher's teaching methodology, lack of motivation, inattentiveness of teachers, school atmosphere are the main factors, according to the students for the low achievement in the subject. And, according to the teacher, irregularity, student's background, inattentiveness and no interest in the subject were the main factors for the student's low achievement in the subject.

But when the teacher uses the learner centered approaches, then, the students responded well in the classes and their understanding of the concepts increased. They started taking interest in the Economics concepts and classes. They started questioning in the class and participating in the classroom activities. Their achievement also increased tremendously, after the intervention.

Suggestions

Teachers should teach economics not only by textbook and lecture method only, but should use the project method, games and simulation, problem solving method and the other learner centered methods to teach the subject.

The weight age given to Economics in IX and X should be increased. The teaching periods should also be increased and more concepts should be taught in these classes.

The home and the school environment should be made conducive to learning and good learning material should be provided to the learners.

The classes should be made more interactive and the students should be involved in activities.

The teachers should themselves take up research work for their problems and try to solve them on their own.

The teachers should attend regularly the in-service programmes for the Economics teachers organized by various institutions to refresh their knowledge and to aware them innovations.

Conclusion

The teachers should be encouraged to develop their research skills and through research they should seek solution to their problems that have remained unaddressed so far. The teacher, as researcher can provide equally meaningful research based inputs to improve the process of instruction and education. This is proved in the present study. It can be concluded from this that if the students are taught using the learner centered approaches, their achievement increases tremendously. They take more interest in the classes and respond well to the teacher's questions. Their motivation level increases and they start understanding the concepts better.

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APPENDIX

Rating Scale (4 Points)

'A rating scale to improve the achievement of students in Economics'

General Information

Name……. Class & Section……

Roll No…….. School……..

Instructions:

- There are 15 Multiple Choice Questions in this rating scale.
- There are four options for each question. Tick (√) the option that is correct according to you.
- The questions are based on different components. The main objective of all the questions is to seek the class XI student's opinion on improving their achievement in the subject of Economics. The information given by you will only be used for educational purposes.

1. According to you from the following, how much are you able to understand the content of the textbook 'Indian Economic Development' after reading it?

(a) Fully (b) Mostly (c) Some What (d) Not At All

2. According to you from the following, how much is the utility of the content of the Economics textbook 'Indian Economic Development' in improving your achievement in the subject?

(a) Fully (b) Mostly (c) Some What (d) Not At All

3. According to you from the following, how much improvement is needed in the content of the economics textbook 'Indian Economic Development' in future to make it more useful and relevant?

(a) Fully (b) Mostly (c) Some What (d) Not At All

4. According to you from the following, how much are you able to understand the content of the textbook 'Statistics' after reading it?

(a) Fully (b) Mostly (c) Some What (d) Not At All

5. According to you from the following, how much is the utility of the content of the Economics textbook 'Statistics' in improving your achievement in the subject?

(a) Fully (b) Mostly (c) Some What (d) Not At All

6. According to you from the following, how much improvement is needed in the content of the economics textbook 'Statistics' in future to make it more useful and relevant?

(a) Fully (b) Mostly (c) Some What (d) Not At All

7. According to you from the following, how much is the utility of self-study in improving your achievement in Economics?

(a) Fully (b) Mostly (c) Some What (d) Not At All

8. According to you from the following, how much is the utility of home environment in improving your achievement in Economics subject?

(a) Fully (b) Mostly (c) Some What (d) Not At All

9. According to you from the following, how much is the utility of school environment in improving your achievement in Economics subject?

(a) Fully (b) Mostly (c) Some What (d) Not At All

10. According to you from the following, how much is the utility of peer cooperation in improving the effectiveness of your learning of the content of Economics subject?

(a) Fully (b) Mostly (c) Some What (d) Not At All

11. According to you from the following, how much is the utility of teacher's using student centered teaching processes in improving the effectiveness of your learning of the content of Economics subject?

(a) Fully (b) Mostly (c) Some What (d) Not At All

12. According to you from the following, how much is the utility of teacher using teaching skills such as asking questions, explaining etc. in improving the effectiveness of your learning of the content of Economics subject?

(a) Fully (b) Mostly (c) Some What (d) Not At All

13. According to you from the following, how much is the utility of teacher's additional efforts such as extra individual teaching, giving learning resources etc. for teaching the content of Economics in an effective manner?

(a) Fully (b) Mostly (c) Some What (d) Not At All

14. According to you from the following, how much is the utility of project work in learning the content of Economics more effectively?

(a) Fully (b) Mostly (c) Some What (d) Not At All

15. According to you from the following, how much is the utility of using school and community resources to improve your achievement in Economics?

(a) Fully (b) Mostly (c) Some What (d) Not At All

3.10 LINKING SCHOOL ECONOMICS CURRICULUM WITH HIGHER EDUCATION

1. Introduction

India is at a watershed. With a high proportion of young population, education has assumed centre-stage in discussion and debate. Also, India has emerged as one of the important economies in the world today. In recent years, the world economy has witnessed enormous turmoil with the result that understanding the way the economy functions has become one of the key challenges for every economy in this globalized environment. Naturally, economics as a discipline has become very sought after by students all over the country. The opportunities available after having had a sound background in economics are vast. The challenge for us in India is to be able to provide these students with a foundation in the subject strong enough to enable them to move to any sub-field of their choice with ease.

In order to do this, it is vital to provide a smooth link between the school economics curriculum and the one in higher education. For one, integration will bring continuity and the teaching-learning process will be smoother. Second, repetition of topics can be avoided and the time saved can be spent in delving deeper into concepts and applications. Third, in a discipline such as economics there are certain tools- mathematical and statistical, which are employed to understand economic phenomena. A clearer understanding of these at the school level would facilitate learning at the undergraduate level and help in dispelling the fear which accompanies higher studies in economics. Finally, often the manner in which economics is taught and evaluated at the school level is such that at the end students learn many definitions rather than concepts. It becomes difficult to make them unlearn those definitions. That is why often students who excel at the undergraduate level are the ones who have not done economics at the school level. This paper would attempt to argue that there is a case for intelligently linking the two stages of learning to make the most of the synergies that exist.

The paper is organized as follows: In the first section, an attempt has been made to look at the problem as it exists in the context of India today. This is done through a brief review of the current scenario. The next section identifies the challenges. This is followed by suggestions of possible solutions, keeping in mind both the context of India and the contemporary global environment. A final section gives the concluding remarks on the role that academic practitioners can play in bringing about a smooth transition from one stage to another.

2. The Indian Context:

India has given the world many leading economists; Amartya Sen was awarded the Nobel Prize for his contributions. Many of the economists have worked on problems facing developing countries and they use the most sophisticated tools and methodologies for the purpose. The objective is to provide students of economics the foundation so that they have a smooth learning path which will enable them to compete with the best in the world.

2.1. Current Scenario:

Economics is taught at different levels- at school, college and university. The course contents at different stages are decided, in most cases, without any reference to the earlier stage. There is a diversity of text-books and reference material that are used. Often sections of different books are referred depriving the readings of coherence.

There are many state-level boards in which economics is taught. The level of rigour differs considerably, making the degrees granted not comparable. Some have standards at par with the international level, whereas many are far below.

2.2. Problems:

The main problem that arises because of the framing of syllabi without reference to the earlier stage is that there is little linkage between the school curriculum and that at the higher stage. Besides, the teaching and evaluation patterns encourage students to learn definitions without any clarity of the basic underlying concepts. Students are exposed to a whole array of topics and evaluation is done in a manner which tests the students' ability to recall information rather than sound conceptual understanding. Since entrance to undergraduate studies is determined by the percentage of marks scored at the school level, there is no incentive to go beyond the curriculum to test the knowledge gained.

Specifically, tools which are needed for studying economics at higher levels- like mathematics and statistics are not introduced in a manner which will help a smooth transition with the result that students develop a fear at the undergraduate level.

2.3. Challenges:

There are challenges that exist both at the school and higher levels. First, the number of students who opt for economics is large and growing rapidly. Among those who opt for economics, not all would want to pursue higher studies in economics. It is argued that the level of the school curriculum, therefore, must be such that diverse set of students are able to follow and score well in the examinations. Second, it is a reality that it is difficult to find good teachers willing to teach economics at the school level. This is because of the incentive structure in schools compared to other opportunities available for economics undergraduates elsewhere in the economy. Also, since the teachers themselves have been trained in different boards, there is a lack of uniformity in the dissemination of the course content. Moreover, often promotion of teachers is based on the performance of the students; so marks continue to drive the system.

3. A Possible Solution:

The solution to the present problems could be a multipronged one, consisting at least of three elements to begin with. These are making use of the synergies, handling diversity and continued outreach.

3.1. Making use of synergies:

An analysis of the course content, its dissemination and the final evaluation at the school and the University levels in various parts of the country reveals that they have been framed without an examination of the synergies that can be utilized at the different levels. At the school level, it would be useful to simply introduce the basic concepts and use Indian examples and case studies to motivate the topics. The basic tools of mathematics and statistics can be introduced in a manner so that simple case studies can be done in groups using the tools and this can form part of the evaluation process.

This can form a rich foundation for the students as they prepare for undergraduate studies in economics. The students could also develop on those case studies as they learn more and eventually could turn them into research papers. This carrying on of a project seamlessly through various levels can become an important aspect of continuity and linkage between the various levels.

3.2. Handling Diversity:

It is easy to propose solutions but one has to take account of reality. The diversity that exists in India is a challenge but one can look at it as a great opportunity as well. The curriculum could be fine-tuned to take into account the different interests and different backgrounds of the students. For instance, the case-studies aspect proposed in the previous section could be one where students use their vacation time to study one distinctive aspect of their respective states or neighbourhoods and deal with it in the way they like, using any tool- statistical, analytical or mathematical. This would need creative thinking to ensure that the market is unable to produce the projects so that students cannot simply go and purchase them!

This would become simpler if it is done in a phased manner. Any introduction of change in a curriculum must be well thought-out and done in a calibrated manner where the resources needed for implementation are freely available and of a good quality. For this, first text-books need to be written which would incorporate recent examples from both the global and Indian contexts. This would familiarize students with basic concepts in their courses and their application. Feedback from the users is essential to improve the books. Second, these may be supplemented with handbooks and supplementary readings for teachers. Students could be encouraged to publish their case-studies and a series could be brought out so that prospective students can have access to those. Resource materials that are of good quality and easily available can serve to manage the diversity that exists and that poses an enormous challenge to bringing about a smooth transition from one level to another.

3.3. Continued Outreach:

This is an opportune time to step up efforts to reach out to students, teachers and educationists from different levels through workshops, seminars and conferences to exchange ideas about the problems and attempt to reach a workable solution. The boundaries that exist between the various levels have to be dismantled in order to benefit from the synergies that exist between them. This can be done by incorporating a stage in curriculum revision in which different stakeholders are invited to add inputs. Also, a process of continuous feedback needs to be taken from students, their parents and faculty.

As an interim measure, workshops or summer/winter short courses could be organized as bridge courses to enable the teachers and students to fill the gaps that exist in their knowledge/tool base so that the new curriculum can be carried out innovatively.

This outreach would be enriching because it would not only help handle the diversity and help smoothen the process but also bring together a wealth of information about the various ways in which one could make the course fit into the Indian context while confirming to the international standard.

4. Concluding Remarks:

This National Conference could be a starting point of a process of discussion and debate on how to bring about a smooth transition from the school to higher education. We are at a stage when the challenges can be met with a concerted and continuous effort by bringing in more and more people to think and write about the problems facing this area and make concrete progress towards finding and implementing the suggested solutions. There are many motivated teachers at the school, college and university levels. A pooling of expertise and experience would go a long way in improving the present situation and preparing for the challenges ahead.

3.11 INNOVATIVE PEDAGOGICAL MODULE FOR EFFECTIVE LINKAGE OF ECONOMICS CURRICULUM IN SCHOOL WITH HIGHER EDUCATION

Introduction

With changing business environment and employment opportunities, now students at higher secondary schools have higher educational aspirations than ever before. With more opportunity with private sectors, management education has become an important ambition for every alternate students who pass their school education with higher percentage/grades. Also, technology is playing a crucial role for this dynamic world and one has to update his knowledge as well as skills more frequently. In such dynamic economic, social and political environment, there is an emergent need to shift the focus of present school education particularly in the area of economics.

Education is what will determine how fast India joins the ranks of leading nations of the world, President Pranab Mukherjee said in the valedictory session of the 12th Pravasi Bharatiya Divas, the annual gathering of the Indian diasporas (January 2014). He said the government has prioritised higher education and supported it with increased resources, and enrolment to higher education institutions in the country has increased from 1.39 crore in 2006-07 to 2.18 crore in 2011-12. "India has today 659 degree-awarding institutions and 33,023 colleges," he said. However, despite the growing number of higher education institutes, India has very few institutes of global standards, Mukherjee said.

Also, India has one of the poorest Gross Enrolment Ratios (GER) for higher education in the world. According to 2010 data, India's GER was a meagre 13.8 percent, compared with the global average of around 26 percent. Australia, Russia and the U.S., to name a few examples, have GERs upwards of 75 percent. Although the Ministry of Human Resources & Development had set a target of a 30 percent GER for India by 2020, that target is unlikely to be met. At the current rate of GER growth, India is looking at a GER of around 19 percent.

Present Scenario

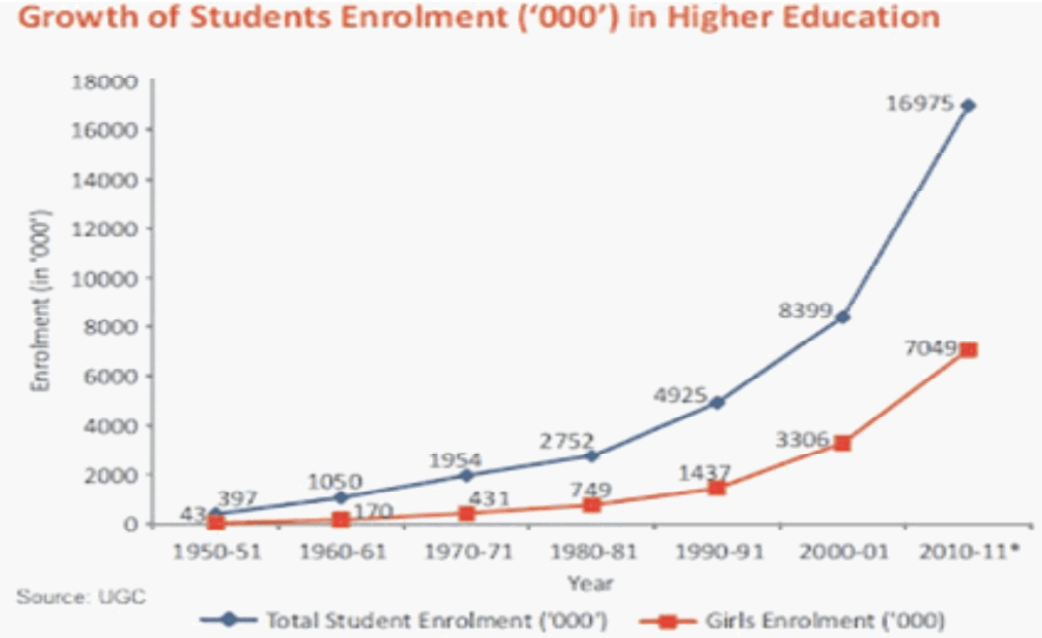
The school system in India has four levels: lower primary (age 6 to 10), upper primary (11 and 12), high (13 to 15) and higher secondary (17 and 18 years of age). The lower primary school is divided into five "standards", upper primary school into two, high school into three and higher secondary into two. Students have to learn a common curriculum largely (except for regional changes in mother tongue) till the end of high school. There is some amount of specialization possible at the higher secondary level. There is a national organization that plays a key role in developing policies and programmes, called the National Council for Educational Research and Training (NCERT) that prepares a National Curriculum Framework. Each state has its counterpart called the State Council for Educational Research and Training (SCERT). These are the bodies that essentially propose educational strategies, curricula, pedagogical schemes and evaluation methodologies to the states' departments of education.

The student enrolment in technical and professional streams accounted for less than 15% of total enrolment in higher education during 2007-08. But with increasing demand from the industry, this enrolment figure is anticipated to rise sharply in future. Also, better career opportunities resulting

from professional and the technical courses will further attract more students to these courses.

Numerous research studies have shown that engaging a student in a rigorous secondary/higher secondary school curriculum as it is found in higher education courses. And this could be one of the best ways that educators can help that student persist and complete a bachelor's degree.

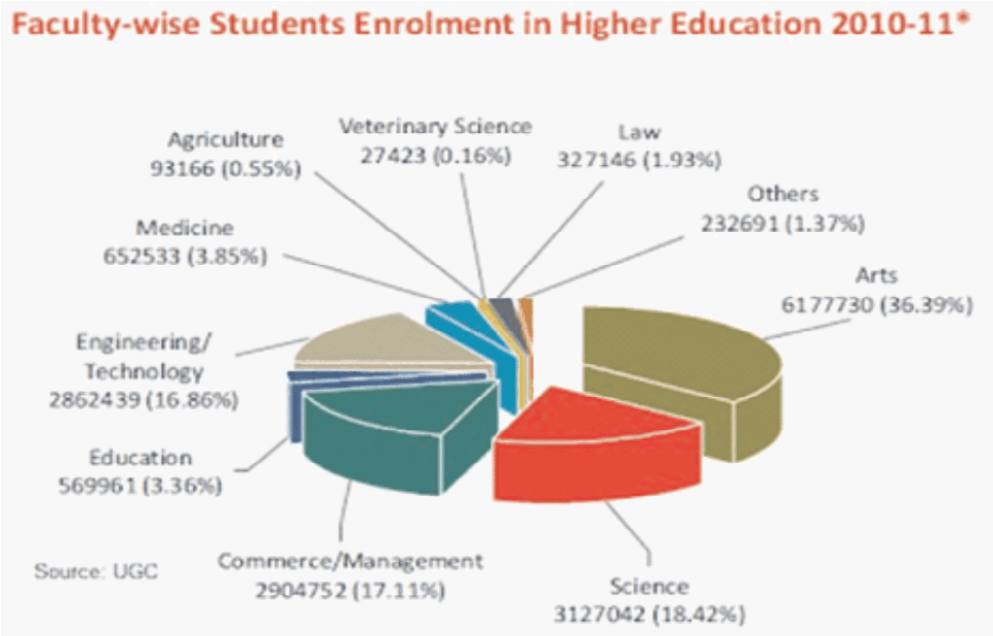
The dramatic changes taking place in the Indian economy jeopardize the economic future of students who leave higher secondary school without the problem-solving and communication skills essential to succeed in post-secondary education and growing number of highly paid jobs. To back away from education reforms that help all students master these skills is to give up on the commitment to equal opportunity for all. The graph below shows that the enrolment in higher education is increasing with geometrical growth in recent decades that is a clear indication of how higher education, preferable professional education is having a crucial role in today business as well as economic environment.



In present scenario, at secondary and higher secondary school, where students who relatively less perform would like to opt the stream like humanities, commerce or art with or without a subject of economics. However, students with science stream may also have option to choose Economics, but only 5-7 percent (as per CBSE data) of these categories are opting subject of economics as one of elective. Contrary to this, with present trend of higher education at University level with more focus on professional stream whether it is management, engineering or law, relatively bright students are opting for better prospects in career. All these professional areas need to have thorough understanding of economics from school level itself. Also students from science stream should be encouraged to select the subject of economics because of their probable future option of professional career. Students with more clarity on conceptual part of economics will have better understanding on its application part once they will join their higher education.

Emerging Need

With globalization and revolution in technology worldwide, business environment is now much dynamic than ever. In this competitive market, some of economic principles need to be understood by each student almost in every sector. How a company/product is going to survive for long. In addition, for its sustainable growth, there is a need to understand the basic of demand and supply equations along with its implications in real life. The faculty wise distribution for the year 2010-11 (Source: UGC Annual Report) shows that more than fifty percent of students are having their enrolment with either arts or commerce/management where they may or may not have choice for subject of economics in arts discipline. However, the relevance of economics is equally important for the students of science (18.42 percent), Engineering/technology (16.86 percent) and Law (1.93 percent) where it is not being opted by more than seven percent from these discipline. Considering the following faculty wise distribution, it is evident that each professional education in University/College level needs to be well supported by knowledge of economics then why not all such students should pass out with sufficient basic learning of economics from their school itself.



Scope of Economics

Economics is regarded as the most practical business subject and is the study of how people manage limited resources such as money to meet their goals. By understanding the reasons why people spend their money in certain ways, economists can try to introduce incentives to change their behaviours. It helps students to develop a clear understanding of the role of economics, to encourage the development of appropriate learning skills, and to generate a positive and ethical attitude to economics in personal, business and public life.

Economics has wide applications and is now a part of many fields, e.g. business administration, industrial management, chartered accountancy, statistics, social work, international trade, education and research, home science, etc. Employment avenues exist in investment boards, investment companies, Census organisations, institutes of growth and economic research, The institute of Applied

Manpower Research, New Delhi, Institute of Economic Growth, New Delhi National Council of Applied Economics Research, New Delhi and the Indian Council of Social Science Research, insurance corporations, agricultural research bodies, development and cooperative banks, The Indian Economic Services, Export promotion councils, business houses; banks, international financial organisations like the World Bank and IMF, Economic journals and newspapers, schools, colleges, universities and NGOs.

Major Issues

In spite of the above facts, the number of students opting elective as Economics in their higher secondary school are almost meagre where as a majority of bright students primarily prefer to go in professional career in their latter part of education. As discussed above that any of such professional streams need sufficient understanding of economics. So it is emergent need that we should devise some mechanism in school education where good number of students should pass out with fair knowledge of this subject. Considering the facts, it is needed to focus on the following points:

- How to improve interest for the subject of economics especially among the students from the science stream in higher secondary school.
- While developing pedagogy at school, how focus should be shifted from dull and complex theory paper to more of interesting subject with use of daily life examples and its application in decision making.
- There is myth that economics is a difficult subject with lot of its principles and theories then how to make it simpler with maximum use of pictorial diagrams and graphs.
- Considering its wider scope, we should highlight the strength for the subject of economics right from school education.
- Economics is a subject with more of dynamic attribute rather than static thus a continuous up-gradation of school teachers' is needed at regular interval.

Approach for Innovative Pedagogical Module

Arthashastra' of Kautilya was used during 'Gurukul 'education system in our old days. Thereafter, not only economy as whole but our education system had gone through major transformation. Today the growth is seen by quantity as well as quality of consumption, where items are used & thrown fast. Economics has become the centre of various activities. Each and every subject is viewed from its economical angle because one always likes subjects which fetch more money in one's future life. Economics has both practical and economic value. It occupies an important position in education and curriculum and has become an integral part of education system. Keeping in view of its importance, now we must focus on various innovative pedagogical modules like:

1. Right from school, the message should be clear to each students that 'Economics' is not a subject only but it is a way for betterment of 'Life' to each individuals in society.
2. More use of picture and graphs for easy understanding of its complex theories.
3. Use of small Case let and live examples for better understanding for application of economic theory.
4. Change in evaluation system with more focus on real life problems based theories.

5. Understanding the importance of data, method and source for collection.
6. Small analysis of data to connect with real problems and its effective interpretations.
7. Message for its strong linkages with professional higher education.

Along with the above seven points, now the school level curriculum for the subject of economics should be based on both inclusion of modern day innovations like technology, trade, capital market and tax system along with its traditional content. The contents being suggested herewith should be based more on its conceptual clarity along with use of its application in small real life examples. The suggestive pedagogical content could be as follow:

A.Fundamental Economics

In the Fundamental Economics, the focus should be given for basic understanding of Economics with its clarity on different concepts. The topic could be covered like Decision Making/Cost-Benefit Analysis, Division of Labor/Specialization, Economic Institutions, Economic Systems, Money, Opportunity Cost, Productive Resources, Productivity, Property Rights, Scarcity, Technology, Trade, Exchange and Interdependence.

B.Microeconomics

In Microeconomics the topic could be covered like Competition and Market Structures, Consumers, Demand, Elasticity of Demand, Entrepreneurs, Government Failures/Public-Choice Analysis, Income Distribution, Market Failures, Markets and Prices, Price Ceilings and Floors, Producers, Profit, Roles of Government, and Supply.

C.Macroeconomics

Here the focus should be given at national level and the suggested topics are Aggregate Demand, Aggregate Supply, Budget Deficits and Public Debt, Business Cycles, Economic Growth, Employment and Unemployment, Fiscal Policy, GDP, Inflation, Monetary Policy and the Federal Reserve, Real vs. Nominal.

D.International Economics

After globalization, a fair knowledge of international economics should also be covered with Balance of Trade and Balance of Payments, Barriers to Trade, Current Account Deficit, Benefits of Trade/Comparative Advantage, Economic Development, Foreign Currency Markets/Exchange Rates.

E.Personal Finance Economics

With fast moving economy, the importance of financial innovation cannot be ignored and focus should be given to Compound Interest, Credit, Financial Markets, Human Capital, Insurance, Money Management/Budgeting, Risk and Return, Saving and Investment.

Future Scope of Research

Over the last few years, new techniques and tools of economic analysis and forecasting; and new computerized systems of economic modelling have developed the subject as an applied discipline. Economics has the distinction of being the only social science discipline for which a Noble prize in

Economic Sciences has been instituted in 1969 by the Central Bank of Sweden. Considering these facts, there is need to identify the gap that why students at school have relatively less inclination towards this subject. Also, how the subject of economics could be popularizing more particularly among school students of science stream to establish a strong linkages with higher education. Some specific studies are required to validate the findings that how students with clarity and sufficient knowledge of economics are in better place in their higher professional education and then subsequently to their professional career too. Analysing the various factors for the purpose to enhance the interest among school students would further enlighten the way to improve the curriculum of economics for secondary and higher secondary school.

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3.12 RELEVANCE OF INNOVATIVE PRACTICES IN TEACHING SCHOOL ECONOMICS IN TODAY'S LIFE

ABSTRACT

Objective: To compare the role of new approaches and traditional methods of teaching in the development of understanding and learning capabilities of school students of economics.

Methodology: A comparison was conducted between the 40 students studying in class XI and XII i.e. 20 from Delhi Public School (considered as Group- A) and 20 from Government School of Maharashtra (considered Group B) as the subjects and their age ranged from 16 – 18 years. Two standard questionnaires i.e. Traditional Teaching Methods Questionnaire (TTMQ) and Innovative Teaching Method Questionnaire (ITMQ) were used as the tool for the collection of data for the present comparison. The data was analyzed by using independent t – ratio and the level of significance was set at 0.05.

Results: The results of the study showed a statistical significant difference between Group A and Group B in respect to understanding and learning capabilities of school students of economics due to new approaches and traditional methods.

Conclusion: Use of new approaches in teaching develops a good understanding and learning capabilities of school students of economics.

Keywords: New approaches and traditional methods of teaching.

Introduction

During the long debate within the international scientific community on teaching, new elements of discussion emerged, mostly concerning the modified social conditions of pre-college teaching, the growing expansion of new technologies and the latest pedagogical theories. In a modern perspective, considering the fact that teaching is an indispensable instrument for every citizen to exercise social control democratically and to carryout rational choices, it has become a real necessity to supply precise objectives and targets for the teaching. During the past 20 years, accelerating progress in science and technology stimulated a new age of discovery; yet integrating emerging technologies within existing industries presents a big challenge. The use of innovative methods in educational institutions has the potential not only to improve education, but also to empower people, strengthen governance and galvanize the effort to achieve the human development goal for the country.

Economics is a social science, as it effectively uses scientific methods to build theories that can help to explain the behaviour of individuals, groups and organisations along with the laws of demand and supply and fiscal parameters. Economics has a reputation for being a bit of a dry subject. Often referred to as "the dismal science," the subject is in comprehensible for being inaccessible to students who do not have an independent interest in it. Because of this, it can be necessary to employ innovative pedagogical practices when teaching the subject to young people.

With the change in curriculum, where CBSE introduces OBTA in classes IX and XI in coming academic session, to impart analytical and conceptual understanding in students and evaluation is done on the application of the subject matter, Therefore the objective of this paper is to evaluate the different traditional teaching method and to suggest other useful teaching methods that can be attempted in imparting knowledge to the students with the changing time and how effective is these pedagogical practices to our learners.

Methodology

For the purpose of the present study the investigator randomly selected 40 students studying in class XI and XII i.e. 20 from Delhi Public School (considered as Group- A) and 20 from Government School of Maharashtra (considered Group B) as the subjects and their age ranged from 16-18 years. Two standard questionnaires i.e. Traditional Teaching Methods Questionnaire (TTMQ) with the reliability of 0.82 and Innovative Teaching Method Questionnaire (ITMQ) with the reliability 0.89, constructed by Dr. Arun Kumar were used as the tool for the collection of data for the present comparison. The data was analyzed by using independent t – ratio and the level of significance was set at 0.05.

Variables selected and criterion measure:

VARIABLE	CRITERION MEASURE
Traditional Teaching Methods	Traditional Teaching Methods Questionnaire (TTMQ) constructed by Dr. Arun Kumar
Innovative Teaching Method	Innovative Teaching Method Questionnaire (ITMQ) constructed by Dr. Arun Kumar

Result and Discussion

The following table illustrates the statistical result of the difference between traditional teaching and innovative teaching methods:

COMPUTATION OF T – RATIO BETWEEN TRADITIONAL TEACHING METHODS AND INNOVATIVE TEACHING METHODS

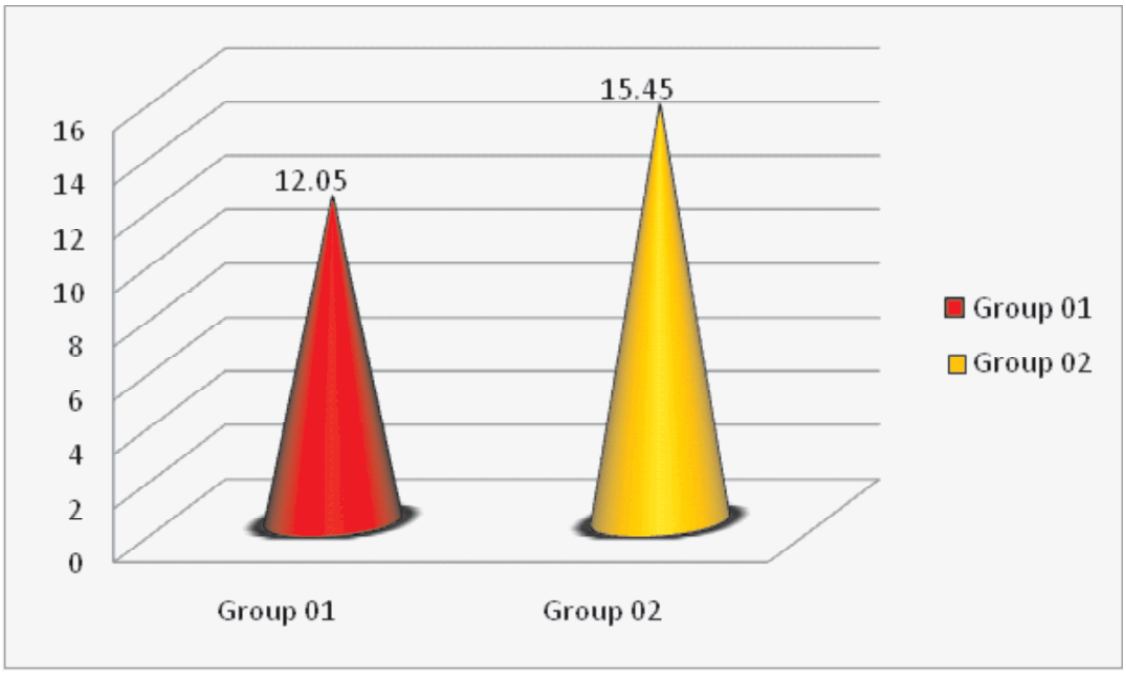
Group	Mean	M. D.	Stnd. Dev.	Stnd. Error	P - value
Group - 1	12.05	3.4	2.43	0.54	5.34*
Group - 2	15.45		2.28	0.51	

**** Significant at 0.05 level***

Tab. t 0.05 (38) 2.021

The above table shows the means of Group – 01 and Group – 02 i.e. 12.05 and 15.45. the mean difference between group 01 and 02 is 3.4, while the standard deviation is 2.43 and 2.28. The obtained t – ratio 5.34 is greater than the table t – ratio 2.021 at 0.05 level of the degrees of freedom 38. The statistical finding shows that the innovative teaching methods have the more impact on learning of economics of students than the traditional teaching methods. The appearance of this kind of research may be due to the fact that traditional teaching methods are often not accepted by the students because of the technological advancement of the students. Today's generation has more magnetism towards the use of technology in the different fields of their daily life including education.

GRAPHICAL REPRESENTATION OF MEANS OF GROUP 01 AND GROUP 02



Conclusion

The result of the present study shows that the innovative teaching methods have the more impact on learning of economics of students than the traditional teaching methods. From the above, we can make out that the Information and communication technology has made many innovations in the field of teaching and also made a drastic change from the old paradigm of teaching and learning.

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3.13 PEDAGOGY OF ECONOMICS:NURTURING CREATIVITY IN ECONOMICS

ABSTRACT

This research is important for all those people who hold the crucial responsibility of the delicate job of handling the young minds at the very first / initial stage of the introduction to the subject and how to do it in the most effective way. The various pedagogies used by the practitioners in general, leave a few problems unaddressed. One of them being-"inculcating creativity of the subject".

The scope of this study is limited to those cases which in a way can be termed as "rebels" to the conventional "Black Board-Notebook method" leading to "mental bunking" and therefore, low scores by them.

The approach of the research was Action- Research/ Case studies, wherein, the correlation between the methods applied and its effect on the interest generated and then the grades of the other-wise "open and creative" students were affected.

A first hand /primary source of data is used to authenticate the cases.

The research findings provide a solution to the problem of drawing/holding the attention and creating a passion towards the target subjects by application of creative practices.

A. INTRODUCTION

Our schools cannot keep-up with the life they are supposed to sustain and improve unless teachers, pupils, supervisors, administrators and school patrons continuously examine what they are doing. Singly and in groups they must use their imagination creatively and constructively to identify the practices that must be changed to meet the needs and demands of modern life, courageously try out those practices that give better promise, methodically and systematically gather evidence to test their worth.

-- StephenMConey.

Economics as an independent branch of social sciences is studied at secondary level of schooling. Economics as a separate subject is not taught to the lower class (I to VIII). At IXth, Xth level, only elementary and practical knowledge of economics is provided to the students as a part of social studies. Some of the important facts and ideas are mostly based on the important features of the Indian economy and its economic system. Ultimately this form of knowledge will become a good background to understand economics as an independent subject at the secondary level of schooling.

The higher level of schooling consists of XI and XII classes. The students at this level are matured enough to understand complex problems and various theories of economics. They can understand various abstract concepts and principles if the teacher presents them in logical and interesting manner in the classroom teaching.

Every teacher and educationist of experience knows that even best curriculum and the most perfect syllabus remains dead unless quickened into life by the right methods of teaching and right kind of teachers. Sometimes even an unsatisfactory and unimaginative syllabus can be made interesting and significant by a gifted teacher who does not focus his mind on the subject matter to be taught or the information to be imparted to the students but also on their interest and aptitudes, their reaction

and responses. He judges the success of his lesson not by amount of matter covered but by the understanding, the appreciation & the efficiency achieved by the students.

A method is not merely a device adopted for communicating certain items of information to students and exclusively the concern of a teacher who is supposed to be at giving end. Any method good or bad links up the teacher and his pupils into organic relationship with constant mutual interaction. It reacts not only on the mind of the student but on their entire personality, their standards if work & judgment, their intellectual and emotional equipment, their attitudes and values. Good methods that are psychologically & socially sound may raise the quality of their whole life. Bad methods may debase it. So in the choice and assessment of methods, teachers must always take into consideration their end products, namely the attitudes and values inculcated in them consciously or unconsciously.

B. EXISTING PEDAGOGICAL METHODS FOR TEACHING ECONOMICS AND THE PROBLEMS ASSOCIATED:

There are several methods of teaching which are used to teach economics in India:

1. Lecture method
2. Text book method
3. Project method
4. Problem solving method
5. Discussion method
6. Inductive and deductive method
7. Supervised study method.

1. Lecture method: Though lecture method has a few merits of being economical, of covering the syllabus in the limited time provided by the time table, moreover it also simplifies the work of the teacher.

But at the same time, it provides little scope for student activity. Economics is based on analytical and practical aspects. It requires more involvement of students in the classroom and also outside. In the lecture method, students become mere passive learners.

According to Binning & Binning the lecture method may however be used to give background to a large topic or to give summaries and make review

2. Text book method where the students read a few lines in a chapter of the text book in a particular page, followed by other students reading the rest of it. The teacher at the end makes precise the whole lesson in a systematic way by summarizing in points.

But the text book is method is unable to develop the deep understanding power of the concepts because the teacher as well as the pupils believes that the subjects matter in the text book is sufficient. It does not consider the dynamic aspects of the economics as a subject. It also develops the habit of cramming among the students. In fact it is not a method, but useful means, it only helps to supplement the work of teacher.

The latest texts books should be used by the teaches to provide recent data of related topics. Pupils should be encouraged to read more than one book and also some sort of reference material from different newspapers, magazines, periodicals, internet, T.V. etc

3. Another popular method is Project method. Project method as John Dewy, the pro-pounder of the method puts it – "It puts the child in the zeal situation of learning. It assigns spontaneous, purposeful and socialized activities to the child. An ideal project is a significant unit of activity having educational value and aimed at one or more definite goals of understanding ,involves investigation & solution of the problems & frequently the use and manipulation of physical materials planned and carried to the completion by the pupils and teachers in a natural like manner (Good, 1945, p.314)

The project method is generally associated with W.H. Kilpatrick's advocacy of purposeful activity, problem solving and the needs and interest of the individual child in action, his learning and conduct. Its intellectual origins were associated with the child's study and scientific movements and educational progressive stress on the development of the whole person, the relevance of the curriculum to the social existence & need for flexibility in the schools. Project method provides practical knowledge to the students to apply in their lives but it involves more time & is difficult to implement within rigid time schedule.

4. Problem Solving method: It is defined by Good as a method of instruction where learning is simulated by the creation of challenging situation that demands solutions. It is a procedure through which we attack a specific situation in a scientific manner. To make a difference from the project method, the problem solving method is characterized by mental activity, critical thinking and therefore, directly applicable to the secondary school level of teaching. But it is time consuming and cannot be much applicable to the lower classes, as the students there are not so mature.

5. Discussion method: Discussion is a process to examine in details or disputation. It usually involves 6 to 10 persons .Group members have reciprocal influence over one another. Unlike other method, the learning of each student in a discussion is affected by the behavior of the other students in the group. It motivates the students to engage in further enquiry and provide the feedback on the student's progress. It is a flexible method of teaching and helps to achieve broad instructional objectives of subject mastery, problem solving, acquisition of communication skills, attitude change, etc. But the students may steer the discussion in undesired direction, leading to lack of control, pace & flow of instruction. Also at times, the classes are too large to accommodate it.

C. SOWING THE SEEDS OF CREATIVITY:

Anatole Franc says – "The whole art of teaching is only the art of awakening natural curiosity of young minds for the purpose of satisfying it afterwards". The springs of natural curiosity - the base for creativity can be opened out by planned creative teaching. The present day teachings in the schools are actually making students more and more imitative rather than creative. Drawing out the unexpected creativity in every student is one of the prime objectives of education. Every child in the class need not be creatively genius by birth, but certain degree of creative interest can be fostered by thoughtful effort and desire of the teachers. The present system of education, which follows a rigid course of prescribed syllabus does not provide ample opportunities for developing thinking skills in the school children. We have to support a system of education which at every stage provides freedom for creative thinking. Just the bookish teaching and learning, narrow outlook of the teachers and rigid method of teaching has always been one set of major obstacles that has been suppressing the creative interest in students. In most of the students, when their creative thoughts do not get encouragement & proper channels of expression, it is forced to remain dormant within them.

Our teaching approach should transform students into good thinker sand active lifelong learn-

ers. Teachers should adopt different forms of creative teaching with learner centered pedagogical teaching method replacing the less productive, traditional methods. The pre-requisite of this type of teaching is prior understanding of objectives and proper planning. If teachers are able to create a creativity fostering atmosphere, the rest will be done by the atmosphere itself. Even the wingless leaves can fly like birds when wind blows.

The creative and imaginative qualities can be greatly enhanced by incorporating selected activities in to the class room, by breaking from the usual thoughts and opening the minds for more unconventional ideas, broadening the chance of creativity. Chlidren should be encouraged to think differently, deviating from the normal ways of thinking. With good inputs into the brain, in a relaxed state should be the right means to activate the brain to try some unusual outputs/ideas.

Teachers should try to set more open ended tasks that make them to find out divergent outcomes and help student to develop skills in self expression, which acts as a foundation to convert the creative thoughts into practical pieces.

METHODS OF FOSTERING CREATIVITY:

- Teachers should encourage student to read critically, analytically and creatively e.g. analysis of the Food security bill
- During some teaching situations, avoid saying everything about a topic and make them to think e.g. Law of demand, (leaving out exceptions of law of demand for the students to imagine and refute with the Law.)
- Ask them those questions that elicit original responses from them. Treat their unusual questions with due considerations. Open ended questions bring about range of responses, sometimes highlighting originality.
- Give them assignments that are more challenging and discourage rote memorization. – Present the budget of your family or the expenditure planned for the Farewell of outgoing batch in the form of a pie chart .
- Presentation on contemporary topics,with the provision of interjections.
- Role play of a situation given on the spot, say creating an advertisement.
- Teachers should appreciate creative behavior of the students in front of others. Reward them in whatever possible way – treat these as a part of homework assignment grades etc.
- Encourage them to take part in the activities of clubs organized in the school e.g. as a part of Eco club activity - awareness on the strategies for sustatinable development ,excursion trips to windmills, solar power plants can be undertaken.
- Encourage them to use rough books. It is said to encourage creativity. It becomes easy for them to draft and redraft their original ideas and work out creative thoughts.

D. ACTION RESEARCH:

I. Area of problem: How to nurture creativity in Economics.

II. Pin Pointed Problems: To provide avenues for broad and open approaches for study in economics.

III. Probable causes:

17. Limiting the scope of study with fixed curriculum.
18. Boundaries of a rigid timetable to be followed.
19. Non acceptance of ideas deviating from the conventional lines.
20. Lack of resource material in the form of books, magazines, net access.
21. Lack of direction & motivation to the students while using the library period to research and explore on the contemporary topics.
22. Not enough rewards in the terms of additional points in the assessment grades.
23. Parental pressure to excel-"which necessarily means maximum marks" where deviating from the "ultimate goal" is considered as wastage of time.
24. Lack of intelligence.
25. Lack of general interest.
26. Uncompetitive peer group.
27. Fear of being ridiculed and made fun off or being snubbed by the teacher

iv. Action Hypothesis:

If the "identified students" are provided extra special slots , given enough encouragement & support" in the form of acceptance and the required resource material, also an incentive in their grades, the students exhibit immense creative skills and come out with ideas that the subject of economics essentially needs –"Creative solutions to the problems of any Economy" and the ideas for progressive policy making.

v. Base Line data for identification of students:

1. History of the students.
2. Past academic records,
3. Area of their interest & disinterest.
4. Hobbies.
5. Knowledge of the family environment.
6. Information regarding economical, cultural and physical situations.

vi. Tools for collecting above data:

1. Observations.
2. Study
3. Questionnaire
4. Personal interview.

S.No	Month & Week	Activities to be undertaken	Method	Expected Tools
1.	3rd Week jan'14	To know about the interest, aptitude &attitudes of the	Self effort and cooperation of companions	Personal interview.
2.	4th Week jan' 14	To decide what creative encouraging tasks will be assigned	Self thinking, cooperation of associates, searching the sources available, consultation	Net searching consultation
3.	5th Week Jan' 14	To fix special slots for conduct of: -Areas of Special incentives -Home assignment (Pie chart in Family budget)	Self efforts	Content from various **Resources** - Groups of 5 to 6 students. - Presentation
4.	2nd Week Feb' 14	Role Play/ dramatization		Accessories, scripts etc.

viii. EVALUATION OF THE RESULT OF ACTION:

On the basis of the activities performed according to the design of the action research, it revealed that before conducting the action - out of % students did not take active participation exhibiting creative interest. Only or % pupils showed participation, rest behaved as passive learners. In only two months, the no of pupils, who actively participated and thus got rewarded and showed improvement in the class conduct raised up to %

E. TARGET GROUP

Albert Einstein said – "I have no special gifts, I am only passionately curious".

Curiosity along with imagination and creative thinking are influential factors that can cause the flow of creative ideas."

The identification of creative students – the target group of my work is an exceptional child in general is a gifted child in particular who cannot be benefited from regular classroom teaching programmes.

An exceptional child requires modification of school practices and need special attention to develop to his maximum capacity. These talented students can be identified by using various methods as discussed.

They learn very conveniently, have higher intelligence, believe in more understanding and less cramming and have original thinking. They are those whose potential, intellectual powers and abilities are at such high levels in both productive and evaluative thinking that it can be reasonably assumed that they could be future problem solvers, innovators and evaluators of the country if adequate educational experience is provided to them.

F. CONLUDE……

Consequently, it can be said that if adequate steps like brain storming, role play, dramatization,etc are undertaken, enough support and encouragement given to the students, their creativity can definitely be fostered. There is a definite possibility of spark of innovation.

"When Alexander the Great visited Diogenes and asked whether he could do anything for the famed teacher, Diogenes replied: "Only Stand out of my light. Perhaps someday we shall know how to heighten creativity. Until then, one of the best things one can do for creative men and women is to stand out of their light."

3.14 ECONOMICS CURRICULUM IN STATES: A COMPARATIVE STUDY

ABSTRACT

The current study is an analysis of the economics curriculum followed in different states of India which is implemented by the various educational boards.In the study the focus is mainly on the Economics curriculum that is followed at the higher secondary level. As there is a divergence across the boards regarding the framing of the economics curriculum the current study will make an analysis of the similarities and dissimilarities that are prevalent in the curriculum . The study will focus on the structure of Indian Education, Curriculum followed by the different educational boards and the requirement of the changes of our present Economics curriculum which can meet the contemporary challenges facing the nation.

INTRODUCTION

During the past few years, an extensive research literature has developed on the subject commonly called economics education all over the world. It finds a place in the school curriculum all over the world. In United Kingdom it has been one of elective subjects at the school leaving level since early 1990s.Three objectives were identified for teaching of economics and examination at A level which are i) for students who stop with school education, it should be useful in future walk of life, ii)for students who take up other courses in the universities and end up working in economic institutions, commerce and banking sector iii)for students who intend to take up economics for higher studies, it should provide a solid base.

In the USA, economics has been taught in schools since 1900. The main objective of teaching economics in schools in USA has been to impart economic literacy in order to enable students to apply these concepts in real life situation in future.

In Australia,schools started teaching economics since the second half of 1900.The economics curriculum for the middle school in Australia is framed with the expected learning outcomes i)able to collect, arrange and interpret economic data ii)able to understand the need for public policy to manage the economy.

Thus the content of economics courses in Australian school is no different from those being taught in the USA and UK.

In India, when the Economics Departments were organised for post-graduate teaching which basically meant the second and third decades of nineteenth century, we followed the example set by Britain, which, by that time, had moved over from 'political economy' to 'economics'. Even then the degree of specialisation was low as the subject was taught in close conjunction with political philosophy and/or history. All these have greatly altered in recent years, especially during the sixties and seventies. Economics is now acknowledged as a sovereign discipline

(Chakravarty 1986). In case of economics education in schools, the discipline of economics is introduced to the learners in class IX, within the composite social science course. At higher secondary / intermediate stage economics is intimated as a separate elective subject under social science streams.

STRUCTURE OF INDIAN EDUCATION

In India education is provided by the public as well as the private sector with control and funding coming from the three levels: central,state and local. Education in India falls under the control of both the Union and State government. The articles of Indian constitution provide education as a fundamental right. Over the years more particularly with the implementation of the recommendation of the Education Commission(1964-66) the time period taken by a student to complete school and undergraduate courses has become uniform.

a) Elementary Education.(6-14 years)

b) Secondary and Senior Secondary Education.(14-18 years)

c) Higher Education.(18-24 onwards).

EDUCATIONAL POLICY IN INDIA:

Planning of Indian Education is made by the Central Ministry of Human Resource Development which includes the Department of Elementary Education and Literacy and Department of Secondary and Higher Education. The ministry is guided by the Central Advisory Board of Education which is the national legal advisory body. The NCERT(1961) defines the National Curriculum Framework for classes I-XII. It functions as a resource centre in the field of school development and teacher education. Under the national constitution, education was a state matter till 1976. In 1976 constitution was amended to include education on the concurrent list. In 1986 India has an uniform National Policy on Education. National Policy on Education modified in 1992, gave stress on substantial improvement in Education. The Indian government is aiming to provide high quality senior secondary education to all Indian upto the age of 18 by 2020. A uniform structure of school education (10+2) system has been adopted by all the states and Union Territory of India following the National Policy on Education 1986.

EDUCATIONAL BOARDS IN INDIA

India has primarily three boards of education ICSE,CBSE, State Boards. Apart from these there are examinations conducted by International BaccalaureateOrganisation,National Institute of Open schooling and Cambridge International Examinations .

A brief study of the following boards of education are done below:

CENTRAL BOARD OF SECONDARY EDUCATION

It is a renowned educational board which comes under the Union Government of India. The eminent board was formed in 1952 and associated with the board of high school and Intermediate Education, Rajputana, ajmer,Gwalior,Merwara and central India were included in the administrative territory of this board along with the other places including Bhopal, Ajmer. From 1952, it has been providing standard education and robust learning environment to all. CBSE is a prestigious board of education and it provides affiliation to public and private schools. Apart from this, all Jawahar Navodya Vidyalayas and Kendriya Vidyalayas are affiliated to this board. In 1962, finally the board was reconstituted. The jurisdiction of the board is extensive and stretches beyond the national geographical boundaries.As aresult of the reconstitution the erstwhile Delhi Board of secondary Education was merged with the central board and all the educational institutions recognized by the Delhi Board became a part of the Central Board. Subsequently all the schools located in the Union Terri-

tories of Chattishgarh, Andaman and Nicobar Island, Arunachal Pradesh, State Of Sikkim, and now Jarkand, Uttaranchal have got affiliation of the board.From 309 schools in 1961 the board today has 8279 schools on 31/03/2007 including 141 schools in 21 countries.

CBSE was set up to achieve certain interlinked objectives:

- To prescribe conditions of examinations and conduct public examinations at the end of class X and XII.
- To fulfill the educational requirement of those students whose parents are employed in transferable jobs.
- To prescribe and update the course of instruction of examinations.
- To affiliate institution for the purpose of examination and raise the academic standard of the country.
- Prime focus of the board is on
- Innovations in teaching learning methods by devising student
- Friendly and student centered paradigms.
- Reforms in examination and evaluation practices.
- Skill learning by adding job oriented and job linked inputs.
- Regularly updating the pedagogical skills of the teachers and administrators by conducting in service training programmes, workshops etc.

INDIAN SCHOOL CERTIFICATE EXAMINATION

In 1952, an All India Certificate Examinations Conference was held under the Chairmanship of Maulana Abul Kalam Azad, Minister of Education. The main purpose of the conference was to consider the replacement of the overseas Cambridge School Certificate Examination by an All India Examination.This set the agenda for the establishment of the Council.

In October 1956 at the meeting of the Inter State Board For Anglo- Indian Education, a proposal was adopted for the setting up of an Indian Council to administer the University of Cambridge, Local Examinations in India and to advise the Syndicate on the best way to adapt its examination to the needs of the country. The inaugural meeting of the council was held on 3rd, November,1958. In December 1967, the council was registered as a society under the Societies Registration Act,1860. In 1973, The Council was listed in the Delhi School education Act 1973, as a body conducting “public” examinations.

The Council is committed to serving the nation’s children , through high quality educational endeavours, empowering them to contribute towards a humane, just and pluralistic society, promoting introspective living, by creating exiciting learning opportunities, with a commitment to excellence.

The Ethos of the council

a) Trust and fair play

b) Minimum monitoring

c) Allowing schools to evolve own niche

d) Catering to the needs of the children

e) Giving freedom to experiment with new ideas and practices.

f) Schools to motivate pupils towards the cultivation:

Excellence-The Indian and global experience

As a leader in the provision of world wide educational endeavours, the Council's vast experience and wisdom is called upon in many forums such as the CBSE, NCERT, State education Departments, the Ministry for Human Resource Development and the Planning Commission.

The Council conducts the Indian School Certificate Examination,through the medium of English, designed in accordance with the recommendations of the New Education Policy 1986, after a two year course of studies beyond the Indian School Certificate Examination (year 10) or its equivalent examination.

MEANING OF CURRICULUM:

The term curriculum has been derived from a Latin Word " Currere" which means a race course or a runway on which one runs to reach a goal Accordingly a curriculum is the instructional and the educative programme by following which the pupils achieve their goals,ideals and aspirations of life. It is curriculum through which the general aims of a school education receive concrete expression.

The traditional curriculum was subject centered while the modern curriculum is child and life centered.

NATIONAL CURRICULUM

NCERT formulated the first Curriculum Framework in 1975 as a recommendation to individual states. It reviews the curriculum every five years on the basis of consultation with the school sector. It published a New National Curriculum Framework in 2005. It has gradually been changing the curriculum from traditional information provision to be more learner oriented and competency based. It points out the need for plurality and flexibility within education while maintaining the standards of education in order to cover a variety of children. The framework recommends that learning shifts away from rote methods . The National curriculum Framework 2005 also proposes changes within the examination system(examination for class X and XII) allowing reasoning and creative abilities to replace memorization.

All the three major educational boards in India (namely CBSE,ICSE and the State Boards) are guided by the NCF 2005 while framing their curriculum.

The Features of National Curriculum Framework are as Follows:

a. It is driven by four guiding principles

   i. Connecting knowledge to life outside the school.

   ii. Ensuring that learning is shifted away from rote methods.

   iii. Enriching the curriculum to provide for overall development of children rather than remaining textbook centric.

   iv. Making examinations more flexible and integrated with classroom life.

b. NCF 2005 bases itself on the constitutional vision of India as a secular,egalitarian and plurastic society founded on the values of social justice and equality.

c. NCF emphasises that the syllabi burden be reduced and it includes all left out groups.

d. In teaching, an interactive approach rather than instructional one is more desirable.

e. Critical pedagogy is emphasized to enable children to look at social issues from different perspectives and how such issues are connected to their lives.

f. The NCF points to the fact the constitutional value of equality can be upheld if teachers are trained to treat all children equally.

STUDY OF ECONOMICS CURRICULUM OF DIFFERENT EDUCATIONAL BOARDS:

Central Board of Secondary Education

- The core values of CBSE curriculum draw its strength by keeping pace with the 21st century and the global trends of educational transformation as well as keeping in mind that India is an independent nation with a rich heritage, extraordinarily complex cultural diversity and commitment to democratic values and general well being.
- One of the basic aims of education is to nurture in the learner a sound mind and strong values driven character.

The objectives of CBSE economics curriculum are as follows:

Keeping the above objectives in mind CBSE bifurcates the Class XI syllabus in two parts. Part A concentrates on Statistics for Economics which enables the students to get acquainted with basic economic tools. Students are expected to have a concrete idea regarding collection, organization and presentation of data which will help them in analyzing data.Part B focuses on development policies and experience of India during the pre and post reform period.These part also focuses on the current challenges of the Indian Economy like poverty, unemployment, rural development etc. A chapter is also attributed to the environmental problems and the need for sustainable development. A comparative development experiences of India, Pakistan,China is included in the syllabus with an objective to enable students assess strategies these countries have adopted to reach their present stage of development.

Class XII syllabus emphasizes on the theoretical aspects of economics .

International Baccalaureate Organisation

The IB Diploma Programme economics higher level course aims to provide students with a core knowledge of economics, encourage critical thinking , promote an idea of internationalism in Economics and encourage the development of independent learning ability of the students. The course is designed to

- develop the capacity to identify,analyse critically and evaluate theories, concepts and arguments about the nature and activities of the individual and society.
- Enable students to collect,describe and analyse data ,test hypothesis and interpret complex data.

- Enable the students to distinguish between positive and normative economics.
- Enable students to recognize their own tendencies for bias.
- Enable the development of inter cultural understanding.
- Enable the development of research skills.

The IB syllabi contain two levels- higher level and standard level. The high level includes a few topics in depth and higher level. The different topics included in the higher level are Microeconomics- Markets, Elasticities, Theory of firm, Market failure. In MacroEconomics the topics included are Measuring National Income, Introduction to development,Unemployment and inflation etc. IB program also includes a study of international economics with stress on the study of World Trade Organisation, Balance of payments, Exchange rates, difference between free trade and protectionism etc.In development economics are taught sources of economic growth, growth and development strategies and their evaluation etc.

The assessments aim to test the student's knowledge and understanding of key concepts through various activities. Students success in the economics higher level course is measured by combining their grades on external and internal assessment.The internal assessment measures students ability to produce a portfolio of four commentaries each 650 to 750 words based on a newspaper extract that links between economic theory to a real world situation. The economics course encourages students to develop international perspectives, fosters a concern for global issues, and raises students' awareness of their own responsibilities at a local, national and international level. The course also seeks to develop values and attitudes that will enable students to achieve a degree of personal commitment in trying to resolve these issues, appreciating our shared responsibility as citizens of an increasingly interdependent world.

COUNCIL OF INDIAN SCHOOL CERTIFICATE EXAMINATION

The objectives of economics curriculum followed by the Council of Indian School Certificate examination are as follows:

- To enable candidates to acquire knowledge(information) and develop understanding of facts,terms, concepts, conventions,trends,principles,generalizations,assumptions,hypotheseis,problems ,processes in Economics.
- To acquaint candidates with tools of economic analysis.
- To develop an understanding of important economic problems.
- To enable candidates to compare their own economic world with that of the other areas of the world.
- To develop an understanding of the role of institutions in the functioning of an economy

The syllabus is intended to reflect a study of the theory of Economics with special reference to the Indian Economy. The curriculum focuses on planning and economic development in India, structural changes in the Indian Economy after liberalization. Current challenges of the Indian economy like poverty,unemployment are also covered. As environmental problems are a major concern for the entire world students are also acquainted with the concept of sustainable development and develop an appreciation to sustain at least what exists for generations to come. Statistics part provides basic lessons on collection,organization,presentation of data and statistical measures like Central Tenden-

cy, Dispersion,Correlation,Index Number.Apart from the above topics the candidates will be expected to complete two projects from any topic covered in Theory. Marks allotted for each topic is 10.

Class XII curriculum covers the basic microeconomic theory and macroecomic theory.Topics on International Trade and Public Finance are also covered briefly.Twenty marks are allotted to two projects in Class XII.

Apart from the three above mentioned boards Higher Secondary examination is conducted by the different state boards in India.NCERT plays important role in preparing National Curriculum Framework which form the guiding document in preparing the model syllabi and textbooks for various stages of school education. The respective state boards are guided by model curricular materials to frame their own syllabi. A brief study of the economics curriculum followed by some of the state boards in India are as follows:

Tamilnadu Board of Higher Secondary

The economics curriculum for standard XI and XII is designed for the students to understand current economics issues at national and international level and the basic economic theory to understand and analyse and discuss the economic problems. It is for smooth transition from school to college for those interested to specialize in economics at the undergraduate level or for students for commerce and management who want to study economics as allied courses. The syllabus is formulated keeping in view the syllabus followed by other boards.

The economics syllabus for standard XI is designed such that the students begin with an understanding of Indian economy. Section A on basic statistical tools enables students to interpret economics facts and figures, graphs and charts used in discussions to represent the various facts of the Indian economy. The statistics section provides basic tools and methods to understand the economic data, data collection, presentation of data and simple statistical measures such as averages, dispersion and relationship among economic factors frequently used in economics. A section on Index Number is included for the students to know how price indices and adjusted inflation are estimated. Objective is also to help students familiarize with use of computer software to generate charts, graphs and compute simpler descriptive statistics. Section B of the Class XI syllabus deals with Indian Economic Development. Objective is to enable students understand alternative mechanisms to address the basis economic problems. The students are exposed to the economic problems faced by the Indian Economy, understand the background for economic reforms, economic crisis of 1991 and structural adjustment programmes.Role of agriculture and industry in Indian economy is also given stress. As preservation of environment is of utmost importance students are also made to understand the concept of sustainable development. A comparative study of Indian economy with the economic development of the South East Asian countries and the state economy is also included in the curriculum. Curriculum of class XII gives stress on basic micro and macro economic theory. In addition to that Quantitative Methods in Economics are also included to enable the students appreciate and apply mathematics to economics.

Maharashtra Board of Higher Secondary Education

The framework of the curriculum is based on National Economic Policy to explain the students the nature of Indian Economy. Problems of population explosion, Poverty, Unemployment, measures to remove these problems etc are included in the curriculum. Under these curriculum students are introduced to the basic concepts of statistics. Twenty marks are allotted for project work both in

class XI and XII.

To make the students understand the above problems the subject should be explained at the Micro and Macro level.

General objectives of the curriculum are:

- To make the students understand the changes in the Indian Economy and problems faced by the economy.
- To make them inquisitive about the infrastructural facilities in Indian Economy.
- To explain to them the principles of Micro and macro Economics.
- To make students aware of concepts like Money, Banking , National Income, Public Budget etc.
- To create awareness among the students regarding skills required for skilled entrepreneur.

West Bengal Board of Higher Secondary Education

The economics curriculum of Class XI is divided into two groups : In Group A Section 1 deals with basic economic concepts.It starts with the student's prevailing understanding of economics by discussing with what students already know about economics and proceeds to introduce the concept of opportunity cost for making choices by the consumers and producers to confront scarcity. It also emphasizes about the different types of economy and basic microeconomic concepts like utility,demand,supply etc. Section 2 focusses on the discussion about the macroeconomic variables like National Income, Consumption, Savings and investment , Money and Banking etc.Section 3 discusses about forms of business organization whereas Section 4 and 5 focusses on International Trade and factor market respectively. Group B deals with basic concepts of statistics and Indain Economy with special reference with special reference to West Bengal economy.Twenty marks are allotted for project work one based on field work and other based on secondary data. Class XII curriculum is divided in two parts: Part I deals with Microeconomic theory whereas Part II Deals with Macroeconomic Theory .Comparative Analysis of economics curriculum followed by different boards in India

There are 33 recognised educational boards in India, including the Central Board of Secondary Education (CBSE), Council for the Indian School Certificate Examinations(CISCE), the various State Educational Boards like Board of High School and International Baccalaureate Organisation The schools affiliated with CBSE follow the model curricular materials prescribed by NCERT. These model curricular materials are also of much help to the state curricular agencies such as State Council of Educational Research and Training (SCERT) in developing the syllabi and text book in different ways. The Economics Text Books for class XI by the National Council For Educational Research and Training,New Delhi give a detailed fact and analysis of Indian Economy. A comparison between CBSE,CISCE and IB reveals the fact that CBSE and CISCE during the first year introduce the students to some basic economic concepts and mainly stresses upon the problems of India Economy. During the second year students get acquainted with the theoretical aspects of economics (micro and macro economic theory) . The question paper of ISC examination comprises of two parts : Part I(20 marks) consist of compulsory short question and Part II(80 marks) comprises of five questions each carrying 12 marks. Thus on the basis of question paper pattern of ISC it can be observed that less emphasis is given on the development of analytical skills of the students. The question paper of economics comprises of higher order thinking skills which encourages the analytical skills of the

students. CBSE has also introduced Open Text Book Assessment for students of class XI .While ISC council have stressed the need for project work in both Class XI and XII, CBSE have only considered economics project for class XI. In comparison to CBSE and ISC, students studying in IB schools start learning the theoretical topics from first year onwards. A careful examination of course objectives show that a IB syllabus contains a separate section with the title " Internationalism in Economics course" whereas both CBSE and ICSE curriculum include only a chapter on International Trade where the students get themselves acquainted with topics on Balance of Payment and Foreign Exchange Rate determination. A student appearing for final year examination in IB can opt for any one of the economics syllabi-higher level and standard level whereas students studying under ISC and CBSE give their board examination only on the class XII syllabus. IB students are assessed both on the basis of written examination and internal assessment. Internal assessments are on the basis of portfolilio,assignment etc. 20 marks are allotted for internal assessment and the remaining 80 marks are allotted for external assessment. After making a comparative study of ISC,CBSE and IB curriculum it can be felt that the curriculum followed by these agencies particularly the CBSE is trendsetter for other boards in India.However the number of schools affiliated to these boards in India is very small – roughly about one-tenth of total number of higher secondary schools in the country. The rest are affiliated to state level examination boards. In the following section, the syllabi used in state boards are examined.

Economics Syllabi in states

NCERT plays important role in preparing National Curriculum Frameworks which form the guiding document in preparing the syllabus for the respective boards in India.

The contents of syllabi is different for the different state boards in India which are discussed below in the form of a table After conducting a case study on the economics curriculum of the different states of India it is observed that the curriculum followed is divergent across the different state boards.The syllabus followed reveal the following patterns:

a) Curriculum based on NCERT syllabi where four courses are taught over a period of two years. This is followed in states like Jammu and Kashmir,Himachal Pradesh,Punjab, Nagaland, Mizoram,Goa,Kerala, Delhi and Haryana.

b) Curriculum where two courses are taught-one per year and course contents are mixed. Example AndraPradesh.

c) Topics from four broad areas(Indian Economy,Statistics, Microeconomics and Macroeconomics) are mixed and taught each year. Example: Rajasthan and MadhyaPradesh. Curriculum followed by NCERT divides the entire economics syllabus over two years in four parts:

i) Indian Economic Development.

ii) Statistics for Economics. These two courses are taught during the first year.

iii) Micro Economics.

iv) Macroeconomics

These are taught during the second year and students are evaluated on these two courses during the Board Examination.

It has been observed that in some states theoretical topics and economic issues are mixed up

and taught whereas in other states they are taught separately in Class XI and XII.In some states apart from the regular topics few topics related to the state economy are included. Example: TamilNadu, West Bengal, Assam, Goa, Rajasthan.Some state syllabi do not provide any details of course objectives. For example, it is stated in MadhyaPradesh syllabi document that the main aim of the syllabus is to develop "student's competence for higher studies in colleges and universities. Hence, basic knowledge of the subject, related to theory and applied aspects, should be imparted to the students". Syllabus document of both Tamil Nadu and Madhya Pradesh show the teaching the course content as the objectives of teaching economics. The expected specific outcome of teaching the topic, "economic growth and development, is to "To make the students understand the concepts of economic growth and development." This lead to difficulty for economics teachers in their classroom practices. They have to invent course and topic-wise instructional objectives. This could be one of the important reasons for their dependence on particular textbooks.In some states the curriculum appears to impose unnecessary burden on the students. For example Maharashtra Board include tenth five year plan whereas in AndraPradesh State Board ninth five year plan is being taught which is not required. This develops the habit of rote learning among the students. In some state Boards like Tamil Nadu and West Bengal economics syllabi is unnecessarily lengthy as it comprises of a large number of topics to be covered within a period of two years.

Conclusion:

Economic aspects plays a vital role in our everyday life.As the economy of a nation changes so the socio-economic life of its citizen also transforms. At this point it becomes necessary to educate the children in such a manner so that they can easily flourish in this fast moving world of cut-throat competition. While doing so, it is very important to enrich them with analytical skills to observe and understand the socioeconomic realities they face around. Therefore framing of a proper economics curriculum is of utmost importance.

- Curriculum has to be productive which will enable the students to carry their knowledge garnered at the school level to the next level of education.
- Curriculum should be interesting and innovative. If the student is not interested in a subject like economics the blame must largely fall on the curriculum developers who bears the responsibility of framing and modifying the curriculum from time to time.The concept of Open Text Book Assessment which has been introduced by CBSE should be followed by other state boards.These are expected to enhance the analytical mindset of the students.The idea of introducing case studies taken from various newspaper extracts in the curriculum can be adopted which are expected to improve the research aptitude of the students.
- Curriculum should be stress free. Outdated topics which are not relevant with respect to the present scenario should be removed in order to remove the unnecessary burden on the students.
- Real life projects on various projects on various related topics can be brought about.
- More global facts and findings should be incorporated as in an liberalized environment entire globe is like a village and far off happenings have some cascading impact on the domestic economy.

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3.15 ECONOMICS– "BIG PICTURE" WITH INNOVATIVE APPROACH

Abstract

Economics examines the social aspects of economies. It studies the interaction of the decision making of households, businesses and the whole of society and includes things such as how we respond to incentives (the things that influence decision-making) and how our conflicting choices are reconciled. Economics contributes to our understanding of policy design and business strategy. Economics provides the 'big picture'. This "big picture" is somewhat missing in present curricula of senior secondary level Economics. This paper will discuss the issues about the present curriculum of all conventional and non-conventional boards. The paper also discuss about the innovative and big picture thinking approach for the curriculum design to create interest among the students and learners. This paper also put emphasis on "instructional effectiveness" i.e. teacher and teaching

Effectiveness in Economics at Secondary and senior secondary level courses.

Introduction

This paper is directed towards a different group of economists – those economists who consider themselves teachers first, but who maintain a research agenda by doing research related to economics education, and those economists who read and contribute to economics education journals. This paper also includes the practices and pedagogy of Secondary and Senior Secondary teachers who are regular teachers in conventional schools and are facilitators in ODL (Open and Distance learning system.

The paper is based on my personal observations at, and discussions with attendees of, numerous teaching conferences, which, because I have an economics textbook and a strong interest in teaching economics, I attend regularly. At these conferences much of the research presented is on delivery rather than content, and various 'new approaches' to teaching, such as active learning, the new paradigm of teaching and cooperative learning, are put forward and discussed. While I agree with much of what is said in these conferences, I cannot help but come away from them with a word of caution, and the purpose of this article is to explain the reasoning behind it. Yes about my concern for –"Big Picture" with innovative approach.

The word of caution is to remind those of us concerned with teaching not to fall into what might be called the 'education school dilemma'. Ultimately content, not delivery, determines whether one is or is not a good teacher. No matter how well you deliver it, if you do not have something to say, you are not going to be a good teacher. In thinking about this issue, I remember a quotation of Joseph Epstein's that Joseph Lowman included at the beginning of his essay 'What constitutes masterful teaching'. It was 'What all the great teachers appear to have in common is love of their subject, an obvious satisfaction in arousing this love in their students, and an ability to convince them that what they are being taught is deadly serious' . When I think back to those teachers with great delivery and lousy content and those with great content and lousy delivery, it is the ones with content whom I remember – the ones who convinced me that what they were doing was important. Academicians having horrendous delivery, but they had great content, and changed my life and of course they will change yours also if they have solid content with great content.

Where I think the US educational system has gone off the deep end with delivery is in high school teacher education. There, until a recent backlash, the educational focus was so strongly focused on technology and delivery that it lost contact with content. In some education schools, you did not need to major in math to teach math, but you had to study a whole variety of teaching methods courses. And in the United States you do not need to have taken economics in college to teach economics, even supposedly college-level AP economics, although you do need to have taken a combination of teaching methods courses.

I am a consumer, not a producer, of the literature on educational technology and delivery, which encompasses much of the research on teaching methods. My main area of research in economics is on how we translate the latest advancements in economics thinking into digestible discussions and models that students can understand. Thus, I spend much of my time thinking about what I call 'content' issues of teaching.

The world has changed considerably in recent times, and it is essential that education not only keeps up with change but anticipates the future as far as possible. If India's children and young people are to gain the knowledge, skills and attributes needed for life in the 21st century we need a forward-looking, coherent curriculum that will inspire them to achieve at the highest levels.

The new paradigm in teaching

To give you an idea of what I mean by an over-focus on delivery, let me consider Table 1, which is adapted from an article on the 'new paradigm of teaching'.

Table 1 A common sense approach to teaching

	Old paradigm	Layman approach	New Modified paradigm
Knowledge	Transferred from faculty to students	Faculty leads student into a previous constructed knowledge while pointing out that it is not necessarily truth; emphasises critical thinking	Jointly constructed by students and faculty
Students	Passive vessel to be filled by faculty's knowledge	Active vessel to be filled by faculty's knowledge, but still a vessel to be filled	Active constructor, discoverer, transformer of knowledge
Mode of learning	Memorising	A combination of learning terminology and relating	Relating
Faculty purpose	Classify and sort students	Develop student's competencies and talents; inspire, force, connive ways to get them to learn	Develop students' competencies and talents

Student goals	Students strive to complete requirements, achieve certification	Students strive to complete requirements and achieve within a discipline certification and maybe become interested in broader learning	Students strive to focus on continual lifelong learning within a broader system
Relationships	Impersonal relationship among students and between faculty and students	Respect by student for faculty; personal relationship among students and between faculty and students within confines of the class	Personal transactions among students and between faculty and students
Context	Competitive/individualist	Combination of cooperation and competition	Cooperative learning in classroom and cooperative teams among faculty
Climate	Conformity/cultural uniformity	Sufficient conformity to make the class work	Diversity and personal esteem/ cultural diversity and commonality
Power	Faculty holds and exercises power, authority and control	Faculty has the authority and power, but uses it with restraint and understanding	Students are empowered; power is shared among students and between students and faculty
Assessment	Norm-referenced (i.e. graded 'on the curve') Typically multiple-choice items; students' rating of instruction at end of course	Norm-referenced grades, with clearly defined requirements; teaching environment determines the type of exam used	Criterion-referenced; typically performances and portfolios; continual assessment of instructions
Ways of knowing	Logico-scientific	Uses the logico-scientific narrative, with acknowledgement of its limitations	Narrative
Epistemology	Reductionist; facts and memorisation	Abductive, combination of inductive and deductive	Constructivist; inquiry and intervention
Technology use	Drill and practice; textbook substitute; chalk and talk substitute	Class size and available technology determine the use of technology	Problem solving, communication, collaboration, information access, expression
Teaching	Any expert can teach assumption	Content comes first; teaching comes second. An expert who cares can convey that to students	Teaching is complex and requires considerable training

Mode of learning

Good teaching has more to do with motivating than it does with relating. Much of the problem of teaching economics has to do with getting our students to exercise their mind, which, for most Students, needs enormous calisthenics, just like my body does. Some things just need to be done over and over again to learn, and others need to be memorised.

For example, if you want to teach your students about "Market and its forms", take them to market or give them INR 200 and tell them to go and do some business for one day. Here they struggle in the market and learn about real life market and its complexities.

Faculty purpose and student goals…….Going beyond books…….a Big Picture

On these points I am closer to the new paradigm, but I do not know many Academicians who are not. None of us likes classifying and sorting students. That said, I think there are many types of students, and how one teaches has to fit the student body one has. We need to judge our teaching success by the value we have added, not by how much the student knows at the end of the course.

My perception, based on 12 years of teaching and discussions with both students and faculty, is that most students are in college not because they are deeply interested in gaining knowledge, but because they are interested in getting a sheet of paper that will allow them to do other things. And in many ways the students are right; having the college degree credential is more important to their success than what they know, and if holding that on top of them can motivate them to work harder,

Much of the success in teaching involves motivation – motivating students to learn. The first thing I say when I go into my class is: I am not going to teach you anything, but I am going to do everything I can to get you to learn. And I structure my course to do that. To get students to read the chapter before the class, I have 5-minute quizzes in which I see if they have read the chapter. Before I give the quiz I allow questions, and often in those questions most of the issues I would have raised in my class come up. But the issues come up as a dialogue with students, not with me up there lecturing.

To get students to focus on the discussion, I do not let students take notes. I tell them to put down the pen – that what I say is too important for them to be not focusing on it entirely. And when something is being covered that will be on the test, I tell them that now it's time to pick up the pen and put this down as a short note marked: 'important –going to be on the exam'. Notes, when you are teaching from a textbook, are redundant. Read the executive summary at the end of the chapter, or the margin notes. The lecture has been already summarised for you. When you are not teaching from the text, notes are much more important, but in principles of economics, most of the teaching is from the text.

Relationships

While I do not believe that faculty should concentrate on having 'personal transactions with students', I do believe that teaching works better when a bond connecting the student and faculty is created – where the student also thinks that the faculty is someone he or she can respect. It works even better when the student feels able to question the professor's arguments, and discuss them with him or her. Where I teach, it is just assumed that this is the case. It is when people are at universities, and are teaching because they have to, not because they want to, that there is a problem with faculty availability and interaction with students. But that does not describe professors who attend sessions on teaching at economics conferences, or who read journals devoted to the teaching of economics.

Context, climate and power

The new paradigm pushes cooperative learning, and I am all for it, but I am also an economist and one of the lessons I have learned from economics is that cooperation can only take you so far – that institutions develop that put individuals in competition with others. The reality is that good economic institutions, and good educational approaches, find the right mix of cooperation and competition. Ultimately, the teacher is not a student's buddy; he or she is their teacher. Student self-esteem comes from the student learning what the teacher has to convey to them, and showing the teacher that he or she can jump the hurdles the teacher has set up, not because the teacher has empowered the student.

Assessment

Assessment is something that depends on the structure of the course. The use of appropriate assessment criteria can also help address some of the challenges of assessing large classes (for example, multiple-choice and/or short answer questions which can be automatically marked can provide feedback to students that is otherwise not possible). Some other ways of assessment are as follows:

- Presentations
- Projects based study
- Product design strategy
- Study participation assessment
- Scenario sharing assessment
- Rubric
- Portfolio

Technology use

The teaching of economics is evolving on many fronts, in terms of both content and delivery technology. Today's computer-based technologies offer powerful new ways to provide students with direct experience in the classroom curriculum. And, through using teaching and learning resources that can be manipulated electronically, technology can extend the experience of students far beyond the time and space limitations of conventional materials. Examples of such applications include these:

- Productivity software such as word processors, databases, spreadsheets, and multimedia programs that manage and display data concretely in a variety of forms and allow parts of documents and collections of information to be manipulated like building blocks.
- Problem-solving software in which students have repeated opportunities to use inquiry skills in computer-based investigations. Examples include Sunburst's classic Puzzle Tanks software for manipulating electronic representations of physical material ls and the interactive videodisc series Science Sleuths and Math Sleuths for Videodiscovery.
- "Cyber-materials," such as the on-screen Toolkit for Interactive Mathematics (IBM/EduQuest) or the combination computer-manipulative package Lego TC Logo (LEGO Dacta), both of which allow the user to move and assemble a variety of computer controlled objects into devices that can be operated electronically.

- Simulated environments where users can move around in contrived computer habitats, make moment-by-moment choices, and see the results of their decisions. Examples include the SimCity 2000 city-building simulation (Maxis) and the popular adventure game Myst (Broderbund).
- Computer telecommunications that allows students to use the resources of the worldwide Internet and commercial networks--including America On-Line, CompuServe, Delphi, eWorld, and Prodigy--to locate, retrieve, organize, evaluate, and process global information, such as tracking international weather patterns using downloaded maps.

Conclusion

Let me conclude with a brief summary of my major points. The primary point is that content is important with big picture thinking, and that journals of economics education, and economists interested in research in economics education, should spend more time researching how we can translate down the latest developments in economics – evolutionary game theory, complexity theory, non-linear dynamics and psychological foundations of economics –into teachable concepts, than on the delivery of teaching and teaching technology.

For Big Picture Thinking priorities are:

- ensuring challenge and progression in learning through imaginative, well-judged teaching, leading to the achievement of high levels of understanding and skill;
- devising curriculum structures which reflect the design principles of Curriculum for Excellence and enable all learners to benefit from the experiences and achieve the outcomes described in guidance on the curriculum;
- planning to ensure that all young people achieve the outcomes which comprise a broad general education and that they have suitable opportunities for choice and specialisation;
- working collectively to ensure that children, young people and adult learners make successful transitions between stages or establishments and from education to the world of work, building upon their prior learning;
- enabling all learners to apply learning in active and creative ways; and
- Putting in place arrangements to support teachers in their assessment of learning, so that they and society can have confidence in their judgements and that assessment plays a central role in tracking and facilitating progress in learning.
- Above all THINK BIG-FOR TEACHERS, TUTORS AND FACILITATORS.....

3.16 LINKAGE OF ECONOMICS CURRICULUM IN SCHOOL: WITH HIGHER EDUCATION

Highest cut off reported consistently for last many years for getting admission to Economics course in Delhi University clearly speaks of growing interest and demand for the subject among students. The takers of Economics in Senior Secondary are thrice as much as that of Accountancy and Business Studies. Economics subject has been rapidly building and expanding as major attraction to shape career of students since quite some time now, thanks to liberalization and globalization our country has rightly adopted. The seamless quality understanding of the nitty-gritty of the subject has hence become all the more significant now. Number of reputed foreign universities also reaching out to students in Indian soil makes it even more essential to align our school curriculum of Economics for smooth transition into graduation and beyond. No doubt our exercise to revisit our present school Economics curriculum, in which we indulge today, is urgently warranted and worth.

Based on my 25 years of experience of teaching the subject at school level and also the feedback from my students who passed and pursued graduation with Economics passionately, I can safely say that linkage of school curriculum and curriculum at graduation level is not without a jolt, especially for mediocres. Bright ones among the lot manage the transition from School to University anyway, but for an average student, curriculum at school level needs rationalization in the interest of the subject, so significant and sought after, more than ever before.

At university level the curriculum suddenly becomes more mathematical and technical to which the new entrant has been introduced only in class XII with effective teaching of only around 150 working days. Early acquaintance and little longer exposure of mathematical approach of Economics can make the student grasp, practice and command it better to enable his/her seamless adoption when entering University. Further, since majority of the students of Economics are from humanities and commerce streams who do not study mathematics in class XI and XII, find little more difficult in coping up with Economics in universities. Many of the universities do not even allow students of non-mathematics background for more reputed Honours course in Economics.

For students of class XI and XII who are keen to pursue Eco-Honours but not interested in doing full course of mathematics in school level may be allowed option of an additional module of relevant mathematics which is many times prerequisite for Eco-Honours. Such module of mathematics, say 'minor-maths', may cover relevant topics of co-ordinate geometry, probability, statistics and calculus. The universities may themselves recognize such 'minor-maths' to qualify for opting Eco-Honours or may be persuaded to acknowledge and recognize. Thus the gap can be bridged and opportunity can be extended to students from humanities and commerce streams.

The understanding of principles and concepts of Economics are not well spread in our school curriculum for good linkage with higher education. Unlike in many foreign schooling, our students are introduced to economics as subject only in IX standard which to me is a little late. Though we start reading little Economics earlier, in class VII and VIII under Social Science, the topics generally covered are gender and social inequality. This curriculum at VII and VIII standard does not impress on the students the fundamentals of Economics for which the students are reasonably ready to absorb. Introducing elementary Economics from VI standard will rather be a better proposition as practiced in many countries also. We may start with topics like 'barter system and its problems', 'evolution of money' and 'consumer awareness' from class VI and spread it till class VIII. At present

class IX students are exposed to very minor concepts like 'economic and non economic activity' and 'factors of production'. Here the covered topics like 'story of Palampur', 'people as resource', 'poverty and food security' give only an idea about socio economic problems faced by Indian Economy. Students in class IX do not find these topics interesting and challenging as syllabus fails to identify and signify the economic causes behind these problems. To develop logical and analytical thinking, topics like Impact of British Rule on Indian Economy and Indian Economy during 1947 to 1990 can be introduced here as these gel better with Social Science. Concepts like types of economic systems, planning and market forces can be easily taught by taking India as model economy. Till class X, a student of Economics must have basic understanding of the concepts like economic problem, law of demand and supply, money and banking, government budget and national income. Elementary knowledge of these concepts will ease the learning of the students who continue with Economics in class XI and XII where theoretical extension will be taught.

Class XI is an important turning point in academic journey of a student. Therefore the curriculum of the subject at this point of time in school education requires to be most appropriate to nurture interest in the subject and provide a good launching pad for higher education in the field. Unfortunately Indian Economic Development and Elementary Statistics taught in class XI and Microeconomics and Macroeconomics taught in class XII are not linked but are totally detached. Till class XI students are not prepared to handle scientific and technical approach of the subject. Production possibility curve, indifference curve analysis, concepts of costs, revenue, product and income and employment theory etc. come as a blow to an average student. Very often the similar concepts introduced together lead an average student to confusion. Such curriculum ultimately makes an average student feel the subject 'difficult' and it gets reflected in the results of class XII. The pass percentage of Economics is hence left behind as compared to other preferred promising subjects. Starting Microeconomics and Macroeconomics from class XI itself and extending it further in class XII shall help the student to avail the required extra time and lay much better mathematical base of Economics for smooth linkage with curriculum in higher education to which he is going to be exposed immediately thereafter. Production possibility curve, concept of opportunity cost , concept of utility, demand function , elasticity of demand , supply function, elasticity of supply and market forms related to Microeconomics along with money supply, foreign exchange and banking of Macroeconomics can be taken up in class XI. Rest of the topics of Micro and Macroeconomics of the existing syllabus can be kept in class XII. Elementary Statistics topics like 'diagrammatical and graphical presentation of data' and 'measures of central tendency' already covered in class X Mathematics, can either be done away with or the weightage of the same can be reduced substantially in class XI.

I am confident that the school curriculum if stretched, amended and reorganized as above shall boost the grip on the path of learning Economics and also its smooth linkage with higher education. Nowadays school students have a lot of exposure about economic scenario through several media/ communication channels. They want to understand economic principles behind every political decision. They want to know the economics of international relations. It would be naive to underestimate their potential by telling that they are too young to understand principles and theories of economics.

The discipline of Economics has a production function just like any industry: its inputs are the papers and books of professional economists, its output is economic knowledge which is put to use by business and government, taught to students and used for further advancement of the existing knowledge of Economics. Upgradation in higher education syllabus is inevitable to keep pace with rapid expansion in economics literature. Therefore syllabus in higher education is going to be more

complex and technical. To equip the students against these challenges, improvement in Economics curriculum in elementary and secondary schools is must. In addition it will enhance economic literacy and citizenship capabilities among all students. They will gain a better understanding of national and worldwide economic events, issues and problems enabling them to become better decision makers in their personal and public matters for ultimate gain of society in general.

1. Introduction:

India is at a watershed. With a high proportion of young population, education has assumed centre-stage in discussion and debate. Also, India has emerged as one of the important economies result that understanding the way the economy functions has become one of the key challenges for every economy in this globalized environment. Naturally, economics as a discipline has become very sought after by students all over the country. The opportunities available after having had a sound background in economics are vast. The challenge for us in India is to be able to provide these students with a foundation in the subject strong enough to enable them to move to any sub-field of their choice with ease.

In order to do this, it is vital to provide a smooth link between the school economics curriculum and the one in higher education. For one, integration will bring continuity and the teaching-learning process will be smoother. Second, repetition of topics can be avoided and the time saved can be spent in delving deeper into concepts and applications. Third, in a discipline such as economics there are certain tools- mathematical and statistical, which are employed to understand economic phenomena. A clearer understanding of these at the school level would facilitate learning at the undergraduate level and help in dispelling the fear which accompanies higher studies in economics. Finally, often the manner in which economics is taught and evaluated at the school level is such that at the end students learn many definitions rather than concepts. It becomes difficult to make them unlearn those definitions. That is why often students who excel at the undergraduate level are the ones who have not done economics at the school level. This paper would attempt to argue that there is a case for intelligently linking the two stages of learning to make the most of the synergies that exist.

The paper is organized as follows: In the first section, an attempt has been made to look at the problem as it exists in the context of India today. This is done through a brief review of the current scenario. The next section identifies the challenges. This is followed by suggestions of possible solutions, keeping in mind both the context of India and the contemporary global environment. A final section gives the concluding remarks on the role that academic practitioners can play in bringing about a smooth transition from one stage to

India has given the world many leading economists; Amartya Sen was awarded the Nobel Prize for his contributions. Many of the economists have worked on problems facing developing countries and they use the most sophisticated tools and methodologies for the purpose. The objective is to provide students of economics the foundation so that they have a smooth learning path which will enable them to compete with the best in the world.

2.1. Current Scenario:

In the world today. In recent years, the world economy has witnessed enormous turmoil with the Economics is taught at different levels- at school, college and university. The course contents at different stages are decided, in most cases, without any reference to the earlier stage. There is a diversity of text-books and reference material that are used. Often sections of different books are referred

depriving the readings of coherence.There are many state-level boards in another.

2.2 The Indian Context:

Which economics is taught. The level of rigour differs considerably, making the degrees granted not comparable. Some have standards at par with the international level, whereas many are far below.

2.3. Problems:

The main problem that arises because of the framing of syllabi without reference to the earlier stage is that there is little linkage between the school curriculum and that at the higher stage. Besides, the teaching and evaluation patterns encourage students to learn definitions without any clarity of the basic underlying concepts. Students are exposed to a whole array of topics and evaluation is done in a manner which tests the students' ability to recall information rather than sound conceptual understanding. Since entrance to undergraduate studies is determined by the percentage of marks scored at the school level, there is no incentive to go beyond the curriculum to test the knowledge gained.

Specifically, tools which are needed for studying economics at higher levels- like mathematics and statistics are not introduced in a manner which will help a smooth transition with the result that students develop a fear at the undergraduate level.

2.4. Challenges:

There are challenges that exist both at the school and higher levels. First, the number of students who opt for economics is large and growing rapidly. Among those who opt for economics, not all would want to pursue higher studies in economics. It is argued that the level of the school curriculum, therefore, must be such that diverse set of students are able to follow and score well in the examinations. Second, it is a reality that it is difficult to find good teachers willing to teach economics at the school level. This is because of the incentive structure in schools compared to other opportunities available for economics undergraduates elsewhere in the economy. Also, since the teachers themselves have been trained in different boards, there is a lack of uniformity in the dissemination of the course content. Moreover, often promotion of teachers is based on the performance of the students; so marks continue to drive the system.

3. A Possible Solution:

The solution to the present problems could be a multipronged one, consisting at least of three elements to begin with. These are making use of the synergies, handling diversity and continued outreach.

3.1. Making use of synergies:

An analysis of the course content, its dissemination and the final evaluation at the school and the University levels in various parts of the country reveals that they have been framed without an examination of the synergies that can be utilized at the different levels. At the school level, it would be useful to simply introduce the basic concepts and use Indian examples and case studies to motivate the topics. The basic tools of mathematics and statistics can be introduced in a manner so that simple case studies can be done in groups using the tools and this can form part of the evaluation process.

This can form a rich foundation for the students as they prepare for undergraduate studies in

economics. The students could also develop on those case studies as they learn more and eventually could turn them into research papers. This carrying on of a project seamlessly through various levels can become an important aspect of continuity and linkage between the various levels.

3.2. Handling Diversity:

It is easy to propose solutions but one has to take account of reality. The diversity that exists in India is a challenge but one can look at it as a great opportunity as well. The curriculum could be fine-tuned to take into account the different interests and different backgrounds of the students. For instance, the case-studies aspect proposed in the previous section could be one where students use their vacation time to study one distinctive aspect of their respective states or neighbourhoods and deal with it in the way they like, using any tool- statistical, analytical or mathematical. This would need creative thinking to ensure that the market is unable to produce the projects so that students cannot simply go and purchase them!

This would become simpler if it is done in a phased manner. Any introduction of change in a curriculum must be well thought-out and done in a calibrated manner where the resources needed for implementation are freely available and of a good quality. For this, first text-books need to be written which would incorporate recent examples from both the global and Indian contexts. This would familiarize students with basic concepts in their courses and their application. Feedback from the users is essential to improve the books. Second, these may be supplemented with handbooks and supplementary readings for teachers. Students could be encouraged to publish their case-studies and a series could be brought out so that prospective students can have access to those. Resource materials that are of good quality and easily available can serve to manage the diversity that exists and that poses an enormous challenge to bringing about a smooth transition from one level to another.

3.3. Continued Outreach:

This is an opportune time to step up efforts to reach out to students, teachers and educationists from different levels through workshops, seminars and conferences to exchange ideas about the problems and attempt to reach a workable solution. The boundaries that exist between the various levels have to be dismantled in order to benefit from the synergies that exist between them. This can be done by incorporating a stage in curriculum revision in which different stakeholders are invited to add inputs. Also, a process of continuous feedback needs to be taken from students, their parents and faculty.

As an interim measure, workshops or summer/winter short courses could be organized as bridge courses to enable the teachers and students to fill the gaps that exist in their knowledge/tool base so that the new curriculum can be carried out innovatively.

This outreach would be enriching because it would not only help handle the diversity and help smoothen the process but also bring together a wealth of information about the various ways in which one could make the course fit into the Indian context while confirming to the international standard.

4. Concluding Remarks:

This National Conference could be a starting point of a process of discussion and debate on how

to bring about a smooth transition from the school to higher education. We are at a stage when the challenges can be met with a concerted and continuous effort by bringing in more and more people to think and write about the problems facing this area and make concrete progress towards finding and implementing the suggested solutions. There are many motivated teachers at the school, college and university levels. A pooling of expertise and experience would go a long way in improving the present situation and preparing for the challenges ahead.

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3.17 ACADEMIC ACHIEVEMENT OF STUDENTS IN ECONOMICS AT SENIOR SECONDARY LEVEL:A CASE STUDY OF A SCHOOL LOCATED IN CENTRAL DISTRICT, DELHI

Abstract

Economics is very dynamic subject in nature. It touches all spheres of human activities in their daily life. As a subject economics helps to look more deeply into the world around you. It can also give you new perspectives on some most challenging problems facing the world today. Economic as a subject does not revolve solely around wealth creation, but economics decisions and activities impact on many different areas of society and on our own everyday lives. It touches important challenges of the world i.e. poverty, unemployment, fluctuation in interest rate, economic depression, inflation, taxation, migration of labour production and consumption, wage rate, re-distribution of wealth, and efficient use of resource.

In this piece of research the authors try to gaze out the causes which are very pertinent to the students' academic achievement in economics in this particular school. Students' academic performance in any subject is the result of many factors. The authors list out them into students' CGPA in the previous classes, language proficiency, numerical ability, instructional strategies used by teachers. A self-made tool is used to know various parameters related to students performance in economics. Language proficiency, numerical abilities and appropriate instructional strategies were played important role in students learning in economics. A set of instructional strategies "core teaching skills" used by author are positively associated to students' performance in economics. These instructional strategies consist of questioning skills, explaining skills, response management, behavior regulating skill, reinforcement skill, effective communication, classroom management and effective use of writing board. It has been found in the study that students' with low scoring in language proficiency and numerical ability are poor in their academic achievement in economics in both 11th and 12th standard irrespective to streams. Author observes classes of other teachers in the same school for economics, but the discourse of teaching-learning was lacking use of essential teaching skills. This school allows Hindi, English and Urdu as a medium of learning, but majority of students found weak in language proficiency. Numerical ability among commerce students was above average but arts streams students found very weak in numerical ability.

Keywords: academic achievement, instructional strategies

"A teacher can never truly teacher unless he is still learning himself. A lamp can never light another lamp unless it continues to burn its own flame. The teacher who has come to the end of his subject, who has no living traffic with his knowledge but merely repeats his lesson to his students, can only load their minds, he cannot quicken them"

-Rabindranath Tagore

1.1 Introduction

The economic prosperity and good quality of any nation depend on the development of human resources of that nation. Teacher plays a very crucial role in developing quality human resources. D.S. Kothari rightly quoted "Destiny of India is being shaped in her classroom". Classroom is the

place where a child spends most crucial period of their life. It is the place where a child learns the lessons of committed citizenship and humanity. Teacher is the personality who can be emulated by the children. It is essential for teacher to be very sensitive about tackling the classroom problem. He must be efficient enough to deal with the problems related to classroom.

Teaching is the profession and it required certain skills to perform tasks efficiently. Singh (2009) identified them as 'core teaching skills'. These include; lesson introducing skills, questioning skills, response management and behavior regulating skills, writing board skills, communication skills, and teaching methodologies. These skills are called 'core teaching skills' because these are common for all teachers. It means every teacher from primary to higher studies expected to demonstrate these skills. There is no fixed pattern to use but a teacher need to tailor the pattern accordingly.

Academic achievement in every subject is affected by many facets. I felt that students specially (Arts stream) assume Economics as a difficult subject due to its conceptual and mathematical orientation. The academic achievement in economics also influence by number of factors. On the basis of experience with the students, I felt that students quantitative and language abilities are important determinant of academic achievement of students in economics at senior level. Besides this I also felt that teaching skills and their effective used can positively influences students' academic achievement in economics. This study is mere not a cross sectional but these are the observation and practices of span of experiences of this school.

Quantitative skills are marked by an ability to solve numerical problems easily. People who are good at figuring out a tip are tapping into their quantitative abilities. But for some people, quantitative ability also means that they are able to separate a whole into its constituent parts more readily than others. Quantitative ability includes arriving at mathematical solutions to problems, as well as basic adding, subtracting, multiplying and dividing (Adu, et al, 2009).

1.1 Rational Behind Study

The investigator itself is taking Economics as a subject since last six years. When I joined this school, economics was compulsory subject in all sections of Arts and Commerce. Students' performance in economics was not satisfactory in previous years. As a result school made it optional to the students'. Since then number of students choosing economics as a subject have been decreased. I have been discussing this issue of poor performance of student in economics with my colleagues and teachers of other schools also. Because of day-to-day interaction with students of economics I got a notion set in my mind that majority of the students (Arts stream) who choose economics as subject at senior secondary level are not very good in their numerical and language abilities. The investigator took initiative to understand this issue empirically. The investigator took help of his colleague language faculties and mathematics faculties in the school and developed numerical and language ability test. A teacher must be equipped with certain essentials teaching skills which I understand 'core teaching skills'. My experiences with these skills found very positive. Sometime we aware of these teaching skills but do not use in real classroom setting.

1.2 Profile of the Institution and Students

This institution is the oldest one, catering educational need of the people residing in the walled city for long. This institution was established in the form of Madarsa Ghaziudding in the year 1692. One Mughal Shiphsalaar (Ghaziudding) laid its stone for educating people in this area. Later on it was also known as Anglo-Arabic Delhi College. Since independence it was offering modern educa-

tion including languages Arabic, Persian and Urdu. This is the unique institution in the sense that it offers three medium of instruction at senior secondary level. Currently, around 1900 students enrolled from 6-12th standard. Recently it also opens for girls. It is the landmark in school history. At senior secondary level around 350 students' are studying Economics in both (Commerce and Arts) streams. Approximately 30% are studying in Urdu medium. Hindi, Urdu and English medium students sits in one class at senior secondary level. It is very challenging for teacher to deal with them. A teacher needs to be equally efficient in three languages and subject terminologies. Majority of the student studying in this school belongs to walled city having Urdu background. Majority of Urdu medium students don't have adequate knowledge of mathematics. It is my very long time observation with Urdu medium students in this school. When I have been in the process to evaluate answer scripts of Urdu medium student, very few try to attempt numerical questions in their Economics examination.

2.0 Objectives of the Study

6. To study quantitative abilities as a factor affecting students' academic achievement in Economics at senior secondary level;
7. To study language abilities as a factor affecting students' academic achievement in Economics at senior secondary level;
8. To study the effectiveness of using 'core teaching skills' in Economics at senior secondary level.

3.0 Methodology

This study concentrated to a particular school. The population of the study consists of all students studying Economics at senior secondary level in this school in both (Commerce and Arts) streams. Students' first summative and pre-board examination results have been used as academic achievement indicator. Ex-post facto research design is suitable to this study.

3.1 Selection of Sample

Stratified random sampling technique used for selection of sample. 80 students selected for investigation (50 from 11th and 30 from 12th standard) out of 350 students enrolled in economics in both stream at senior secondary level. About using 'core teaching skills' investigator itself identified them by studying literature and with the consultation with the experts of the subject. Investigator itself practices 'core teaching skills' at senior secondary level. Investigator also collected views of students throughout the year about teachers' approach of teaching economics. Teachers were also enquired about using 'teaching skills' at senior secondary level.

3.2 Tool Used and Data Collection

The investigator with the help of language teacher constructed a tool consisting 10 items each of Hindi, English and Urdu languages. The difficulty level was only 8th standard in each language. Investigator also constructed a quantitative ability test. The items put in this test were economics specific only. The concept of percentage, square root, fraction multiplication, one variable liner equation, rule of division was part of quantitative ability test.

Besides this the investigator got the feedback about using 'teaching skills' from the economics teachers teaching in the same school. Investigator got clips of writing board work done by teachers.

Students also enquired about 'teaching skills' used by their economics teachers. These teaching skills consist of lesson introducing skills, questioning, response management, behavior regulating skills, explanation and illustration skills, reinforcement skill, communication skills, writing board skills and subject knowledge. These skills are sub-divided into parts. Students' and economics teachers were enquired about using these skills in the classroom.

4.0 Analysis of Data

Karl Pearson correlation coefficient used. Quantitative and language ability test marks entered in data analysis software. Value of correlation between 1st summative examination marks and quantitative abilities of students was computed. A value of correlation also computed between language abilities of student and their 1st summative examination marks in Economics.

4.1 Results and Discussion

Quantitative abilities play an important role as academic achievement in Economics is concern. I have been taking economics since last six years I experienced that students are not good enough in quantitative abilities. When I start statistics in 11th standard students came to me with general mathematical operations (+, -, ×, ÷) related problems. It would be worth to share my recent experiences of 11th standard revision classes. An Urdu medium student asked me (why 0.5×2 not equal to 10?). We need not to be amazed by getting such questions of students. It is since Comprehensive and Continuous Evaluation (CCE) has been implemented in lower classes. We senior teachers' think that we just have to deal with our subject and are not here to teach basics of mathematics used in Economics. A teacher needs to accommodate such responses too. I have lots of things to share but in short I can say majority of the students found weak in their quantitative abilities. In a quantitative ability test of 20 marks administered on both 11th and 12th standard together (Mean=8, SD=3.01, Max=17, Min=2).

The correlation coefficient between marks in quantitative abilities and students academic achievement was computed. The correlation results between quantitative abilities and marks obtained in 1st summative examination ($r=.577$; $p<.05$) found significant. A weak correlation ($r=0.221$) was found between language ability test and marks obtained by the students in summative examination.

4.2 Problems of Urdu Medium Students

It has been mentioned in the profile of the school and students' that approx 30% student enrolled at senior secondary level chose Urdu as a medium of instruction. Both students and teacher found themselves in trouble in the sense that they don't have sufficient material available in Urdu medium. I felt our NCERT book for Economics is not sufficient enough for Urdu medium students. The graphs, diagrams, tables, tree diagrams, pictures presented in the books are not communicative enough. The terminologies are not decipherable. Numerical problems are not sufficient as their numbers and presentation is concern. These are students' feedback given to me about NCERT text book for Economics in Urdu medium. Available text book for Economics need to be overhaul with respect to its graphs presentation, subject terminologies, translation of subject Urdu terms in English, sufficient numerical problems.

Besides this Urdu medium students trapped in numbers phobia. They are so scared of number that they don't want to attempt the numerical problems. Very recent experience when I have been in

evaluation process of pre-board answer script I found out of 30 sheets only 5 Urdu medium students try to attempt numerical questions. Unfortunately their answers were found wrong. One more experience which is worth to share with you is that I diagnose the problem of Urdu medium students' about their quantitative abilities. To confirm my presumption about children I administered a test of quantitative abilities consisting 20 items and the difficultly level was hardly VI and VII standard. The results amazed me. No single Urdu medium student crossed five marks out of twenty.

4.3 Teaching skills

A surgeon requires essential skills for performing surgery. In absence of these pre-requite skills he/she cannot perform his/her task efficiently. I used the same analogy for every profession. Teaching is also a profession. A teacher must be aware of repertoire of teaching skills- (sets of alternative routines or procedures, all of which serve some common) for performing his/her task efficiently. My yesteryear experience of 11th standard students gave me positive response of maximizing use of teaching skills. Due to advent of C.C.E. the quality of students was not very good. In that year 11th standard results was around 30% in our school. I tried to maximize myself in using 'teaching skills' in the classroom. I was in comfortable zone and my sections' result in economics was approx (80%) in 11th standard (92%) in 12th standard. I felt these sets of skill worked in classroom setting. These set of 'teaching skills' not merely useful for economics teachers, but for all subjects.

4.3.1 Lesson Introducing Skills

If a Mandari (Juggler) is going to show his performance to its spectator and will not start it in proper way then spectators will not get interested. His show might have flop. The same analogy will be applied in case of teacher. Here, teacher is Mandari and classroom children are spectator. It is very important for a teacher to link previous class/topic to current class/topic. It helps to the students for recalling their understanding related to particular class/topic. Sometime there is possibility that particular student not attended the previous class. Previous knowledge needs to be enquired by the teacher and a brief discussion should be held on current topic. Starting a class in this way will help to create a favorable environment for learning. The class should not start with a threat otherwise a state of readiness to learn will not emerge among children. It is my personal experience that if a class started with a positive notion then students' will take interest in classroom teaching-learning process.

4.3.2 Questioning skills

The ability to ask and answer questions is central to learning. For more than two thousand years (since Socrates) the questioning has been an integral part of teaching. The use of questioning skills is essential to systematic investigation in any subject area. However, using questions to assist students' investigation is a relatively new technique in schools. In the past, teachers primarily questioned students to ascertain whether or not they were learning the book content and to see if students were paying attention. Richard L. Loughlin provide an excellent set of guidelines for the teacher who wishes to develop good questioning techniques i.e. (i) distribute questions so that all, including non-volunteers, are involved (ii) balance factual and thought-provoking questions (iii) ask both simple and exacting questions, so that the poorer students may participate and the brighter students may be extended (iv) encourage lengthy responses and sustained answers (avoid yes-no questions, questions overlaid with afterthought, fragmentary questions, and those that tug or encourage guessing (v) stimulate critical thinking bay asking: "to what extent?" "How" "Under what circumstances"

"Why?" compare and contrast. Avoid: "Does anyone know? And who can tell us? Allow time for thought. Wait until five or six want to speak. Be a model of exact phrasing and coherent thinking. Encourage students to comment on the answers of classmates. Never interrupt a student who is attempting to answer nor tolerate ridicule of an honest effort. If a student asks a question, don't answer it until you have asked the class, "How would you answer that question..? It is worth to share here that I use these skills in classroom and found very encouraging to the students (Lewis).

4.3.3 Response Management Skills

Knowledge itself reside in children minds. A teacher should not try to pour knowledge into children minds but try to drawing out it from their minds. While teacher interacting with the students in the classroom it is not necessary that all responses given by students are ninety degree true. In this situation their answers needs to be scaffold intelligibly. Answers needs not to be supply directly but cues and prompting techniques expected to be use. Responses need to be shaped in such a way that it can create critical awareness among pupils. It is my personal experiences with the students that if we try to shape students responses then they feels confident and offer themselves voluntarily participation in classroom activities.

4.3.4 Students' Behavior Regulating Skills

Verbal and non-verbal skills are important for teachers of any subject. Moving in the classroom (purposefully); gestures- like movements of the head, hand and body parts to arrest attention, to express emotions, to indicate shapes, all are acts expected to perform by teachers in the classroom. When the teacher wants to show emotions or to put emphasis on a particular point, changes in voice pattern is necessary to makes pupil attentive. These behavior regulating skills are important to grab attention and meaningful interaction between teacher and students.

4.3.5 Use of Writing Board

In Indian context writing board is the important teaching aid in the hands of teachers. This is my observation about this particular school that only three out ten teachers uses this tool efficiently. Effective use of writing board in classroom helps pupil to understand any concept easily. Because writing board provides concrete experiences to students instantly. A teacher needs to write in legible ways on writing board. Sentences and words should not leave incomplete. Diagrams, tables, graph needs to be arranged in systematic manner. Axes of graphs should be mentioned clearly. Make sure all learners can see the writing board clearly. Proper difference between words and line needs to be maintained. The teacher should ensure that all students viewing writings on writing board are legible to all. If your writing style is clear, confident and well-organised, you will find that your learners progress so much better with own writing skills.

4.3.6 Communication Skills

Communication skills are merely not necessary for teachers but for every professional. A teacher should keep in mind their students background before speaking anything in the classroom. A teacher should strive to improve its communication. Every teacher must aware the process of communication and how it can make effective and useful for its students'. Sometime local dialect of teachers makes communication ineffective because encoded massage is not transmitted. Sometime voices are not loud enough to understand. A teacher needs to speak grammatically correct sentences. Flow of communication should be logical. Emphasis should be given on key points.

It is worth to share one of my experience related to communication skills in the classroom. I have been taking 11th standard for Economics in this session. I was usual that I have been in the classroom and proceeding syllabus routinely. Students' never raised a question. I assumed that they have understood the topic/concept discussed in the classroom. It was before 1st summative examination. One day when I planned to get interacted with the students then I found majority of the students were not in the situation to answer general questions about economics. I just get refection from the students. Students were found confused with subject terminologies, because three mediums students sitting together. I decided to change my communication pattern with the class. Urdu medium students' were not disclosing their problems. Their confidence was very low. They don't want to share their problems with me. I interact with them. I told them dear students this is not a problem that you are not aware of essential mathematical concepts, but the problem is that you have been not sharing your difficulties with me. Few students show their courage to share their difficulties with me. I took crust of every topic and discussed specific terminologies and words used. In this way I try to increase involvement of such students' whose mathematical concepts were not very strong. Students' participation increased by using this practice in the classroom and they found more motivated to learn.

4.3.7 Reflective Teaching

According to my point of view teaching is an art and it does not have set notions. As every student is unique in its dispositions, innate capabilities, their learning style, their pattern of understanding, perceiving things, reacting to their environment, no readymade method will be appropriate for classroom teaching. A teacher needs not to be stick with single method of teaching. They should try alternative approaches of teaching. Student alone cannot be blame for poor performance but somehow a teacher is also responsible for this pathetic situation of the student. A teacher needs to self introspective approach of teaching. These reflective approaches of teacher influences students' academic achievement positively.

It will be worth to share one important experience here, I routinely taking my classes in statistics. I was taking exercise questions and trying to make them understand. It has been manifested by students' behavior that calculation in numerical problems reducing their motivation to attempt the questions. One thing stuck in mind that why they don't given easy questions from calculation point of view? I adopted this strategy. Within a week I found their confidence level boosted up.

4.3.8 Reinforcement Skills

We generally have the notions that the concept of reinforcement can only work with children. An adult don't require any kind of reinforcement due to his or her intrinsic motivation, but it is not true. I wish to share my classroom experiences with you. Last month I was in data collection process of my Ph.D. Teacher educators were subject to investigation. I talked with them about use and effectiveness of reinforcement. I got feedback that reinforcement is not only important for school children, but for we adults too. A teacher needs to use reinforcement strategically to boost confidence of students in classroom.

5.0 Conclusions

- The orientation of economics as subject has been changing day by day. In current scenario it tends to be more mathematics oriented. Universities prefer the students who have mathematics background or studied mathematics at senior secondary level. It means student who

don't have mathematics at senior secondary level are not preferred to given admission in B.A. (Hon.) Economics. It has not happen in other subjects of social sciences. Few universities discontinue their B.A. General programme. If students don't have mathematics at senior school level they are not eligible for doing B.A. (Hon.) in economics. This problem de-motivates the children for opting Economics at senior school level.

- It is my long time observation with the students in this school that students' who have acquainted with basic mathematics performs better in economics. Due to implementation of C.C.E. at lower classes teachers' responsibilities has increased. A teacher need to be more sensitized to children requirement. A teacher should make children aware of basic mathematics used in economics before starting the class. Basic mathematics used in economics should be part of syllabus. A teacher needs to create a sort of environment in the class that children can understand the subject. Alternative strategies should be used in the classroom. A teacher must ensure pre-requisite knowledge of students before going to start the statistics and numerical.
- The text book orientation should be change. It should include more real life case studies. Real life excursion and experiences should be part of syllabus. Economics students must be given experiences of visiting real production houses, steel plants, automobile producing units, banks, share market, agriculture farm, electricity producing units, dams, medical and engineering institutions, etc. This is my belief if these things included in the curriculum then children will be more curious to know about them.
- Text book needs to be relooking at its language point of view. Certain terminologies are such which need more clarification to the students. Both language and subject expert should be part of text book review committee. Before reviewing books, a feedback from teachers and students must be taken. School teachers must be consulted for reviewing text book. A helping material should be prepared for Urdu medium students. A weightage should be given to Urdu medium subject teacher for reviewing Urdu medium economics text books.
- Teaching skills are important for a teacher to perform their tasks effectively. This is my long time experience with the students that effective use of 'teaching skills' by the teacher in the classroom affects academic achievement in subject positively. Lesson introducing skills, questioning strategies, response management and behavior regulating skills, writing board skill, effective communication, reflective teaching, and reinforcement skills are the set of activity which are supposed to be manifested by a teacher for effectiveness in teaching. It is also felt that these 'core teaching skills' are not merely important for economics teacher but necessary for teachers' irrespective to subject.
- India is the second most populous country of the world after China. Indian classroom are crowded. Special attention cannot be given to all children together. But a special arrangement for weak student can be made. It can be possible when our most important pillar of school education i.e. 'teacher' needs to be very sensitive to the difficulties of the children in the classroom. A teacher needs to identify the children who have not been pacing with the rest class. A policy of remedial classes should be adopted to get weak children at par to rest class. Children should get special treatment in these classes. These children needs to be identified at the beginning of the session so, a sufficient time can be given to them.

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3.18 SITUATING ENVIRONMENTAL EDUCATION IN THE TEACHING-LEARNING OF ECONOMICS

Introduction

While Sciences are associated with facts and figures relating to the Bio Physical Elements around us, Social Sciences deal with the studies of human behavior and of societies. Sciences imbibed in us a sense of scientific enquiry, analytical and creative mind directed towards fearless pursuit of truth and clarity and to develop a scientific temper (NCF 2005). It is through science that we have new improved technologies which make our lives better. However, science alone cannot make the world a better place and unsustainable technologies could turn out to be death traps. Sir Winston Churchill once said "The sunrise of technology may prove to be the sunset of mankind". The Social Sciences carry a normative responsibility to create human values and help channel the creative scientific temper towards a path where each individual are rational and can think independently and thereby contribute positively towards the society (National Focus Group in teaching of Social Sciences, 2006).

We are now at the peak of scientific advances and economic growth yet we still have the problems of inequality, poverty, violence, food deprivation and rapidly declining physical environmental quality existing among us. The need of the hour is to imbibe scientific temper with humanitarian approach requiring a contract between science and social science to deal with the contemporary problem of poverty, environment degradation, resource deprivation and food security (Lehri, 2008).

As such, the curriculum of school Economics plays an important role in shaping the thought process and understanding of the students to enable them to think holistically. In this context, this paper attempts to discuss how a shift is necessary in the teaching-learning process of Economics.

Objectives:

1. To recapitulate and examine the basic market theory of Economics vis-à-vis environment and sustainability.
2. To situate the approach of Environmental Education in the teaching-learning of Economics.
3. To discuss the status of Environmental Education.

Methodology

Relevant books, journals, documents and other publications were analysed. Data collected through structured interview from students who represented their states/UTs in the Jawaharlal Nehru National Science, Mathematics and Environment Exhibition for Children held in Gangtok, Sikkim in November 2013 and Report of the Status of Implementation of EE in States and Union Territories of India, 2013-14 were also utilized in support of the paper.

Economics, Environment, Growth and Technology

Economics is the social science that studies how rational individuals, groups, and organizations manage the scarce resources, which have alternative uses to their best optimum use, to achieve most desirable ends. When economics as a social science was born, it heralded the principle of laissez faire economy or the free market economy propounded by the Physiocrats. The laissez faire theory lays on the principle that:

(i) All human beings are rational and have inert goodness in them.

(ii) There is no need for government intervention (Taxes, Subsidies, Market Regulations, etc.) in the functioning of the market except while enforcing civil orders and enforcing contracts.

(iii) Wealth of an economy can be derived from the exploitation from natural resources and that nature is bountiful in its supply or there is unlimited supply of natural resources.

This free market theory gained more popularity after Adam Smith, the father of modern economics linked his theory of "Invisible Hand of the Market" in his book "Wealth of the Nations" with it. Another important law in Economics which gave momentum to the market theory is the Say's Law. According to Say's Law, "Supply Creates its Demand" and that supply is determined by the Marginal Cost involved in producing an extra unit of a commodity. This means that the lesser the Marginal Cost from the Price of the Commodity, more profit is generated. Keeping in view of this Marginal Cost and Profit, Supply of the Commodity is generated. This Supply in turn creates a market of a commodity where demand is automatically generated and where the price of commodity is determined by the intersection of demand and supply. Value of a commodity is determined by its intrinsic value or its extrinsic value. Intrinsic value takes into account the use value or the amount of labour put into its production while extrinsic value takes into account the value that can be derived from the exchange of ownership of the commodity without changing the component of the commodity. Division of labour creates efficiency in production and people put labour into production of a commodity not because they love the task but because they are self- interested and want to acquire profit. Thus, profit is the driving force for production. And to these Economists, Market is the prime.

Economics has gone through many generations from Physiocrates to Mercantilist to Classical to Neo Classical Economics but some basic principle like the over emphasize on demand, supply, price, marginal cost and extrinsic value and on the market is still part and parcel of Economics even today. The free market rule or the laissez faire economy was hatched when technological changes were not involved in the mode of production. Adding up technological up-gradation in the mode of production like the Neo Classical Economics did, however should fasten up the pace of production and expand the market beyond and create more profit. If this be true, surely there should be no limits to growth.

Market Principle vis-à-vis Environment

Given the above assumptions of the market rule, there is nothing called limits to growth. However, the fact is that nature's resources are not bountiful and never ending as believed when the market rule was conceived. There exist "Limits to Growth". Limits to Growth : The thirty Year Update draws conclusion that new resources are found over time and that the current reserves therefore change but that ultimately resources are finite (Meadows et al., 2004). Though their methodologies and conclusions were put to question, surely we do know that growth cannot go on forever as nature does have limits to production. Exploited beyond its rejuvenating capacity, environment and the natural resources take a very long time to get back to its original state, or many a times, they are non-renewable. For example, Petroleum is not a limitless product. Extracted beyond its limits, even with very advanced technology, we cannot create more petroleum reserves in a short span.

Furthermore, the limit to nature's resources should not be misinterpreted with only petroleum, minerals, metals, etc. It does include the freely available natural resources such air, water, sunshine which are not accounted for in the market theory. As with these natural resources, which are

non-market applicable, there does not involve Marginal Cost in their production and hence price mechanism fails. They have use value but no or very less exchange value due to their free availability resulting to the Diamond-Water Paradox.

With these freely available natural resources, there also involves a market failure, first due their price mechanism failure and the externalities associated with them. The benefits that we derive from these commodities cannot be restricted to one individual. For example, planting more trees in a colony gives fresh air to not only to that colony but to the adjacent colony and beyond. Limiting the supply of fresh air that should otherwise be owned only by the resident of that colony is however an impossible task. If restricting the benefits of these commodities is difficult, equally difficult is the task of avoiding the negative externalities involved with such commodities. Suppose two community shares a common pool. Community A pollutes the pool while Community B does not. If the pool gets dirtied beyond limit, it is not only community A that would suffer but community B too. If one cleans the pool, the other benefits too, without however contributing to the cleaning process. Ultimately what actually happens is no one ends up cleaning up the pool. Cleaning up the pool involves costs and since the ownership and use of the pool has externalities involved, no community would think it wise to incur loss alone and let the benefits shared by all. This is what happens with public good, namely environment, here. In case of environment, Tragedy of the Commons is the most probably guaranteed.

At this point it will be good to realize that just because these freely available resources are non market applicable, have low exchange value and available in plentiful amount now does not mean that they have no economic value. They have a very high economic value. The health and wealth of an economy rest on clean air, water and sunshine. The relation that these resources have with the labor force is immense. A productive labor force or the Human Resource that is now so much of a common talk in the present generation and which plays an important part in the production process and the growth of an economy rest on a healthy environment. The productivity of these human resources rests on their health and longevity which in turn depend on the healthy environment. Ultimately, humans can live without diamonds but not without water. Whether or not Diamond –water paradox exist, the value of these free natural resources cannot be underdetermined by their very nature of non market applicability.

From the above discussions we can conclude that environment is a public good where Externalities and Market failure exist, which in turn further implies that the laissez faire theory or the free market rule theory will cease to exist in the context of environment. It also follows that the failure to be part of a market and having low exchange value should not however make a resource a low economic value resource. This is when Neo Classical Economics thought to create a new branch of Economics called Environmental or Natural Resource Economics, which applies the principles of economics to the study of how environmental and natural resources are important and should be developed and managed, and also focuses on why we cannot leave it to the market alone expecting the market principle to work freely and how government intervention in the form of taxes, subsidies and price regulations is thus needed when it comes to preserving the environment and natural resources.

Situating Environmental Education in Economics

It is now agreed upon by all that growth and development cannot continue without considering the environment and society aspects in order to move towards sustainability. A very important document on this is the report brought out by the World Commission on Environment and Development in 1987entitled “Our Common Future”, also called the “Brundtland Report”, which defines sustain-

able development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts revolving around 'the world's poor' and 'the environment'.

Following the Brundtland Report, in 1992 Earth Summit in Rio de Janeiro, Agenda 21 was signed by various countries promising that they would commit themselves to promote sustainability through a great variety of means, including education, now called Education for Sustainable Development (ESD) which equally emphasizes on Environment, Society and Economy. However Brundtland Report was not the first time that the concept of sustainable development was conceived. Stapp et al. (1969) had pointed out that a strong understanding of how resources are used requires knowledge of the social, political, economic, technological processes, institutional arrangements, and aesthetic considerations which govern their utilization. The Belgrade Charter (Connect, 1976) also discussed concerns related to the concept of sustainability wherein it had clearly mentioned "….. no nation should grow or develop at the expense of another nation and that the consumption of no individual should be increased at the expense of other individuals….".

Environmental Education (EE) is key to achieve the goals of sustainability. Truly meaningful EE is a crucial activity that must lead the way for a paradigm shift in education to promote the pursuit of sustainable development (NCERT, 2006). The contribution of environmental educators in the progress of ESD is greatly acknowledged (Hopkins & McKeown, 2002). Monroe (2012) also opined that ESD is much of what has been called EE since the 1970s. Further, the Declaration and Recommendations of the Tbilisi Intergovernmental Conference on Environmental Education provided the fundamental principles for the proposals in the Agenda 21 document (United Nations Department of Public Information, 1997).

Environmental education is a process aimed at developing a world population that is aware of and concerned about the total environment and its associated problems, and which has the knowledge, attitudes, motivations, commitments, and skills to work individually and collectively toward solutions of current problems and the prevention of new ones (UNESCO, 1976). The Tbilisi Declaration further added that "It is a lifelong process; **interdisciplinary** and **holistic** in nature and application; an approach to education as a whole, rather than a subject; and about the interrelationship and interconnectedness between human and natural systems" (UNESCO, 1978). The Tbilisi Declaration puts the goals of EE as follows – (i) To foster clear awareness of and concern about economic, social, political, and ecological inter-dependence in urban and rural areas; (ii) To provide every person with opportunities to acquire the knowledge, values, attitudes, commitment and skills needed to protect and improve the environment; (iii) To create new patterns of behavior of individuals, groups and society as a whole towards the environment.

Further some guiding principles of the Tbilisi Declaration which are worth mentioning are

- EE should consider the environment in its totality - natural and built, technological and social (economic, political, technological, cultural-historical, moral, aesthetic);
- EE should be interdisciplinary in its approach, drawing on the specific content of each discipline in making possible a holistic and balanced perspective;
- EE should explicitly consider environmental aspects in plans for development and growth;
- EE should emphasize the complexity of environmental problems and thus the need to develop critical thinking and problem-solving skills;

- EE should utilize diverse learning environments and a broad array of educational approaches to teaching/ learning about and from the environment with due stress on practical activities and first-hand experience.

It is evident from the above that EE if done right, will prepare students not only to be able to think holistically – keeping in view environment, society and economy – but also to take sustainable actions at present and in the future which will go a long way as we press hard towards sustainability. In a society, education is the only means to bring forth social change. The final product of education is to create responsible and responsive citizen. "The quality of citizen in terms of moral, ethical and literate standards is determined by the educative process that the citizen has gone through" (Lehri, 2008). To bring about sustainable development, education – EE for that matter – is the first and most important step.

Status of Environmental Education in Schools

EE is being infused in different subject areas, including Economics, as per the recommendations of the National Curriculum Framework 2005 (NCERT, 2005). However, applying interdisciplinary approach of EE in the actual teaching-learning process still appears to be an issue. Instead a multidisciplinary approach is still prevalent. This could be because teachers typically are grounded in no more than one of the multiplicity of disciplines involved, and logic leads them to approach EE through the intellectual filters of their own disciplines (Disinger, 1983). The impact of this method of teaching is reflected in the students wherein they are not able to connect the issue surrounding them with the compartmentalized knowledge that they receive each day in schools.

Moreover, proper understanding of the notion of human environment is essential for the attainment of the objectives of environmental education (EE), i.e. a better comprehension of environmental complexity and more efficient individual and collective action in coping with environmental problems (UNESCO-UNEP, 1986). However, in a recent study done to evaluate the level of students' awareness in regard to environmental concerns, it was found that most of the students all over India have a very textual-based knowledge about the environment. Their knowledge seems to be limited only to the bio-physical aspect of the environment. They could not view socio, economic, cultural, historical, moral and aesthetic aspects as larger part of the environment. Many students are found to be not able to relate with the immediate environmental problems that they face in their daily lives.

The Report on the Status of Implementation of EE in States and Union Territories of India, 2013-14 prepared by NCERT also shows that awareness level of students were found to be very low.

Conclusion

We live in an economy where the source of running that economy is our environment. Without the resources that we derive from the environment as capital input for production, all growth process will become standstill. There is growing need for awareness among all, to realize that destroying our environment will ultimately lead to our own agony. It should be known to all that it is high time to change our path of uncontrolled growth towards a path of sustainable development. And to spread this awareness about environment, environmental degradation, its relation to the economy and of sustainable development, education is the weapon and Environmental Education would be the best at that.

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4 CHAPTER PAPER ABSTRACTS

4.1 JOYFUL LEARNING OF ECONOMICS AT SECONDARY SCHOOLS

One of the important values of teaching economic at secondary level is that it should develop some basic competence among student, which are essential for the effective and efficient living in the modern society. But, there is a general feeling that school education fails to develop such competence among students. The purpose of the present study is to analyse the economics curriculum, instructional strategies and evaluation system at secondary level and whether the school education facilitate joyful learning of economics and the development of essential economic competence among students, so that students will be enlightened by leaning economics and will apply them in their real life. Many students complain that learning of economics is not at all interesting and attractive to them. Various studies show that the main reasons for this complaint lies in the faulty methodology and pedagogy adopted in the economics classes and the failure to create meaningful and realistic situation. The present study also analyses of the various strategies to make the learning of economics meaningful, realistic and life oriented.

Key words: Economics Education, Economics competence, methodology for teaching economics, realistic and life oriented learning, Joyful learning

4.2 FROM ASSESSMENT TO OBJECTIVES: REVISITING THE ECONOMICS CURRICULUM AT THE HIGHER SECONDARY LEVEL WITH A BOTTOM- UP APPROACH

'Evaluation processes dominate the dynamics of teaching and learning Economics at higher secondary levels, in CBSE schools in Delhi.'

According to Singhal (2011), Economics teaching and learning in the higher secondary classes follows the dictates set by the year end external (board) examinations. Both teachers and students were seen to be rational agents. Teachers give in to pressures of accountability to Management, Principal and Parent, who evaluate teacher success in terms of marks scored by students in the exams. Teachers' thus attempt to ensure expected results in the external examination through repeated practice of important questions at the cost of understanding and application of concepts. Students too, give in to number crunching in a three hour test; where high scores are considered deserving of high credit; and marks determine success in terms of admission to the institutions of higher education.

This is in stark contrast to Tyler's (1949) approach to curriculum planning. Tyler's model seeks to answer the following questions: What are the educational objectives to be achieved through the teaching-learning of the subject; how can learning experiences be selected which are likely to be useful in attaining these objectives; How can learning experiences be organized for effective instruction and; How can the effectiveness of learning experiences be evaluated? For Tyler, these questions can be answered systematically, but only if they are posed in this order, for answers to all later questions logically presuppose answers to all prior questions.

However, in the light of the trend reversal, it is imperative to consider a bottom-up approach to

curriculum delivery. Assessment procedures need to be re-examined to assess their effectiveness in achieving the objectives stated in the NCF 2005. This paper is an attempt in that direction. It reviews the CBSE Question papers through the lens of objectives and highlights the need for examination reforms and suggests possible alternatives which will impact the selection of learning experiences (syllabus) and their organization for effective instruction (pedagogy).

4.3 REFORM IN KNOWLEDGE TO ADDRESS THE CONCERNS OF THE MARGINALISED GROUPS IN THE ECONOMIC CURRICULUM

Almost three-fourth of India's population suffers from some form of social exclusion and isolation due to their ascribed identity to a social group. Social groups are categorized on the basis of caste, ethnicity, gender and religion. Excluded groups include the former 'untouchable' in the caste system, tribes, religious minorities such as muslims and christians and women from the excluded groups who experience multiple deprivation due to their gender and group identity. Recognizing the diverse nature of India's population with data indicating economic inter-group inequalities, the reform in curriculum in economics should aim towards developing an understanding amongst students on theories related to economic discrimination, economic and social status of the marginalized groups, inter-group inequalities and role of social exclusion and discrimination, mixed-method techniques to measure group-inequalities and economic discrimination and policies to address the problems of the marginalized groups. Such reform in knowledge, which includes a new curriculum in economics with themes that deal with diversity, inequalities and discrimination, will help students to develop skills and capacities to deal with diversity and differences in a democratic way.

Thus, the theory papers on economics for the 11th and the 12th standards, paper on economic problems in India and on statistics should include:

1. Theories related to the problems of the marginalized groups such as theories of economics of discrimination, identity economics and theories of feminism and patriarchy. This will enable the theoretical contributions on the problems of the marginalized groups and women is included. In the economic paper besides the situation about their problems, a section on policies should also be included.
2. Syllabus for the India Economic Development paper, the problem of various marginalized and discriminated groups should also be subject of teaching.
3. The statistics paper should include the data on marginalized grops and women and the techniques of analyzing the problem of these marginalized groups such as Oxaca analysis. We have to incorporate theory, empirical reality of the marginalized and discriminated groups and women and techniques developed to interpret and understand their problem. This will require data by social groups and gender.

4.4 SCHOOL CURRICULUM (ECONOMICS) : A COMPARATIVE ANALYSIS AND BETWEEN DIFFERENT SCHOOLS OF RAMPUR BLOCK IN SHIMLA HILLS : A CASE STUDY

Every successful concept and project in life requires a proper framework and planning. This relates to

all processes, including education. Whenever we embark on any new plan or procedure, we need to make sure that we have all the plans drawn up. What is on offer, what are the resources that we have, what are the steps, which we need to take and what are the goals that we need to achieve are some elements that need to be looked upon. A similar set of constraints when applied to education in schools and colleges gives birth to curriculum. A curriculum is a set of courses, including their content, offered at a school or university. The curriculum often contains a detailed list of subjects and the elements of teaching them.

John Franklin Bobbitt's "The Curriculum" published in 1918 mentions curriculum as an idea that has its roots in the Latin word 'race-course'. He also explained "The Curriculum" as the course of deeds and experiences through which children grow up into adults and get going for success in the society. A curriculum is more than putting together a set of academically required subjects. It must consider all aspects of the student life, the learning needs of students, the time available for the sessions and the teachers' idea, capability and workload.

In schools, the curriculum is primarily drawn by the educational boards or some central society. Here, the students have least choice in their subjects and study based on a universal curriculum, which works on all sections of the students' psyche and aid in the total development of the student. Hence, the curriculum aids in the proper development, while the child comes to terms with his or her own inclination. Therefore, at school levels, the curriculum aims at providing a structured platform, which gives every child an equal opportunity to excel.

Some common patterns were found in the ways learning networks formed within schools and evolved over time as curriculum understanding deepened and learning needs shifted. Ideas about dynamic Complexity suggest specific factors to keep in mind as networks of learners are strategically Shaped and guided to maximize the chances of learning "in the spaces between" the individuals involved.

In the light of above fact this paper is an attempt to compare and evaluate the school's curriculum especially in 'economics" designed by different state boards and societies, in different schools selected for the present study and its impact on the development of students social and academic life.

4.5 "KEY ISSUES IN GENDER ECONOMICS"

ABSTRACT

Gender biases in societal practices and development policies have resulted in persistent gender inequalities, it is increasingly being realized that mitigating such inequalities and enhancing women's capabilities and entitlements are crucial to the overall development of the country. In this context, several universities all over the world (including several Indian Universities) have introduced Gender Economics at under-graduate and post graduate levels.

Gender economics includes theoretical subjects such as importance and concepts of women studies, women in patriarchal and matriarchal societies and structures, patrilineal and matrilineal systems and relevance to present day society in India; economic basis and functioning of patriarchy in development and LDCs, particularly India; gender bias in the theories of value, distribution, and population.

'Demography of Gender' is an important concern in gender economics that focuses on demography of female population; age structure, mortality rates, and sex ratio, causes of declining sex ratios and fertility rates in LDCs and particularly India, theories and measurement of fertility and its control; women and their access to nutrition, health, education, and social and community resources,

and their impact on female mortality and fertility, economic status, and in work participation rate.

'Women in decision making' as a theme for inquiry has a prominent place in gender economics. It examines factor affecting decision making by women; property right, access to and control over economic resources, assets; power of decision making at household, class, community level; economic status of women and its effect on work-participation rate, income level, health, and education in developing countries and India; role of kinship in allocating domestic and social resources.

'Conceptualization of Women's Work' as done by gender economics has played most significant role in generating debates in the mainstream economics. It includes valuation of production and unproductive work; visible and invisible work; paid and unpaid work; economically productive and socially productive work – economic status, private property, and participation of women in pre-industrial and industrial societies – Female contribution to National Income.

Impact of dynamics of labour markets on gender relations has had important place in gender economics. Here the subthemes have been factors affecting female entry in labour markets; supply and demand for female labour in developed and developing countries, studies of female work participation in agriculture , non-agricultural rural activities, informal sector, cottage and small scale industries, organized industry, and services sector; wage differentials in female activities; determinants of wage differentials; gender, education, skill productivity, efficiency, opportunity ; structures of wages across regions and economic sectors.

Thematic areas highlighting Interrelationship of Women, Technology and Environment has attracted wide range of professionals to gender economics. They are: impact of technological development and modernization on women's work participation in general and in various sectors such as agriculture, non-agriculture rural activities, small and cottage industries and organized industry, activities of women and ecological and environmental concerns: the two way relationship, role of new technologies for helping women, Provision of information and training for simple harvesting of economics services.

Social Security and Social Protection for Women are central concerns to gender economics. They include women's entitlements, ensuring economic independence and risk coverage, access to credit and insurance markets; role of voluntary organizations, self help groups in providing social security; labour market biases and gender discrimination; effectiveness of collective bargaining; review of legislation for women's entitlements, protection of property right, social security, schemes for safety net for women; need for female labour unions; affirmative action for women and improvement in their economic and social status.

Macro level themes such as gender planning, developing gender sensitive policies and engendering governance in Gender Economics include Gender and development indices; mainstreaming gender into development policies; gender planning techniques; gender sensitive governance; paradigm shifts from women's well being to women's empowerment; democratic decentralization (Panchayats) and women's empowerment in India.

Thus, Gender Economics focuses on economics of gender and development and provide an understanding of the nature of the economic role of women and their contribution to the national economy on the basis of a scientific and non-sexist analysis of issues at the theoretical level and also with regard to specificity of issues prevailing in the micro, and macroeconomic context.

4.6 REFLECTION OF GENDER AND MARGINALISED GROUPS IN TEACHING LEARNING OF ECONOMICS AT HIGHER SECONDARY STAGE IN INDIA

Despite the fact that economics has become one of the most important subjects to those particularly study in their higher secondary classes, the merit of studying the subject varies from time to time. The paper examines the implications of the subject economics in higher secondary classes among the girls and marginalised groups, most specifically among the Scheduled Castes and Scheduled Tribes and how far the students who belong to these sections avidly consider economics among other subjects. The paper also argues the way in which the population among the students of economics and placing more emphasis on addressing key issues of empirical identification. The paper concludes that while the theoretical, conceptual, and practical difficulties with the use of data on schooling, quantitative input show some measures in the level of student achievement and also quality of teaching. The comparative approach among the States and the advantages students benefit at the national level, and the unique way of studying economics as a subject at the higher secondary stage paves way for effective education and social capital, and how this learning of economics makes them to be a part of knowledge society and identify them into higher echelons of business, administrative and entrepreneurial fields.

COMMUNICATION RECEIVED

Good initiative. Alas I have already agreed to attend a conference in Giridih on those dates. I went through the concept note. It raises many difficult questions, including some that would apply to other disciplines as well. Economics being a difficult subject which few school teachers are qualified to teach, I am not convinced that it is important to introduce it as early as Class 6. Even at higher levels, it is best to keep things as simple as possible (better for children to learn simple things with comprehension than complex things without comprehension).I am guessing that it would be very rewarding to search forte aching-learning material based on engaging and lively material such as stories,news, real-life events, in fographics, visuals, etc. rather than on abstract theories or mathematics. I am not the right person for this search but if it is initiated I will be glad to share any comments I may have, from time to time. Wish you well with this important project.

Best wishes,

Jean

(Jean Dreze)

5.1 ECONOMICS CURRICULUM IN SCHOOLS

Not too long back Economics was usually not part of the syllabus in high schools in India. One had to choose either the science or the arts stream in the senior classes. Studying economics was not an option that was available. Speaking for myself, I had chosen the science stream, with physics, chemistry and mathematics. I joined Delhi University to study physics at the undergraduate level but soon realized that I was more interested in the social sciences, and decided to switch. In the 1960s this was possible as long as you had the consent of the head of the department you wished to switch to. In my case, after some initial debate within my own mind between political science and economics, I chose the latter. When I spoke to the head of the department of economics, the only thing he asked me was whether I had mathematics in school, and when I said 'yes', he had no objection.

I have long felt that at the school level students ought to have a good grounding in literature, history, geography and civics, in addition to the basic science subjects, and economics should be brought in only later at the college level. But in all fairness one also ought to recognize that for a large fraction of our young population, college education is still a luxury, which really means that formal education for a vast bulk of our youth ends with Class XII. Under the circumstances the question is whether some basic economics ought not to be taught in the two final years at school, Classes XI and XII, as a possible option. For me the answer is clearly yes, for those who are not going to study beyond Class XII. The other group for whom economics should be on offer at the school level, in my view, are those who are likely to choose subjects or disciplines other than economics in college.

For those who would definitely enter college, and would be keen to study economics, my view would be that it would be best if they studied mathematics at the plus two stage and choose from

among the large gamut of subjects that are available in schools today, preferably not taking the plunge into the world of economics at that stage. I say this because there is inevitably a fair amount of duplication of some of the micro and macro that students do in school and then once again in college. This is unfortunate and should be best avoided. But there is the practical problem of precisely knowing at the stage of entering Class XI students, who amongst them would choose to study economics in college. Nobody would know this for sure, and sometimes not even the students themselves.

In reality therefore we have a situation where there are large numbers amongst our students who do two years of economics in school and then go on to do a further three or now four years for their graduation. In theory we think in terms of dovetailing the college curriculum from the school curriculum as a progressive sequence, but in practice there is a fair measure of overlap.

We now turn to the issue of what ought to enter into the school curriculum. Well, to begin at the beginning, there has to be a simple but clear consideration of the market mechanism, the consumer's problem and the producer's problem, the notion of equilibrium, and alternative market structures. This is very much the core of micro economic theory and a simple non technical coverage of this must necessarily be presented to students. Similarly, in the realm of macro economics, students ought to know the essential macro aggregates, and some of the basic tenets of the classical and Keynesian theories. While teaching the above one must eschew the approach that regards the market as the supreme institution that would be able to solve all the fundamental problems of an economy, and one must emphasise the importance of the appropriate role of the state in addressing the key problems of the economy of what to produce, how much and for whom.

I believe it would be desirable to have a coverage of the thoughts of some of the major Indian writers from the late nineteenth century onwards. This could include some of the key contributions of Dadabhai Naoroji, R. C. Dutt, Gokhale, Ranade, Gandhiji and Nehru. Most of their core thoughts continue to be relevant even today.

It goes without saying that there must be a careful consideration of Indian economic history, say from 1750 onwards. This must be followed by a critical examination of Indian economic development in the post Independent period bringing the story up to the present times.

Pulin B. Nayak

Delhi School of Economics

PROGRAMME SCHEDULE 25 FEBRUARY, 2014

9:15 to 10:00	Registration
10:00 to 11:15	Inaugural Session
Welcome Address:	Professor Saroj Yadav, Head, DESS
Key note Address	Professor G. Omkarnath, School of Economics University of Hyderabad Towards a Frameworks for Econoimics Education in School
Vote of Thanks:	Dr. M.V Srinivasan, Assistant Professor, DESS
11:15 to 11:30	Tea Break
11:30 to 1:00	1st Session
Chairperson:	Prof. Saroj Yadav, Head, DESS
Facilitator	Dr. Aparna Pandey, Associate Professor, DESS
Rapporteur:	Dr. Ashita Raveendran, Assistant Professor, DESS
Speaker:	Dr. G. Pradhan, Professor, IGNOU Teaching Economics to Beginners through mathematical Tools
Paper Presentation	Dr. Ritanjali Dash, Associate Professor, RIE, Bhubaneswar Learning Economics in Schools-A Dynamic Curriculum for Empowerment of Children
1:00 to 2:00	Lunch
2:00 to 3:15	2nd Session
Chairperson:	Dr. Neeraja Rashmi, Professor, DESS
Facilitator	Dr. Pratima Kumari, Assistant Professor, DESS
Rapporteur:	Dr. Tannu Malik, Assistant Professor, DESS
Paper Presentations	Dr. Santhosh Areekkuzhiyil, Assistant Professor, Thalassery, Kannur District, Keralal Joyful Learning fo Economics at Secondary Schools
	Dr. Tara Sabapathy, HoD, Department of Post Graduate Studies in Education, Vijaya Teachers College, Jayanagar, Bangalore Innovative Methods of Teaching Economcis at Secondary School Level
	Dr.Manju Agarwal, Associate Professor, Department of Education, University of Delhi. & MS. Nish, PGT Economics, Army Public School, Delhi Cantt. Concept learning in Economics at Secondary School level-A Curricular Dimension

	Dr. Rachna Saran, Pathways School, Gurgaon From Assessment to Objectives: Revisiting the Economics Curriculum at the Higher Secondary Level with a Bottom- Up Approach.
3:15 to 3:30	Tea Break
3:30 to 5:30	3rd Session
Chairperson:	Dr. Minoo Nandrajog, Professor, DESS
Facilitator	Dr. M.V Srinivasan, Assistant Professor, DESS
Rapporteur:	Dr. Seema S. Ojha, Assistant Professor, DESS
Speaker:	Dr. Saumen Chattopadhya, Associate Professor, JNU Nature of Economics: Revisiting the Economics Curriculum at School Levels
Paper Presentations	Dr. Aerum Khan, Assistant Professor, CIET, NCERT School Economics in the National Repository of Open Educational Resources: An overview of the developmental process
	Dr. Jyoti Pandey, Assistant Professor, Faculty of Education, MJP Rohilkhand Economics Curriculum at Secondary Level: A Review
	Dr. Jyoti Pandey, PGT Mathematics, DELHI Interface between Economics and Mathematics
	Dr. Kartar Singh, Assistant Professor, Jamia Milia Islamia Pupil's Performance in Economics- An Action Research.

PROGRAMME SCHEDULE 26 FEBRUARY, 2014

9:30 to 11:15	1st Session
Chairperson:	Dr. Neeraja Rashmi, Professor, DESS
Facilitator	Dr. Ashita Raveendran, Assistant Professor, DESS
Rapporteur:	Dr. M.V.S.V Prasad, Assistant Professor, DESS
Paper Presentations	Dr Ravikesh Srivastava, Professor, S P Jain Institute of Management & Research, Mumbai Innovative Pedagogical Module for effective linkage of Economics Curriculum in School with Higher Education
	Ms. Anjana Debnath, Delhi Public School, Pune Relevance of innovative practices in teaching school economics in today's life
	Ms. Sunita Pathak, Delhi Public School, Greater Noida Nurturing Creativity in Economics
	Ms. Sunita Pathak, Delhi Public School, Greater Noida Nurturing Creativity in Economics
	Dr. M.V.Srinivasan, Assistant Professor, DESS Economic dimension of government in school textbooks: an analysis of secondary level social studies textbooks in India
11:15 to 11:30	Tea Break
11:30 to 1:15	2nd Session
Chairperson:	Professor G. Omkarnath, School of Economics University of Hyderabad Facilitator Dr. M.V.Srinivasan, Assistant Professor, DESS
Rapporteur:	Dr. Pratima Kumari, Assistant Professor, DESS
Speakers	Dr. B.L Pandit, Professor, Delhi School of Economics Learning Theories in Economics Dr. Malabika Pal, Associate Professor, Miranda House, DU Linking School Economics Curriculum with Higher Education
Paper Presentations	Dr.Manish Chugh, NIOS, Noida Economics –"Big Picture" with innovative approach
	Ms. Ajita Hoshi, DESM, NCERT Situating Environmental Education in the Teaching-learning of Economics
	Ms, Anupama Srivastava, Delhi Public School Ranipur, Haridwar Linkage of Economics Curriculum

1:15 to 2:00	Lunch Break
2:00 to 3:15	3rd Session
Chairperson:	Prof. Saroj Yadav, Head of DESS
Facilitator	Prof. Manju Bhatt, Professor, DESS
Rapporteur:	Dr. Aparna Pandey, Associate Professor, DESS
Speakers	Dr. S. K Thorat, Professor of Economics, Jawaharlal Nehru University and Chairman, Indian Council of Social Science Research Reform in knowledge to address the concern of the Marginalised Groups in the Economics
	Dr. Vetukuri P. S. Raju, Assistant Professor, NUEPA Reflection of Gender and Marginalised Groups in teaching learning of Economics at Higher Secondary Stage in India
3:15 to 3:30	Tea Break
3:30 to 4:30	4th Session
Chairperson:	Dr. Ritanjali Dash, Associate Professor, RIE, Bhubaneswar
Facilitator	Dr. Shankar Sharan, Associate Professor, DESS
Rapporteur:	Dr. Tannu Malik, Assistant Professor, DESS
Paper Presentations	Mr. Sunil Kumar, Delhi Public School, Shimla, Himachal Pradesh School Curriculum (Economics) : A comparative analysis and between different schools of Rampur Block In Shimla Hills : A case study
	Professor Ismat Jahan Siddiqui, I.A.S.E, Faculty Education, Jamia Millia Islamia Academic Achievement of Students in Economics at Senior Secondary Level: A Case Study of a School Located in Central District
	Dr. Shilpa Gupta An Analysis of Applicability of Economics in Daily Households' Life: A Case Study of Bathinda District
4:30 to 5:30	Valedictory

Poster presentation of the Seminar


Economics Seminar

LIST OF PARTICIPANT

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2. Ms. Ajita Hoshi, Junior Project Fellow, DESM, NCERT
3. Ms. Anjana Debnath, Primary Trained Teacher , Delhi Public School, Pune
4. Ms. Anupama Srivastava, Delhi Public School Ranipur, BHEL Haridwar, Uttarakhand
5. PGT, Economics, Delhi Public School, Ruby Park, Kolkata
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