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Your "Idea" of today may become a "thought" of tomorrow. A "flash of truth" envisioned by you today may prove to be a "Law" of tomorrow, therefore let them not slip away into darkness, show them the light of the day; get them published.

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FEATURED ARTICLE

Presence of Children with Disabilities in Mainstream Classroom add to the Existing Workload of Regular Teachers—Myth or Real

Bharti*

Abstract: Presence of children with disabilities in mainstream classroom add to the existing workload of regular teachers—Myth or Real.

Presence of Children with Disabilities (CwD) in the inclusive education settings is often comprehended as addition to their existing roles and responsibilities, by regular teachers. The regular teachers are one of those key stakeholders, whose contribution is essential for the success of inclusion in education. If given a chance the regular teachers often come out with a long list of difficulties they have to face while teaching. These difficulties may or may not have any relation with the presence of children with disabilities.

The present paper attempts to study how the presence of children with disabilities in mainstream classroom, will add to the identified list of difficulties faced during teaching learning by regular teachers and despite this list the opinion of regular teachers towards inclusion of children with disabilities in the regular classrooms, whether favorable or not favorable.

The data was collected from 160 regular teachers transacting curricular areas at different levels of schooling through researcher made survey. The data analysis revealed that teachers identified, insufficient previous knowledge, concentration abilities, attitude towards studies, behavioral issues, lack of support from parents, large classroom etc., as difficulties faced by them during teaching learning. Despite these problems majority of the responding regular teachers had favorable attitude towards presence of children with disabilities in the regular classroom. The reasons for favorable attitude varied from being helpful in overall growth of children with disabilities to building confidence and developing sense of belongingness.

(Key Words: regular teachers, inclusive education, children with disabilities, regular teachers' role in inclusive classrooms)

1. INTRODUCTION

December 2016, India celebrated the passing of Right of Persons With Disabilities (RPWD) Act. The Act supports the right of children with disabilities for education and suggests measures to promote and facilitate inclusive education. As the name suggests and as also defined in the RPWD Act 2016, inclusive education is a system of education wherein students with and without disabilities study together, with appropriate support and flexibilities provided by the system for addressing the diverse educational needs of children with disabilities.

Implementation of inclusive education, in school education, in India is in practice, in the guise of zero rejection in admission under Sarva Shiksha Abhiyan (SSA), special provisions for Children with Disabilities (CwD) under both the SSA and Rashtriya Madhyamik Shiksha Abhiyaan (RMSA). Both RMSA and SSA merged under Samagra Shiksha at present.

Enrollment of CwD in the nearby mainstream schools has made education accessible. However, this access to education is restricted largely to only physical access. The access to quality education on equal basis with non-disabled peers still remained a dream, for most CwD. The reasons for this can be found in lack of appropriate teaching learning material, rigid curriculum, attitude of teachers, lack of essential support services, absence of onsite support, inadequate teacher education at both pre-service and in-service level etc (Bharti, 2016).

Savage & Erten, (2015) studied the relationship between teacher's perception of inclusion and their teaching practices and how this impacts the achievement of learning outcomes by students studying in classes 3 and 5. The findings indicated that learner outcomes are associated with teacher's effective teaching practices and associated belief's regarding inclusive education.

Regular teachers have a significant role to play in inclusive education settings (Patterson, 2005), such as work collaboratively with the resource teacher (Kittrell, 2017), monitor progress of all learners, preparing appropriate teaching learning aids etc. (Tyagi, 2016), and hence they should be made familiar with the applicable laws, principles and provisions.

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2. OBJECTIVES

The present paper attempts to study--

1. The problems (other than administrative) faced by regular teachers during teaching learning.

2. The opinion of regular teachers towards inclusion of children with disabilities in the regular classrooms, whether favorable or not favorable.

3. Modifications in the list of perceived difficulties faced by regular teachers during teaching learning due to the presence of children with disabilities in mainstream classroom.

3. METHODOLOGY

This is a survey research wherein the data was collected from 160 regular teachers transacting curricular areas at different levels of schooling through researcher made survey.

4. DATA ANALYSIS, INTERPRETATIONS AND FINDINGS

The survey consists of only two items---mention the problems (except administrative) that you face while teaching learning and express your opinion, with justification, on making children with and without disabilities sit and study together in the same classroom. Please note that, the first item doesn't mention CwD, yet few participants mentioned CwD, while listing the problems and challenges faced during teaching learning.

Objective 1: Problems (excluding administrative) faced during teaching learning

The purpose of this item in the survey was to list the problems and challenges faced by regular teachers during teaching learning. Content sifting of the responses to this open ended question led to the generation of the following table—

TABLE 1: Response analysis to survey item 1

S. No.	Content sifting of Responses (160 participants)	Frequency
1	Large number of students in classroom	59
2	Lack of appropriate resources	29
3	Individual problems of students	29
4	Insufficient conceptual understanding/desired level of learning/varying level of learning	25

S. No.	Content sifting of Responses (160 participants)	Frequency
5	Lack of basic knowledge	25
6	Behavior problems	24
7	Irregular attendance of students in school	24
8	No cooperation to teacher from students	23
9	Lack of interest in academics	23
10	Incomplete homework and class work	18
11	lack of concentration in the class	17
12	Family and social and educational background related	15
13	Subject specific such as Mathematics/Hindi/etc	14
14	Environment related includes infrastructure	12
15	Study habits	9
16	Involvement in non-teaching learning tasks during teaching time	9
17	no detention policy	7
18	Time management	4
19	Adjustment in the school environment	4
20	Problems due to co-education/adolescence issues	4
21	No problem	3
22	Problem of teaching child with deafness-dumbness and other CwD	3

The above table converted into chart (below) gives better idea of the problems reported by the participant teachers. Large classrooms beyond the prescribed teacher pupil ratio in the right to education Act 2009, is the problem reported by majority of regular teachers. This was followed by lack of appropriate teaching learning resources, individual problems, educational backlog in the form of insufficient conceptual understanding and basic knowledge, and behavioral problems. Irregular attendance, no cooperation from students and parents, study habits, incomplete home/classwork, no interest in academics and issues related to concentration and behavior were other problems reported by teachers. Very small number of teachers mentioned that they face challenges during teaching learning due to presence of children with disabilities.
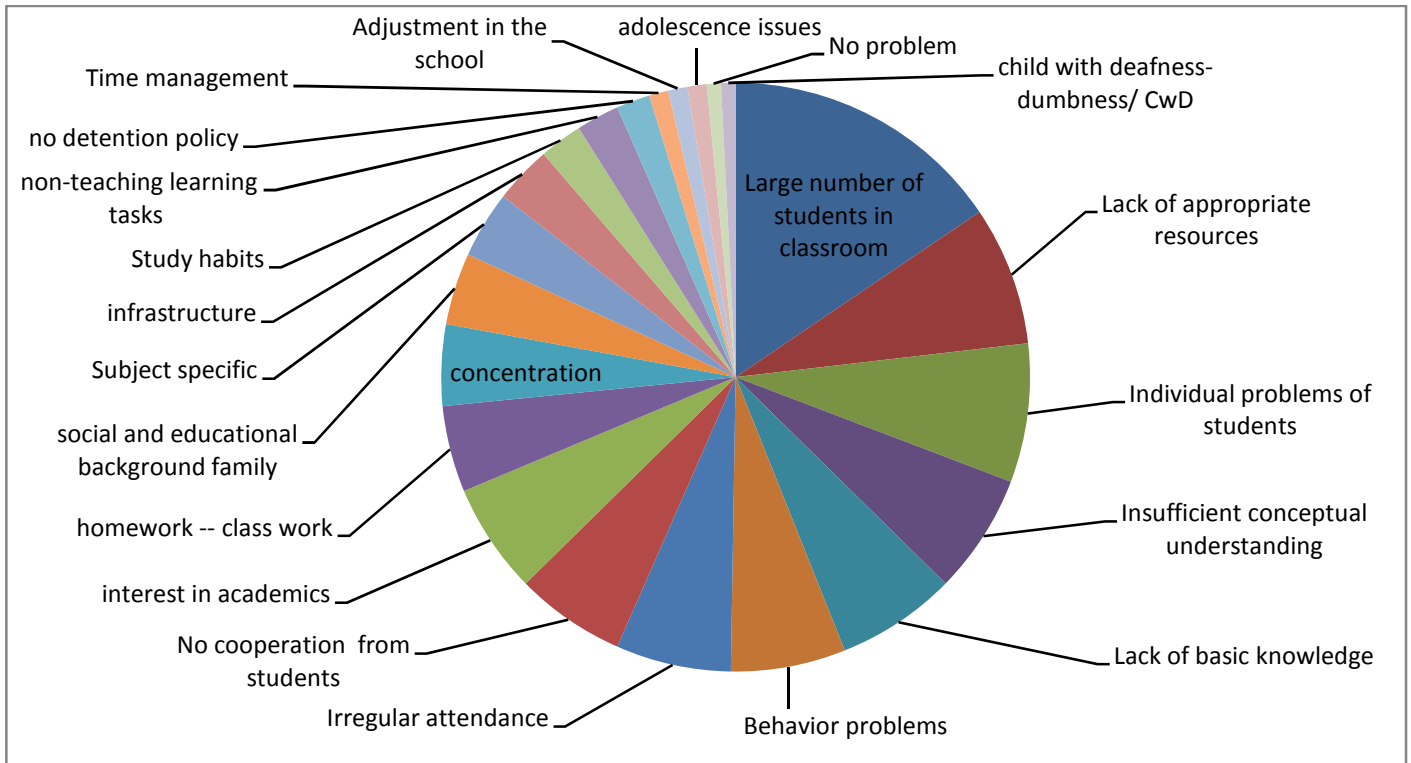
Fig. 1. Problems (non-administrative) faced by regular teachers

Objective 2: Opinion of regular teachers, regarding teaching learning of CwD in the same classroom along with children without disabilities.

Majority of the participating teachers (55 %), was found to be in favor of teaching CwD in the regular classroom along with children without disabilities. On the other hand 39 % teachers were found to be not in favor and 6 % responding teacher opined that there can't be right and wrong answer to this question, as it depends on factors like degree and nature of disability. This was indicated in the figure below.
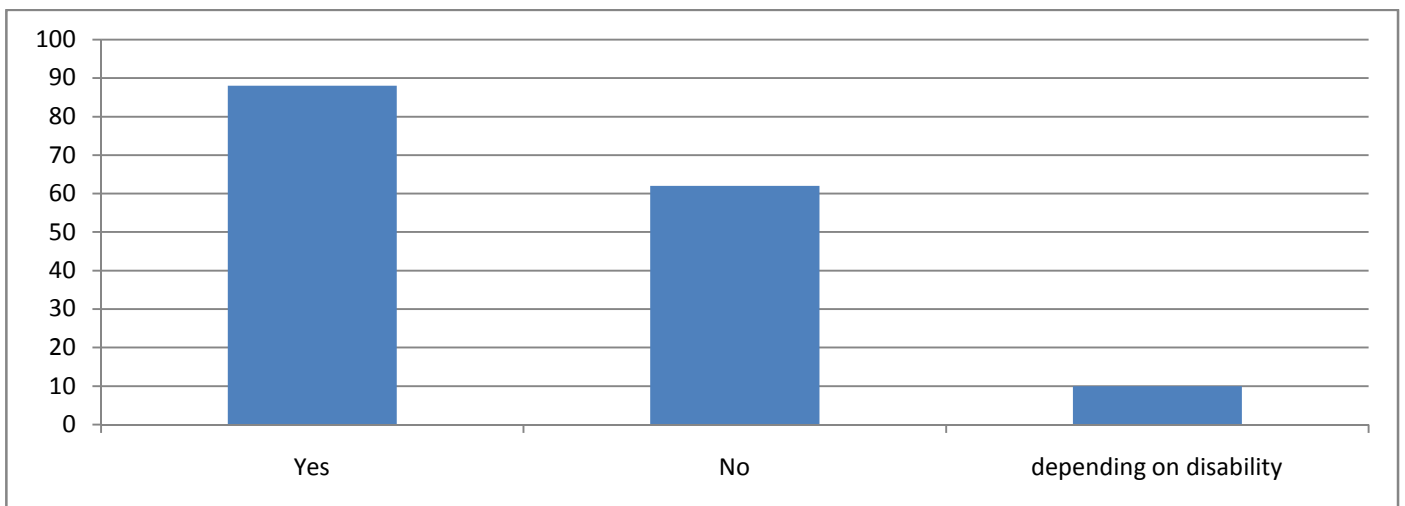
Fig. 2. Teacher's opinion about making CwD study in inclusive classrooms

It was a positive scenario, as despite listing lot of problems in the classroom the majority (55%) of the participating teachers were in favor of teaching CwD along with children without disabilities, in the same classroom. The 10 teachers who reported that it should be based on the disability have detailed that if the nature of disability is cognitive than it would be difficult to teach him/her along with peers without disabilities.

Objective 3: Modification in the list of problems (non-administrative) due to presence of CwD

Participating teachers were asked to justify their opinion on including CwD in the mainstream classrooms, which was qualitatively analyzed in the light of third objective, i.e. whether presence of CwD is adding to the existing problems (non-administrative) of regular teachers, as per their reports. It was assumed during this research that teachers expressing favorable attitude towards inclusion were doing so because they see no addition to their existing list of problems due to presence of CwD. The figure below presents the reasons cited by participating teachers for favoring inclusion.
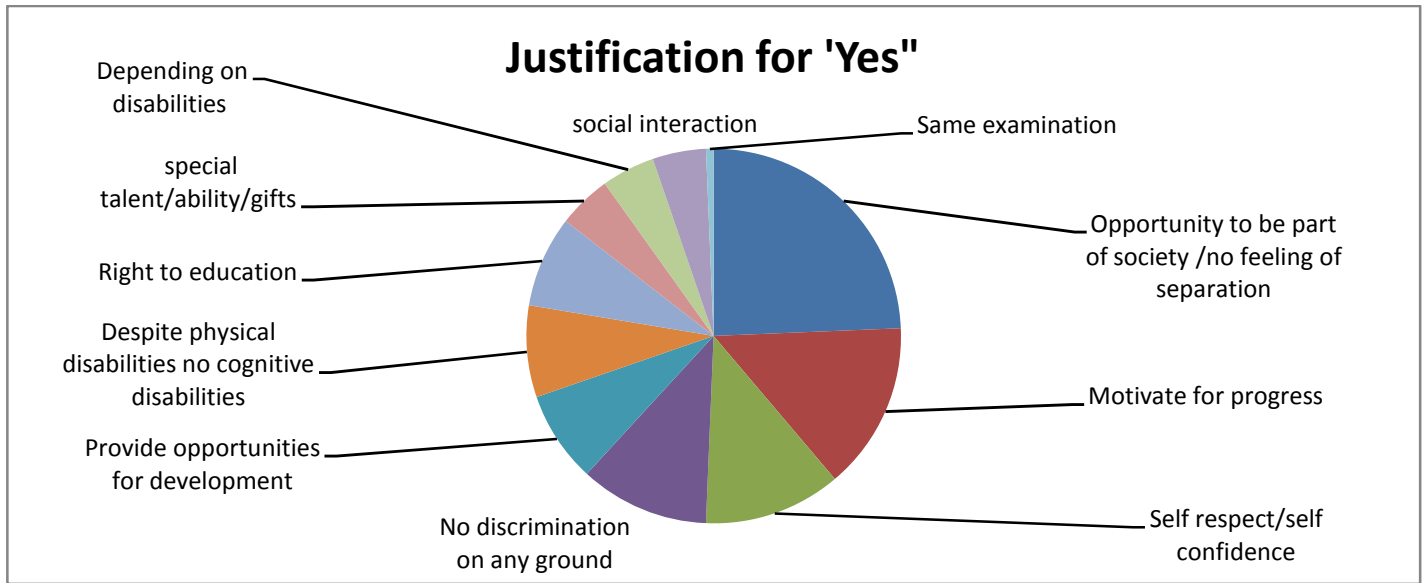
Fig. 3. Justification for favoring inclusion in education

As shown by figure above, the data analysis revealed that most of the responding teachers were in favor of inclusion as they thought this will give CwD an opportunity to be part of society, motivate them for progress and development, enhance their self-confidence, no discrimination on any grounds, right to education etc. This indicates that the thought process of responding teachers was influenced by the discourse of charity, towards persons with disabilities. The need of the hour is to accept and practice discourse of human rights which advocates equal rights for every human being, and perceive that Braille trail or sign language provisions are rights of persons with disabilities just like print or audio or stairs are for person without disabilities. In other words, it can be said that teachers were of the opinion that by supporting inclusion in education, CwD will get a chance to progress, and feel motivated to set higher goals by challenging themselves. The inclusive education settings will provide the opportunity for social interaction that will promote the feeling of acceptance and social interaction which in turn shall facilitate the dispelling of many myths reading abilities of CwD, from the minds of peers

without disabilities and vice versa. None of the responding teachers reported that the presence of CwD will add on to their existing problems, which they face during teaching learning. However, few teachers mentioned that inclusion of CwD should be dependent on the nature of their disabilities; children without cognitive and intellectual disabilities should be allowed to study in the mainstream classrooms.

The figure below, presents the justification given by teachers for responding 'No' to idea of inclusion. The teachers opinion, not in favor of inclusion of CwD, might be the outcome of their perception that presence of CwD in my classroom will add to my problems during teaching learning. This they have expressed as lack of appropriate training. The major reasons listed by responding teachers were CwD require special teachers, special methods and special curriculum, in regular class CwD may feel different/alienated/inferior, their needs may not be addressed effectively, may not get the attention and care they need and deserve and they need more time for study. Few teachers also opined that allowing them to study in

inclusive classroom would be violation of their right to be equal and equity based provisions. However, no additional information was provided in support for this response.
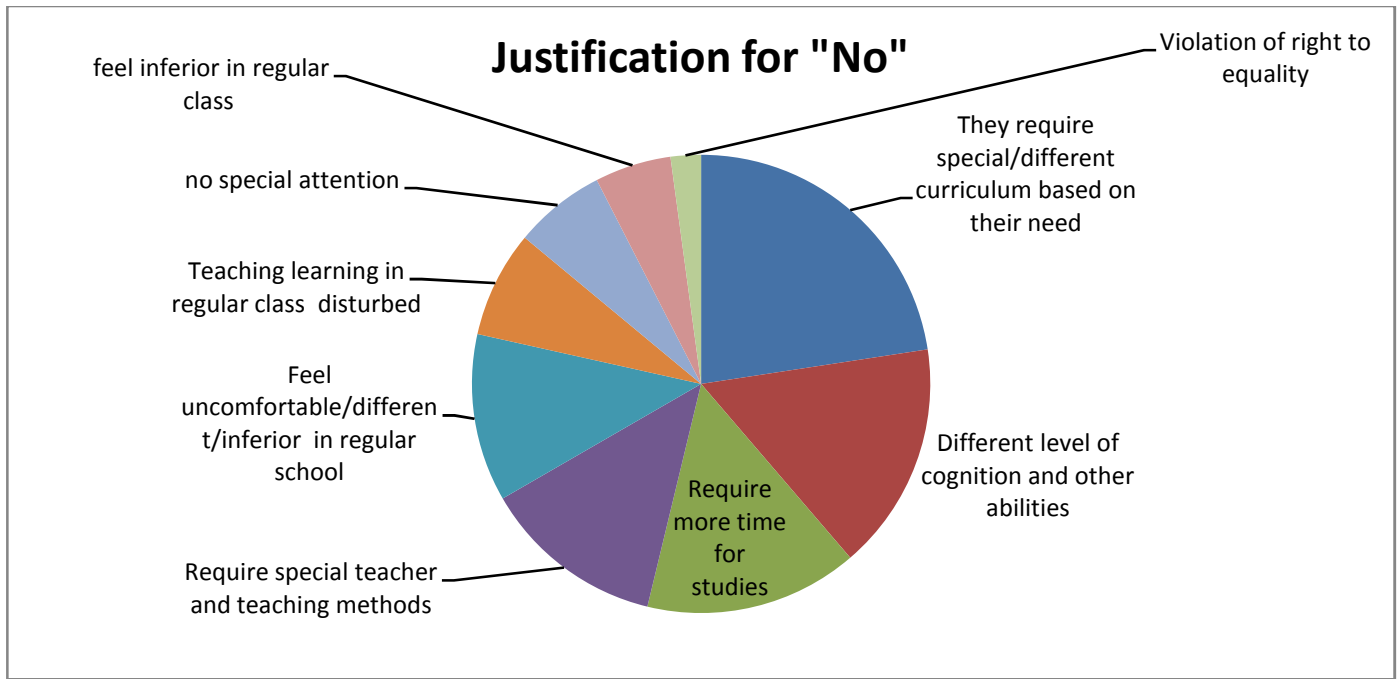
Fig. 3. Justification for not-favoring inclusion in education

Teachers opinion in favor and not in favor of including CwD in the mainstream classrooms were assumed to be related with their perception of addition or no addition to the problems faced by them during teaching learning. In other words teacher were assumed to be favoring inclusion of CwD when they feel presence of CwD may not add to their existing list of problems during teaching learning and vice versa.

5. DISCUSSION

Participant teachers responses generated, long list of problems and challenges faced by them during teaching learning in the classroom, irrespective of the presence of CwD, as shown in figure 1. Attempting to establish a relation between the problems listed and opinion about inclusion of CwD and justification mentioned for their opinion, the future of inclusion appears to be bright. The regular teachers were found to be in favor of educating the CwD, either in inclusive or special setting. The teacher in favor of special schools justified their stance by mentioning that they lack the required training to address the educational needs of CwD, which would be available to them in special schools by special teachers, amidst the presence of peers with similar conditions, which would not make them feel alien. The pre-service teacher education, lack

the necessary inputs preparing teacher trainees for working in inclusive classroom (NCERT, 2018).

The justification given by teachers in favor of inclusion doesn't make any new addition to the list of problems that teachers are already facing during teaching learning; rather the problem of slowing down the pace of teaching learning due to presence of CwD emerged from teachers not in favor of inclusion. Nishimuko, 2014, also found that CwD should receive education in regular schools and challenges such as teacher support and guidance and discriminatory attitudes of community needs to be addressed through careful planning and action.

Inclusive pedagogy practices focus on providing need based educational inputs, use of appropriately modified teaching learning resources, lot of drill and practice, eliciting cooperation from students, parents and other paraprofessionals, comprehending the causes behind the behavioral issues and much more. In an inclusive classroom these practices if implemented sensitively may end up reducing the list of problems faced by regular teachers. Evins, 2015, found that inclusion affects all students in a classroom. Students without

disabilities learn life lessons such as tolerance, brotherhood, helping each other, significance of appropriate behavior etc.

6. RESULT

Regular teachers face a lot of problems while teaching learning in classrooms. The major problems reported were large number of students in the classroom, lack of appropriate teaching learning resources, educational backlog, behavior related issues in general as well as individual, irregular attendance, no cooperation from students and parents etc. Despite the long list of problems faced by regular teachers in the classrooms majority of the participating teachers were found to be in favor of teaching CwD in the mainstream classrooms hence, the presence of CwD may not add to their existing list of problems.

7. RECOMMENDATIONS

- Regular teachers should be provided appropriate training along with onsite support for inclusion of CwD in the mainstream classrooms

- Regular handholding of teachers engaged in inclusive classrooms, is essential for the success of attempts towards inclusive education

- Classes with large number of students should be divided into different sections

- Measures to encourage students to not only regularly attend school but also to take interest and cooperate with teachers, should be planned and taken

- Regular interactions between teachers and parents should be encouraged

8. CONCLUSION

In today's educational scenario, inclusion is latest rhetoric which has seeped at the level of field, and has entered in the vocabulary of teachers, parents and administrators. The time has arrived to empower the regular teachers to shoulder their responsibility in the inclusive education stage. This can be done through need based in-service teacher trainings for teacher already in service. For future teachers, training in inclusive pedagogy practices should be mandatory requirement for entry to service. Presence of CwD in the mainstream classrooms was not perceived as additional challenge by majority of teachers participating in the research, might be an indication towards inclusion becoming reality in not so distant future. The road ahead is difficult but full of hope.

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Paradigms of Development – Nurturing Leaders

Madhumita Guha*

Abstract: Every individual is a 'Leader'. In the journey of education, the learners are developing, to lead. Education is not only to prepare us for a good living, but also for the inner liberation, of the individual. The text based education system, is a burden for the learners. Learning in self observation and self knowledge, is important. Self assessment will enable self-development, which will aid one to take right decision, in life and career in a precise way.

The restless social constitution, in the urban sectors, is calling for 'A Nurturing Methodology', a system in which, the budding souls, would bloom, with the Mentors' special guidance, in a flourishing system, incorporated with the teachings, of the philosophers, as a compulsory part of curriculum learning.

Key Words: Competitive, Creativity, Crisis, Develop, Environment, Leader, Mentor, Mind, Nurture, Philosophy, Relationship & Self Knowledge

AIMS & OBJECTIVES

To show that life is inseparable from education, since both are there from the early years till the end. The learners are experiencing much stress, in learning and in their personal lives, which has stimulated me in writing, the paper. An attempt to focus equally, on the task of education, to impart the individual the "art of living" in a society, as education is about right living .Instead of direct authoritative way of teaching, there is a method of learning, from experience and observation. To show that mind, which is the main object of education, can be developed and advanced. There are different faculties of the mind, and each individual works from different levels, of the faculties. We need to have a clear idea of the mechanism of our mind. According to the Bhagavad-Gita, the undisciplined mind acts as our enemy, whereas a trained mind acts as our friend. In the process of learning, the mind gets connected with other minds, and more so in the teacher – student relationship. Since minds relate to minds in a significant way, we would like to explore the possibility of how interaction with other minds and nature, can enhance the learning process. The journey in togetherness, where there is no fear, there is freedom and awareness, in observation of facts, co-operation and where knowledge, is not only for the immediate present, but for the future, there is a total development, of the mind of the learner.

1. INTRODUCTION

'Educare' is a Latin word and it means "to nourish, to bring up", 'to rise'. This means, educating a child involves nourishing or bringing up the child, according to certain ends or aims. It also means "to lead out" or "to draw out". This means educating a child by drawing out from or leading him out of darkness into light, from ignorance to wisdom. According to Swami Vivekananda "Manifestation of that which is already inherent" should be the motto in educating. He said, "Each soul is potentially divine. The goal is to manifest this divinity within by controlling nature, external and internal". A new faith and vision in the youths will bring about a change in the educational system. There is a manifestation from the lower to the higher. The more we are able to manifest, the human nature, from within, the better do we realize. The more the mind is receptive, to its short comings and limitations, the more will it be able to develop, and disable, the negative habits and tendencies. This occurs to oneself on one's own. Education and personal development, are simply matters of unfolding from within, which will take place, when there is no authority and pressure, so we need to provide, for enabling conditions, for any mind to develop and manifest, its full potentiality as a human being. We need to provide a stimulating environment, for the development of a healthy mind, with confidence in the effectiveness of good values.

In any educational institution there are students from different backgrounds, having different levels of intelligence, having aims in life to achieve. Our mission is to give "fire to their wings" of imaginations such that they can take high flight in education and in life. The former President APJ ABDUL KALAM had said that young ignited minds are powerful source of energy, which is mightier than any resource on the earth, in the sky and under the sea and we must develop and encourage them to bring about revolutionary change and transform developing nation to a developed nation.

2. THE CRISIS

What is the crisis in education? Where is education leading us to? Does education make us aware of our identity and existence, not only as a living entity, but also as nature's best creation? In being unable to be in tune, with the outside natural circumstances, an imbalance is created within, bringing in crisis. The crisis, existing at all level is within and not without.

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In not understanding our true selves, we are getting away from the core and depth, of education. The stress that is in the mind of the learners is in relation to the body, the mind and the surrounding circumstances. We grow and develop, actively participating within an environment. We need to be in alignment, with the changing circumstances, which includes all those factors, that comprises our living. Awareness in taking care of our body, in being fit and firm, and understanding our mind, will enable us to cope with the challenges of life.

Our growth is in relation to the changes, occurring not only within, but also without. Our educational system needs redirection from time to time, according to social, cultural, economic and technological changes. Are we 'living' the education that we are getting in the educational institutions? When there is progress in the field of science and technology, why is there so much of confusion and conflict, in the mind of the educated? The fierce nature of competition, at all levels is an alarming situation. Are we ignoring the 'philosophical' aspect of learning? Education is nothing but a Philosophy of life, which means the outlook of life, how we regard things, events, relationships and values. Every branch like science, law, economics, political science, sociology, literature depends for their flowering upon philosophy that provides a vision. Individual and corporate lives need a solid philosophical base of values, if it is to reach its full potential and function harmoniously.

Among the many drawbacks in our present – day educational system, we may note that we have given great importance to a model, without comprehending the inner spirit and strengths, of a traditional structure. We can have a philosophy of education that we can call our own in connection to our cultural ethos, which could answer best to the requirements of the current social realities, as well as our future needs. India is one of the oldest literate civilizations on earth, rooted in traditions, which are quite different and unique. The various languages and dialects spoken in the different states are indicators of diversity in cultures and need to be preserved. The time is ripe to deepen our understanding, of the ideals that underpin Indian civilization, and investigate the setting of a practical educational system. Our concern is to sharpen and deepen, our understanding, of significant philosophical teachings, that underlie an educational system and to investigate several broad topics, relating to educational practices. The youngsters of today are missing companionship, in the increasing nuclear families, where most of them are, a single child, of parents and are lonely. When such learners enter an educational institution, where they spend most part of their day, look forward to companionship, love and compassion. An atmosphere of enthusiasm and enjoyment are vital for the child's healthy growth and development. To coax and goad them to a set pattern of studies would be depriving them from their innocence and simplicity. When we are asking them to do a certain thing in a disciplinary way we are injecting fear.

Considering the discontentment, that exists in the minds of the younger generation, a new system of education, is required that would be promising, enliven the learners, bringing in peace and contentment. The teaching staffs are over burdened, with the curriculum teaching, and most of them are travelling, long distances, to reach school, which is leaving them tired. Appointment of Mentor Teachers will unburden the teachers, from their routine load. A non formal way of mentoring, aids in the natural development of mind and body. It leaves the mind stress free and fearless two qualities essential, for learning. We need to incorporate teachings of philosopher, educationist Rabindranath Tagore, who had encouraged and introduced, in Visva Bharati, life centric education, where the child enjoyed and participated, in guidance of teachers, not only in curriculum studies, but in festivals and seasonal functions. In this way of learning the learner experiences a passion for learning. Learning is in fulfilment. The learners in competitiveness are partially developing, where as learning in various skills of knowledge, is developing in wholeness.

The poet, educator had advocated, an education for fullness, of being. We urgently require tools to accomplish harmony in the system, which will aid to bridge the gap between school and home, at the same time smoothen the relation between parents, pupil and the teaching staff. Though the learners are intelligent, better in response and expressions, curious and interested in new vistas of knowledge, are falling prey to competitions and the fear of examinations. We are not giving much importance and encouragement to their imaginative skills. Requiring are creative programs to enliven their learning minds. The teacher is the guide and director; he steers the boat, but the energy that propels, it must come from those who are learning. Speaking to the students of various age groups, it is found, that most of them, are above average in their IQ; nevertheless, it is years of habituation that are prohibiting their development. Increasing environmental crisis, social conditionings and peer pressures are hindrances in their development. Although they are curious and interested in new vistas of knowledge, they are giving much importance to career based learning, which is only result oriented. Currently learners are requiring 'A Mentoring Methodology', which will aid, in the development, of their leadership qualities. The present generation's recklessness and restlessness is calling for an educational system embedded in philosophical thoughts, for which required are spiritual retreats in schools and colleges, conducted by the teachers of various religious organizations to deliver lectures in the form of seminars and workshops. This would encourage self competence, in which one improves and develops, which would also imbibe, value education in the process of learning, preparing the learners, to face challenges of life.

Freedom, love and discipline are related to one another. The existing system of education is undergoing a crisis, due to fear of competition. Faced with competition from the very beginning learners are facing stress. Exercising freedom in understanding self discipline has to be inculcated as a part of teaching in the early years of learning. A natural tendency in exercising of freedom of thoughts is common to all. Only in knowing how to carry out it in action is an art. There are certain qualities of a free mind. In the poets words who was conscious about the facts of the surrounding world, 'that a cloud was a cloud and a flower a flower. I still remember the very moment one afternoon, when coming back from school I alighted from the carriage and suddenly saw in the sky, behind the upper terrace of our house, an exuberance of deep dark rain – clouds lavishing rich, cool shadows on the atmosphere. The marvel of it, the very generosity of its presence gave me a joy which was freedom, the freedom we feel in the love of our dear friend.' It is fresh and alert in observing. If our minds be alert in learning, we will experience it in living. Such a mind is an intelligent mind that does not conform to anything without self understanding. The changes in the social structures and the changing human relationships are causing immense impact on the youngsters' mind. They are becoming introvert and are undergoing psychological problems. When a learning mind faces crisis learning and development is slow.

J.Krishnamurti, philosopher and educationist, in his 'Letters to the Schools' mentioned, 'With the very young what is most important is to help them to free themselves from psychological pressures and problems. Now the very young are being taught complicated intellectual problems their studies are becoming more and more technical they are given more and more abstract information; various forms of knowledge are being imposed on their brains, thus conditioning them right from childhood. Whereas what we are concerned, with is to help the very young to have no psychological problems, to be free of fear, anxiety, cruelty, to have care, generosity and affection. This is far more important than the imposition of knowledge on their young minds. This does not mean the child should not learn to read, write and so on, but the emphasis is on psychological freedom instead of the acquisition of knowledge, though that is necessary.' He had mentioned, "The bringing up of a child requires intelligent observation and care. Experts and their knowledge can never replace the parents' love, but most parents corrupt that love by their own fears and ambitions, which condition and distort the outlook of the child. So few of us are concerned with love, but we are vastly taken up with the appearance of love. " He had also mentioned, "The influence of the home and that of the school must not be in any way contradictory, so both parents and teachers must re-educate themselves. The contradiction which so often exists

between the private life of the individual and his life as a member of the group creates an endless battle within himself and in his relationships. "

Each stage has its own requirements. In this context philosopher John Dewey's suggestion is most appropriate and applicable. To make learning part of life as John Dewey had suggested that learning along with activities of daily routine life will teach the learners in a practical way. He had considered that the mind, a process of growth and not a fixed entity, he points out the stages of growth in learning through experiences and doing in the three fold stage of the school periods of life from the psychological points of view.

The children in the age group of five to seven require friendly cooperation of their teachers. Their creative bent of mind requires guidance in friendliness which will aid in their holistic development. Learning in innovation where imagination will sharpen their mind and keep their mind open to new ideas and thoughts. Their mind being less conditioned exists in freedom. Encouraging them to participate in elective activities will develop their knowledge in various skills. Learning with the group mates increases scope of learning. The psychological pressure of learning is lessened, and learning is less restrictive, and more productive. These years of learning establishes and enhances the learners' leadership qualities.

Children in the pre-primary stage are too innocent to appear for interviews and exams in order to get admitted as learning for them is only enjoying, having fun time spent with friends and teachers. They should be introduced to learning very naturally, without fear and their interactions with teachers should be relaxed. Learners of this age group should never be forced to go to school. A non competitive beginning, will keep the budding souls fresh in their later years. As the families in the urban sectors, are shrinking in size a child is victimized, in a conditioned system, in which he survives. He is spending more time with electronic appliances. He is independent, less sharing, and with the result less vibrant and dull minded. They lack confidence in facing a new situation. Though they are intelligent they are not free from anxiety and fear. Why should there be fear in the blooming stage? The increasing electronic modes have taken the place of natural relationships. Learning through direct communication, leaves an impact which media and other electronic modes of learning, can never provide.

A great deal of energy is required in bringing about the changes that we are looking for. A change in the educational system is to be introduced taking into consideration the present social and political scenario. The natural utilization of energy for our thinking capacity will give rise to 'creativity' which will bring in a 'new mind'. Very often there is dissipation of energy in conflicts and competitive attitudes. Conformity also leads to a dogmatic acceptance of beliefs and systems of

learning; we are in a living relationship with oneself and others. A non self-centred being is able to harness the energy in a single stream, which will enable to face the problems of living and serve one's community, with a changed mind. Let the learners minds awaken from a dormant stage to a dynamic stage.

Essential modifications are required to liven up the present classroom pattern of teaching. Over a long period of time we are following a pattern of examinations, tenure of courses, which require revision. With the increasing technological facilities, schooling can be faster and long hours of teaching can be shortened. Though the learners are intelligent, better in response and expressions, curious and interested in new vistas of knowledge, are falling prey to competitions and the fear of examinations. Requiring is imaginative method of teaching, to enliven their learning minds. Speaking to the students of various age groups, I find that most of them are above average in their IQ; nevertheless, it is years of habituation, that are prohibiting their development. Based on changing social scenario, when families are dwindling and parents are in hectic schedules of long working hours, the job of mentors are becoming more and more essential, as they are the torch bearers, for the learners and have to guide and motivate them . We require teachers' training programs, in which the learners' self inclination and motivation, is given a priority. The state and the central government, require restructuring, the roles of their teachers, and train them to teach innovatively. We have to introduce learning in the way as John Dewey had suggested, catering knowledge, in a palatable way, is the job of an educator. The most influential thinker on education in the twentieth century, John Dewey's contribution lies along several fronts. I find his methodology practical for the learners of all times. His attention to experience and reflections, democracy and community and to environments for learning has been seminal. His idea was that children came to school to do things and live in a community which gave them real guided experiences which fostered their capacity to contribute to the society. Mathematics could be learnt via learning proportions in cooking or figuring out how long it would take to get from one place to another by mule. History could be learnt by experiencing how people lived, geography, what the climate was like, and how plants and animals grew, were important subjects. The educator believed that schools should teach students how to be problem solvers by helping students learn 'how to think' rather than simply learning rote lessons about large amounts of information. According to his view schools should focus on judgments rather than knowledge so that the school children become adults who can 'pass judgments pertinently and discriminately on the problems of human living'. He believed that schools should help students learn to live and to work cooperatively with others. He added that students should participate in decisions that affect their learning. I believe that the impulse for educational reform does not come in the first place from any abstract recognition of the deprivations suffered by the young. It arises from reactions to widespread changes in the conditions of life which affect all age groups. The child brought up in a tenement or an apartment in crowded city, streets has different needs and faces more complex and perplexing problems than the child on a family farm.

John Dewey emphasized on understanding the nature of human experience. His theory is that experience arises from the interaction of two principles - continuity and interaction. A continuity point at each experience a person has which influences his or her future, for better or for worse. Interaction says about the influence of situation. For example the experience of a lesson, will depend on how the teacher arranges and facilitates the lesson as well the learners past experiences of similar lessons and teachers. He said that once there is a theory of experience then as educators one can set about progressively organizing the study material in such a way that it takes accounts of students' past experiences, and then provides them with experiences or cite examples which will help to open up instead of shutting down a person's contribution to society.

The educator had examined his theory of experience in light of practical educational problems, such as how much freedom vs. discipline is to be used. There was a strong emphasis on the subjective quality of a student's experience and the necessity for the teacher in understanding the students' past experiences in order to effectively design a sequence of liberating educational experiences to allow the person to fulfil their potential. He pointed the fact of many who hated school. He said that education must take into account the unique differences between each student. Each has his own memory of experiences. In standard curricula, each student will have a different quality of response. Thus teaching and curriculum must be designed in ways that allow for such individual differences. This I find most relevant in the present context when learners are facing stress in learning. They should keep the mind open to new facts and ideas. Even a small group of students become the instrument of his personal importance if he uses authority as a means of his own release, and if teaching is for him a self-expansive fulfilment.

In highlighting the changes required in the present system in the formative years, what is required is a natural way of getting educated. To understand the child and direct him accordingly, is the work of parents, and the best counselling that a child requires at the early stage of life, is within the family. Learning begins at home. Family thus provides a link between emotions and intellect and passes on values and standards of conduct. In ancient times in India, there was the 'Gurukul' system of education, which included learning in all aspects of life, in the learner's developing years though caste preferences were its shortcomings. We require a general mode and pattern in our

present system. For an overall development much depends on whether the education given in the educational institutions is backed up by the education given at home. There are many constructive allocations as well as distractions in ones daily life. How the mind should accept from the 'buffet' of ideas and opportunities? Are the distractions causing the crisis? We have to think of a self – education system, which will be self - evaluative. The learners are to use their minds in self-knowledge and understanding. If there is discipline, there will be total focus in ones thought, actions and less of confusions.

A NEW SYSTEM WITH A NATIONAL BACKGROUND –

METHODOLOGY DEVOID OF COMPETITION

We had a systematic way of teaching and learning long before the advent of the British in India. The system in the present is more or less the pattern introduced by the British. It has been 72 years, and the real meaning of 'freedom', is not explicit to most of us. To take the nation ahead, we have to awaken ourselves to a 'living' educational system. New education requires more attention not less to subject matter, and to progress in technique, that also involves an imaginative vision. Going ahead in the field of education, is not disregarding the past, but accepting all its good and keeping this in mind, is how an educator plans.

What is it in the present system, which can be a 'torch light' for the coming generations? Keeping in mind that education is not concerned with the immediate present but a 'vision' for the coming period, every educationist as well as learner has to come up with something, which will be of use in the future. Every major philosopher since Plato has recognized that the primary function as a philosopher is as John Dewey had mentioned – to shed some light on the path ahead. We require a visionary educational system where the learners are made cognizant about their interests and goals. An educational institution should be bubbling with new ideas. We should maximize organizing skills, from the very beginning, in order to avoid crisis, in professional and personal life, thus enabling them to face the inevitable role of competition in a constructive manner.

The choice and combination of subjects should be in accordance with the inclination, as well as the ability of the student. We have had a common syllabus for all students in the classroom pattern of teaching. The present scene is classrooms are crowded with students learning the same combination of subjects in disparity. In order to facilitate learning according to ones individual capacity, each section should be providing different combination of subjects to avoid disparity and dissatisfaction due to lack of interest. For example a section of students interested in mathematics and English may not be interested in history, which may be taught in a different section. Students should be given an opportunity in choosing combination of subjects. Their learning in interests in their choice of subjects would make the learning process stress free. John Dewey, in his book 'How We Think', mentions – "There is no greater enemy of effective thinking, than divided interest. This division unfortunately is often produced in school. A pupil gives an external, perfunctory attention to the teacher and to his books and lessons while his inmost thoughts are concerned with matters more attractive to him."[4] A close-knit connection between home and school will solve the existing disparity. Children are cognizant about their image. They have to discover their own interests by themselves. As learning is natural to a human mind, a child should consider learning as one takes food, when one feels hungry.

We need to reinvent methods in the educational system to meet the present day challenges, as there seems to be a great dissatisfaction at all levels in the educational system. Education needs to maintain the sensitive balance of originality and habitual responses. One thing that again and again came in the mind of J.Krishnamurti was that the students studying only to pass examination and get a good job fall into the trap which the past generation had created. There is a fear existing at all levels. One is occupied with one's ambition which one worships for success. JKrshnamurti said that learning is constant. Teachers and parents should engage the learners in various jobs in order to inculcate interests in responsibility. Senior school students and college students should involve in the functioning of their institutions. I see that the new generation is exposed to a world full of new discoveries and the job of an educator is crucial. I feel that learning is not only in student teacher relationship but also in relation to the intelligent functioning of the entire system. We need to improve organizational skills in the present educational system at various levels. Education in India emerged from the social organization of the Indo-Aryan society which was very highly organized. I feel that at present, the administrative system of the educational institutions can be effective in using technology in the service of the ideals. Learning in an institution, which has an advanced organized system will develop better effect within the institution and will benefit learners involving them in the functioning of its administrational system, would teach them managerial skills and build harmonious relationships.

In educating a child's deep insight, understanding is required. Education can encourage the child to understand his relationship to people, to things and to nature. If the educator and parents fully understand the true significance of relationship by their attitude, conduct and speech they will surely convey to the child in a few words the meaning of spiritual life without much explanation. In modern times of communal unrest and disharmony teaching the significance and importance of all religions can contribute in developing

respect and tolerance towards other cultures. We need to take care that we may create an appropriate environment for our children. In my interaction with students of different backgrounds belonging to rural and urban sectors I find that learners in very many instances have a different environment at home and at school. Their mentoring requires compassion and suitable conditions. Whether economically rich or poor their growing up in inspiration, will enable them to take flight in life. The increasing technocratic life style is calling for a natural way of living and learning in freedom, love and creativity.

3. CONCLUSION

We had a systematic way of teaching and learning long before the advent of the British in India. The system in the present is more or less the pattern introduced by the British. India is a nation enriched in spiritualism, one of the oldest literate civilizations on the earth, rooted in traditions. We have to include the rich past in the present system. Education same as life is in continuation of the past to the present and will be carried over to the future. It is a gradual process occurring in rhythmic continuity in a dynamic and energetic pattern. Education is not only for endurance, but also for better use of leisure time and a better way of living bringing in refinements in one's personal, social and cultural life. In the present system of education, it is becoming more and more critical in providing people with skills in life and society. We learn from experiences whether positive or negative. Thus, every experience in some way influences, all potential future experiences, for an individual. There is a continuity of experiences as each experience stored in one's mind is carried on into future whether one likes it or not. Any situation is different because of unique individual interests and differences, as for example one student might hate school while another might not. The thing important for educators is that although they do not have control over a student's experiences, they can try to understand the child in the context of the dynamic present situation. An educator having good insight into the effects of experiences, which students bring along with them enables to provide quality education, which is relevant and meaningful for the students in the coming years of their lives. In maintaining harmony in the community, learners' contributions towards communal services, in the form of visiting local hospitals and visiting the aged in the old age homes and hospitals would inculcate values and fellow feelings in the learners. In developing such programs in the educational institutions from the very beginning for the different age group of learners, would develop the quality of fellow feeling, which otherwise is diminishing these days. Such programs are being taken up by several educational institutions, including, the management institutes. For example, S.P.Jain Institute of Management in Mumbai has been organizing a program, as a part of the management course, in mentoring children, from local rural sectors. The Management students are asked to visit the learner's home and teach. This makes the management learners aware, of the hard life style, of those aspiring learners, from the lower income strata, encouraging them for further studies, and general progress in life and learning. There is much to learn through community services, which should be made, a compulsory part of the curriculum, in schools and colleges.

The increasing population of street dwellers is calling for a system which will first and foremost make learning be accessible. We can arrange mobile schools for those street dwellers who cannot afford schooling. There are mobile schools already functioning in some parts of the country for example, the one in Tirupur, in Tamil Nadu by Durai Charitable Trust a voluntary social welfare organization headed by Mr. S. Duraiswamy. CEO of PGC Industries Ltd gives free non formal education to the child labour street children and destitute children with full support of SWITCHERS A.SWITZSERLAND headed by Mr. Robin Cornelius the CEO.

Those children who are wasting their day begging for their families, if provided with a day's meal would be interested to join the mobile classes. These programs could be made functional as part of charitable work by the senior students of various private and government schools. Learning is in developing the community of which they are a part. The much effort in learning and the stress experienced is due to lack of development in society at a large. If we are to progress we have to eradicate social imbalance by developing an awareness among our youngsters in consideration and in responsibility towards fellow beings.

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Effectiveness and Quantification of Research Articles and Research authors through Indexes and Metrics

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Abstract: The word "Research" means 'searching again and again' is used in order to solve problem faced in day today activities as well as make world a better place to live. A number of research articles are submitted and published on day basis. The quality of research in the research article and to find most eminent researcher, certain indexes and evaluative metrics are used. These indexes not only help to evaluate research work and researcher, but also help naïve researcher to continue the regime of research. Citation, referencing and plagiarism are often used words with research. The article covers sources, ways and tools used for doing citation, referencing, checking plagiarism and issues and challenge faced in indexing. In this article SCI (Science Citation Index, SCIE (Science Citation Index Expanded) and H-index (Hirsch-Index) are discussed in detail. The article will also answer the top journal used in computer science and engineering discipline.

Keywords: SCI, SCIE, Indexing, Citation, Plagiarism, referencing, h-index.

1. INTRODUCTION

The evaluation of research paper is very long and tedious job. In order to simply the work naïve researcher, reviewers and eminent scientist look for certain metric to identify the quality of research work and researcher. These metrics includes indexes for identifying researcher background. Citation is used to check the popularity of the researcher Article. There are two kind of indexes. First one is used to identify eminent researcher and these indexes includes h-index, g-index, i10-index and e-index. Usually a single research article is contributed by many authors. So, In order to evaluate the quality or work presented in the research article is categorised into further three indexes. These indexes include google scholar, Scopus, SCI, SCIE, ESCI DBLP etc.

This paper basically shed a light for naïve researcher to differentiate between the indexes and What are the major term included in writing a good research paper. Section 1 contains H-index overview with comparative analysis with g-index i-index and e-index and drawback of H-index. Section 2 contains brief description on google scholar, Scopus, SCI, SCIE indexes with pointing out the drawbacks of SCI journals. Section 3 introduces the top 10 journals of Computer science engineering journals. Section 4 discuss the Issues and

challenges involved in evaluating the research work of Scientist.

2. LITERATURE SURVEY

2.1. Author level Metric

2.1.1. H-Index (Hirsch index)**:** It was proposed by J.E. Hirsch.The impact of a particular scientist can be measured with the help of this index. The calculation of h-index involves number of publications of a scientist that received 'h' or more citations for each 'h' publication.This could be understood with a scenario in which a scholar with an h-index of 10 had published 10 papers, each of which has got cited at least 10 times.The h-index of an individual's may very from one database to another. This different lies as the databases index different journals and which covers different years from when they are originated. For Example, Scopus considers work from 1996 or later, while the WoS (Web of Science) calculates h-index using all years since 1965.

How to calculate H-indexbasic Metrics followed by Perish or Publish:

1) **Total number of papers published by author:** This involves the number of papers returned by Google Scholar in reply to a query.

2) **Total number of citations research paper achieved:** The sum of the citation of all the published paper of author.

3) **Calculation involves average number of citations per paper:** The total number of the all citation across all papersdivided by the total number of research papers published. The median and mode are also calculated.

4) **Research Paper having MultipleAuthors**: For such papers number of citations per author is calculated.To calculate this parametereach paper and its citation count is divided by the number of authors.This, will give normalized citation count per paper. The normalized citation counts are then summed for all papers and this

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will give the number of citations per author over the result set.

5) **Year-wise citations per author:** This is the number of citations per author divided by the number of years covered by the result set.

6) **Calculation Normalized author count:** For each and every paper, 1/author count is calculated to evaluate the normalized author count for the paper. The counts are summedfor all papers to give the number of papers per author.

7) **Need to calculate average number of authors per paper**: The sum of the author counts across all papers,

divided by the total number of papers. The median and mode are also calculated[1, 2, 7].

Tools available for finding H-Index-- Finding h-Index using Publish or Perish

1. With the help of Publish or Perish site which uses data of Google Scholar h-index can be calculated easily.Google Scholar contains citation metric.

2. Publish or Perish is available with Windows and Linux formats. This can be downloaded at free of cost from the Publish or Perishwebsite.

3. By simply entering author name h-index can be calculated.

TABLE 1: Comparison of H-index, g-index, i-index and e-index

Metric/Indexing Type	h-index	g-index	I-10 index	e-index
Author	Jorge Eduardo Hirsch [8]	Egghe, L. [6]	Google scholar	Chun-Ting Zhang
Year	2005	2006		2009
Evaluation of Researcher	combines an assessment of both quantity (number of papers) and an approximation of quality)	looks at overall record	i10-index indicates the number of academic publications an author has written that have been cited by at least ten sources	The aim of the e-index is to differentiate between scientists with similar h-inds but different citation patterns. Improvement on h-Index
Impact	favors academics that publish a continuous stream of papers with lasting and above-average impact.	g-index allows highly-cited papers to bolster low-cited papers	------	Cover the information Loss in H-Index
Tools	Google scholar & Web of Science, Publish or Perish	No tool	Google scholar	Publish or Perish

h-index rewards consistent stream of high-impact publicationsAn academic cannot have a high h-index without publishing a substantial number of papers. However, this is not enough. These papers need to be cited in order to count for the h-index. Hence the h-index favours academics that publish a continuous stream of papers with lasting and above-average impact.

2.1.2. g-index
The g-index is calculated based on the distribution of citations received by a given researcher's publications. Articles are first arranged in a descending order and the number of citations are

calculated. The g-index is the unique largest number which top g-articles have received. It looks at overall record. A g-index of 20 means that the academician has published at least 20 articles that combined have received at least 400 citations.g-index allows highly-cited papers to bolster low-cited papers. Roughly, *h* is the number of papers of a certain "quality" of citations having a threshold and thisthreshold rises as h rise whereas*g* allows citations from higher-cited papers to be used to bolster lower-cited papers in meeting this threshold. Therefore, in all cases g is at least h, and is in most cases higher. However, unlike the h-index, the g-index saturates whenever the average number of citations for all published

papers exceeds the total number of published papers; the way it is defined, the g-index is not adapted to this situation[6].

2.1.3 e-index: It **is** for evaluating highly cited scientists for comparing precisely the scientific output of a group of scientists having an identical *h*-index.

2.1.4 i-index: i10 index was introduced by google in July 2011 for google scholar. The h-index is having strong discipline bias. The i10 index shows authors publication which are cited atleastby ten sources.

2.2. *Journal Level Metric*

2.2.1. SCI and SCIE: The Science Citation Index was firstly introduced by Malim in 1968 [6]. It was originally designed as retrieval tool, which was reported to be very effective.In 1972, first Science Indicator report is generated. The goal of this effort is to set indices which help in identifying strengths and weakness of U.S. Science and Technology.SCIE is the largest version of Science Citation index that covers over 8, 500 journals across 150disciplines.SCI Science Citation Index), SCIE (Science Citation Index-Expanded) and SSCI (Social Science Citation Index) are most cited databases. The assessment and evaluation of journals is done on the bases of journal impact factor(JIF) or shorter impact factor (IF) given by Garfield in 1955.*WoS*is the electronic version of SCI which links author publication by journal or by citation[7].

2.2.2. Impact factor: They are used to compare the popularity of journal by calculating the number of citations of last two year. The journal having larger the impact factor will be ranked higher. It is also one tool to compare journals in a subject category[7].

Calculation used for calculating Journal Impact Factor

$$IF_y = \frac{Citations_{y-1} + Citations_{y-2}}{Publications_{y-1} + Publications_{y-2}}$$

Pointers

1. Not all journals have impact factors. They must be indexed in *Web of Science* to have an impact factor

2. A journal has only one impact factor, but it may be listed in more than one category

3. A journal impact factor should not be looked at in isolation, but in comparison to other journals in the same category

4. Impact factors vary across disciplines

5. A five-year impact factor may also be used in some disciplines.

Impact factors can be used to:

- identify journals in which to publish

- identify journals relevant to your research

- confirm the status of journals in which you have published.

2.2.3. *Difference between SCI, SCIE and ESCI*
SCIand SCIE journals have equal importance as evaluation criteria and acceptance criteria of both the journal is same. One major difference between the SCI and SCIE is that all journals of SCI are available in SCIE but reverse is not true. Difference lies in storage media, Because of space constraint in SCI a few papers are stored. This SCI journals are available in CD/DVD Format only. In contrast with SCI, all SCIE journals are available online[4, 10].

ESCI (Emerging Sources Citation Index): It is also a citation index started in 2015 by Thomson Reuters and further accepted Clarivate Analytics. It supports peer-reviewed publications of regional field having scientific importance. ESCI as compare to SCI and SCIE has less popularity and weightage.

2.3 *List of some known databases[4]*

S. No	Databases
1	SCI (Science Citation Index)
2	SCI-E (Science Citation Index, Expanded)
3	SCI (Social Science Citation Index)
4	A&HCI (Arts & Humanities Citation Index)
5	Scopus (EU)
6	Google Scholar (GS)
7	ProQuest CSA (SAD)
8	Index-Copernicus (Poland)
9	IEEE Explore (USA)
10	ESCI (Emerging Sources Citation Index)-2015
11	Directory of Open Access journals (DOAJ)
12	SCIndeks (Serbia)

3.   ISSUESAND CHALLENGES

3.1 *Issues Involved in Indexes which evaluate researcher impact*

3.1.1 The h-index is less responsive to low cited and highly cited papers of the researcher.

3.1.2. The indexing does not support researcher having one big contribution to the society. So, a scientist with low number of papers having high citation will be having less h-index value.

3.1.3 Naïve researcher having very good research will not get good H-index score[1].

3.2 Issues Involved in indexes which evaluate research article Impact

3.2.1 SCI (Science Citation Index) as a data source for indicators of International scientific activity limits its dimension to English-speaking Countries.

3.2.2 The coverage of SCIappears to be incomplete in case of journals for the countries with non-Roman alphabets and Soviet.

3.2.3 It covers only 10 %of the journals listed in BLLD (British Library Lending Division)This library does exhaustive coverage of world scientific literature[3].

4. RESEARCH DATABASE FOR COMPUTER SCIENCE AND ENGINEERING.

S.No	Journal/Database Name
1.	IEEE Xplore
2	Springer
3	Elsevier (Science-direct)
4	Taylor and Fransis
5	Wiley
6	World Scientific
7	Plos
8	ACM(Association of Computing)
9	IOS (Integrated Computer aided Engineering)
10	UCLA (Journal of Statically Software)

5. CONCLUSION

In order to differentiate between effective and commutable research and researcher we definitely need indexes. The library and the journals databases need to enlarge their scope in terms of countries participation and language. There should be a criterion in h-index which promote researcher having less papers with high citation value.

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Severe Acute Malnutrition (SAM) in Children of India

Tarunim Sharma*, Dr. Menal Dhaiya**

Abstract: India has the maximum number of the malnourished children in the world. Among 1 in 3 are malnourished in India according to the 2011 census. These children if not treated properly develop various disabilities. According to a survey 36 percent children under the age of 5 years are underweight. The Government has setup Aaganwadis which leaving other activities also perform the check-up of these types of children and refer them to Nutritional Rehabilitation Centres for proper nourishment and Treatment. Regardless of these many schemes there is a problem of low bed occupancy in NRCs which require a proper online referral management system.

Keywords: Malnourished Children, Aaganwadis, NRCs, Underweight.

1. INTRODUCTION

Malnutrition results from a poor diet or inability to soak up nutrient. Malnutrition may be a condition which may be simply known in kid but five years older by distinguishing some standards like Middle upper Arm Circumference (MUAC), Weight, oedema and Height. Oedema may be a condition characterized by Associate in nursing more than watery fluid collection within the cavities or tissues of the body. Diseases like Anemia and malnutrition conjointly contribute to malnutrition. Signs of malnutrition in kids embrace lack of appetence, fatigue and irritability, inability to concentrate, continuously feeling cold, loss of fat and body tissue and better risk of obtaining sick pretty simply and taking longer than expected to heal.

Severe Acute malnutrition (SAM) is outlined by terribly low weight for height (Z-scorebelow-3MountRushmoreStateof the median United Nations agency kid growth standards), or a mid-upper arm circumference <115 mm/<11.5cm, or bythe presence of two-footed nutritionaryO.

Work in Aaganwadis

The Aaganwadiprogramme was launched under ICDS. The Integrated child Development Services (ICDS) was launched on 2 Oct, 1975 with 33 projects all over the country. Within the state of Old Delhi, initial ICDS project was launched in Jama Masjid, a milestone project. The Govt. of India has sanctioned 95 projects for the territory of Old Delhi since 1975-76 with 11150 Anganwadi Centres.

Objectives of this scheme are as under:-

- Torefine and upgrade the nutrition and health status of children within the age range of 0-6years.

- To lay the basis for social, physical and psychological development of thechildren.

- It lessens the cases of carnage, lethality, withdrawing the school and diseases which leads to deficiency.

- To obtain productive coordination and implementations among the departments to encourage development of child.

- To enrich the knowledge of mother to visit once the health center and fulfill the nutritional demand of the children through appropriate nutrition and care.

The Aaganwadicentre typically provides basic medical facilities in the communities of India. These basic activities include advising regarding contraceptive andreserve of education about nutrition and supplementation we can give. They also motivate families for family planning, educating parents related to their child growth and development. They also perfom quick surveys of all families and conduct preschool activities and education.

Anganwadi workers needs to take care of the kids below 5 years at anganwadi, prepares alimental food for the kids in step with the menu given to them. Apart from this in the anganwadi health check also being done for the kids by the Doctor's from the respective Primary Health Centres (PHCs). Once in an exceedingly month the anganwadi employee needs to take the kids for the health check up.

Based on the regular checkups of the child these aaganwadi workers refer the child to the Nutrition Rehabilitation Centres on the basis of the condition of the child. This checkup involves checking up of the Oedema, height, weight and MUAC (Middle Upper Arm Circumference) of the child.

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These Aaganwadi workers take the help of the PHCs when needed to detect malnutrition and other factors in the villages. They also go to homes in villages to take checkup of kids and create awareness about this and other health precautions in the parents and family.

Nutrition RehabilitationCentres (NRC)

Nutrition Rehabilitation Center (NRC) is a center which is established by joint efforts by Department of women and child development and Department of Health. It is units in wellness where children having acute malnutrition are admitted and diagnosed .Children are given entry according to the admission criteria being designed and dispensed with medical and nutritional remedial care .Once they are dispensed from the NRC we have to make sure kids to be on the same nutritional programme until or unless he/she accomplishes the discharge criteria being outlined for the program.

Not only restorative care, special attention is given specially on timely, appropriateand tolerable feeding for kids and also enhancing the knowledge of mothers and custodian for complete age caring being accepted by them and practice for feeding. Not only are these attempts made to build their competence through encouraging them so that they are able to identify the health and nutrition issues in their children.

The Referred children from the NRC are brought here and they are admitted and given proper care and nutrition in the presence of the mother. The recommended admission period varies from 2 to 6 weeks. The child is then discharged after he/she is fit in terms of the standards set by the government.

I. What is SAM?

If there would be a severe malnutrition it leads to disastrous epidemic. Worldwide, somefifty-five million kids below the age of 5 suffer from severe malnutrition, and nineteenmillions of those suffer from the foremost serious kind-severe acute

malnutrition. Every year 3.1 million kids die of malnutrition which is really a big figure.

Objectives of SAM a facility-based management

- To provide wellness program and to decrease the rate of transience among the children having severe and acute malnutrition specially those bearing medical complications.

- To rise substantial and cognitive growth among children with severe acute malnutrition (SAM).

- To boost the potential of feeding mothers and substitute care takers for providing relevant caring and feeding exercises for infants and children which are in growing stage.

- To ascertain the communal reasons that leads to the children falling under severe acute malnutrition.

Services provided at thefacility

- Observing children and giving them 24 hour care.

- Remedial measures given for medical problems.

- Giving corrective feeding.

- Delivering audio visual incentive and teaching psychic care andnurturing.

- Evaluating socially the family to discover and inscribing the contributingfactors.

- Guiding and directing on appropriate feeding, care and wellbeing.

- Finding out and investigating the children discharged from the centre.

- Manifestation and exercising by performing on the preparation of energy thick child foods using restrictedly available, ethically acceptable and inexpensive and modest fooditems.

2. PROBLEMS FACED BYNRCS

The main issue faced by these centers include the lower bed occupancy rate which is just over 50 percent. This is also due to the poor referral management system which will be solved by this mobile application. This problem also exist due to the fact that many Aaganwadis tend to skip the fact that MUAC and other standards need to be followed strictly to identify the SAM children. These complications even exist at the Community health centers also known as CHC.

After the discharge of a particular child there is a standard set by the government that about 4 follow-ups are necessary to be done to check after care of the child at his/her home. The follow-ups are to be scheduled in about a difference of approximately 15 days, due to poor follow-ups system NRC centers are unable to manage this follow-up system properly. Moreover, even if a child is not given nutrition properly at home and his/her follow-ups are not done, then the proper measures taken to treat him/her are in vain as the child may fall ill again.

Due to the poor offline system, these centers or any authorized Govt. body is not even to able to track past records properly as there is no system that keeps the past records properly.

- **Admission & DischargeCriteria**

For the children's below 6 months of age	
• **Criteria for Admission** • Breastfeeding Problem: the infant is too weak to suck • The mother has not enoughmilk • Bilateral pittingoedema • W/H or W/L <-3 Z score (WHO-2005standards)	• **DischargeCriteria** • Child is gaining weight on breast milk alone, regardless of current weight orW/H%. • Any kind of medicalComplications absent. • Absence of Bilateral Oedema for at least past 10 days.
• For children <6 months of age suffering from severe acute malnutrition, prominence is laid on assisting and supporting breastfeeding through counseling and redeeming of lactation in mothers having lactation failure using supplementary suckling technique (SST).	
Children between age 6 months upto 60 months	
• **Admission Criteria** • W/H or W/L <-3 Z score (WHO-2005standards) • MUAC<11.5cm • Presence of bilateraloedema	• **DischargeCriteria** • 15%WeightgainfromAdmissionWeightorweighton the day free ofOedema. • Absence of Bilateral Oedema for at least 10days. • MedicalComplications is not there.

- **Impacts of Malnutrition on theGrownups**

Below are listed some of the major problems that the grownups with history of Severely Acute Malnutrition may experience

- **Cachexia:** Cachexia will produce serious weight- loss, reducing of muscle mass and bones. This additionally creates the skin to return to be dry and inelastic. Cachexia will enhance the danger ofstress, ulcers similarly as hipfractures.

- **Organ Failure:** Malnutrition may likewise produce swelling, anemia, jaundice, liver, urinary organ and heart disease. This may cause respiratory disease, intestinal flu similarly as urinary systeminfections.

- **Affects Brain Development:** Malnutrition will bring about apathy, anxiety, introversion, self- neglect and conjointly damage. This also impedes brain development in afflicted children once as compared to varied alternative children of a similar age.

- **Concerns related to reproduction:** Malnutrition will scale back fertility in an individual. If this can be present while pregnant, it may trigger diabetes mellitus, heart drawback, and inferior growth similarly as stroke in the child at a later stage of life.

- **Low Immunity:** Malnutrition can also effect of an individual to fight diseases. The person with low immunity can easily fall for prevalent diseases and is not able to heal easily. This is a major problem in individuals who have a history of malnutrition.

- **Stunting:** Stunting in youngsters is that the long results of malnutrition on children. This might stop the regular growth of children likewise as limit their elevation and conjointly weight. Stunted development is irreversible if the child is chronically starved and may prevent his regular height, weight likewise as mind development. This is very horrible outcome of a child with history ofmalnutrition.

- **Solution for the poor offlinesystem**

The Problems that these two units face can be fixed by using a Mobile Application that tracks every activity of the child from initiation at the Aaganawadi to referral, admission, dischargeand follow-ups at theNRC.

This Mobile Application **"POSHAN"** is a one stop solution for all the needs of the two parties Aaganwadi and the Nutrition Rehabilitation Centres. Through this application we aim to ease the hectic offline task of the two parties by providing a fast-online referralsystem.

- Through this application any Aaganwadi can register itself and check for any child's malnourishment by entering the required values. If the child sis found malnourished a referral can be created. The referral requires a valid Aadhaar number of the parent which prevents spams to certain extent. Some Machine Learning algorithms can also be applied in the future to preventspams.

- The referral created can be sent to the closest NRC which is listed in the application according to the distance measured between the particular NRC and Aaganwadi.

- The Aaganwadi can also update already created referrals which are notsent.

- The NRC can also register itself on the application. It has to provide occupied beds and vacant beds which can be updated later.

- The registration of the NRC and Aaganwadi are verified by the details and documents provided by both during registration.

- The NRC can see new referrals in their panel and admit them. The NRC can discharge the child through the application after the admission period is over and the child is healthy. The bed count of NRC is automatically updated during these actions. The admission period can also be extended through the app itself.

- After Discharge follow-upsare scheduled through the app automatically with difference of 15 days. The follow-ups which are upcoming are shown in order in the follow-uplist.These follow-upscan be extended. Default follow-ups are 4.

- On follow-ups and discharge the child health data is taken for progressreports.

- Child's data and progress can be seen in past records afterdischarge.

- Old Data is maintained in the database for records and statistics purposes. Past records of the same can be seen by the respective NRC in theirdashboard.

3. CONCLUSION

Malnutrition is a still a major problem in today's society. This prevalent issue can be tackled by introducing some new schemes and awareness in the today's era. Existing schemes can prove to be helpful if taken online like this Aaganwadi and NRC scheme. By using the new tech innovations and these type of online applications, we can make the malnourished children of today a healthy youth of tomorrow.

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Sales Prediction Model for Big Mart

Nikita Malik*, Karan Singh**

Abstract: Machine Learning is a category of algorithms that allows software applications to become more accurate in predicting outcomes without being explicitly programmed. The basic premise of machine learning is to build modelsand employ algorithms that can receive input data and use statistical analysis to predict an output while updating outputs as new data becomes available. These models can be applied in different areas and trained to match the expectations of management so that accurate steps can be taken to achieve the organization's target.In this paper, the case of Big Mart, a one-stop-shopping-center, has been discussed to predict the sales of different types of items and for understanding the effects of different factors on the items' sales.Taking various aspects of a dataset collected for Big Mart, and the methodology followed for building a predictive model, results with high levels of accuracy are generated, and these observations can be employed to take decisions to improve sales.

Keywords: Machine Learning, Sales Prediction, Big Mart, Random Forest, Linear Regression

1. INTRODUCTION

In today's modern world, huge shopping centers such as big malls and marts are recording data related to sales of items or products with their various dependent or independent factors as an important step to be helpful in prediction of future demands and inventory management. The dataset built with various dependent and independent variables is a composite form of item attributes, data gathered by means of customer, and also data related to inventory management in a data warehouse. The data is thereafter refined in order to get accurate predictions and gather new as well as interesting results that shed a new light on our knowledge with respect to the task's data. This can then further be used for forecasting future sales by means of employing machine learning algorithms such as the random forests and simple or multiple linear regression model.

1.1 Machine Learning

The data available is increasing day by day and such a huge amount of unprocessed data is needed to be analysed precisely, as it can give very informative and finely pure gradient results as per current standard requirements. It is not wrong to say as with the evolution of Artificial Intelligence (AI) over the past

two decades, Machine Learning (ML) is also on a fast pace for its evolution. ML is an important mainstay of IT sector and with that, a rather central, albeit usually hidden, part of our life [1]. As the technology progresses, the analysis and understanding of data to give good results will also increase as the data is very useful in current aspects.In machine learning, one deals with both supervised and unsupervised types of tasks and generally a classification type problem accounts as a resource for knowledge discovery. Itgeneratesresources and employs regression to make precise predictions about future, the main emphasis being laid on making a system self-efficient, to be able to do computations and analysis to generate much accurate and precise results [2]. By using statistic and probabilistic tools, data can be converted into knowledge. The statistical inferencing uses sampling distributions as a conceptual key [11].

ML can appear in many guises. In this paper, firstly, various applications of ML and the types of data they deal with are discussed. Next, the problem statement addressed through this work is stated in a formalized way. This is followed by explaining the methodology ensued and the prediction results observed on implementation.Various machine learning algorithms include [3]:

- Linear Regression: It can be termed as a parametric technique which is used to predict a continuous or dependent variable on basis of a provided set of independent variables. This technique is said to be parametric as different assumptions are made on basis of data set.

- K-Nearest Neighbors (KNN): It is a learning algorithm which is based on instances and knowledge gained through them [4]. Unlike mining in data stream scenarios, cases where every sample can simultaneously belong to multiple classes in hierarchical multi-label classification problems, k-NN is being proposed to be applied to predict outputs in structured form [5].

- Decision tree: It is an intuitive model having low bias and it can be adopted to build a classification tree with root node being the first to be taken into account in a top-down manner.It is a classic model for machine learning [6].

- Naïve Bayes classifiers: These are based on Bayes theorem and a collection of classification algorithmswhere

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classification of every pair is independent of each other.Bayesian learning can provide predictions with readable reasons by generating an if-then form of list of rules [8].

- Random Tree: It is an efficient algorithm for achieving scalability and is used in identification problems for building approximate system. The decisions are taken considering the choices made on basis of possible consequences, the variables which are included, input factor. Other algorithms can include SVM, xgboost, logistic regression and so on[7].

- K-means clustering: This algorithm is used in unsupervised learning for creating clusters of related data

based ontheir closeness to the centroid value [9].

1.2 Problem Statement

"To find out what role certain properties of an item play and how they affect their sales by understanding Big Mart sales." In order to help BigMart achieve this goal, a predictive model can be built to find out for every store, the key factors that can increase their sales and what changes could be made to the product or store's characteristics.

2. METHODOLOGY

The steps followed in this work, right from the dataset preparation to obtaining results arerepresented in Fig.1.
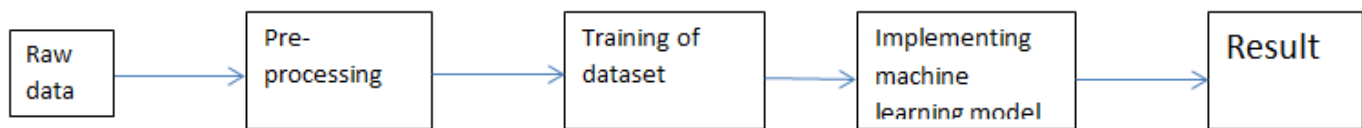
Fig. 1. Steps followed for obtaining results

2.1 Dataset and its Preprocessing

BigMart's data scientists collected sales data of their 10 stores situated at different locations with each store having 1559 different products as per 2013 data collection.Using all the

observations it is inferred what role certain properties of an item play and how they affect their sales.The dataset looks like shown in Fig.2 on using head() function on the dataset variable.

Fig. 2. Screenshot of Dataset

Fig. 3. Various datatypes used in the Dataset

The data set consists of various data types from integer to float to object as shown in Fig.3.

In the raw data, there can be various types of underlying patterns which also gives an in-depth knowledge about subject of interest and provides insights about the problem. But caution should be observed with respect to data as itmay contain null values, or redundant values, or various types of ambiguity, which also demands for pre-processing of data. Dataset should therefore be explored as much as possible.

Various factors important by statistical means like mean, standard deviation, median, count of values and maximum value etc. are shown in Fig.4 for numerical variables of our dataset.

Fig. 4. Numerical variables of the Dataset

Preprocessing of thisdataset includes doing analysis on the independent variables like checking for null values in each column and then replacing or filling them with supported appropriate data types, so that analysis and model fitting is not hindered from its way to accuracy. Shown above are some of the representations obtained by using Pandas tools which tells about variable count for numerical columnsandmodal values for categorical columns. Maximum and minimum values in numerical columns, along with their percentile values for median, plays an important factor in deciding which value to be chosen at priority for further exploration tasks and analysis. Data types of different columns are used further in label processing and one-hot encoding scheme during model building.

2.2 Algorithms employed

Scikit-Learn can be used to track machine-learning system on wholesome basis[12].Algorithms employed for predicting sales for this dataset are discussed as follows:

- **Random Forest Algorithm**

Random forest algorithm is a very accurate algorithm to be used for predicting sales.It is easy to use and understandfor the purpose of predicting results of machine learning tasks.In sales prediction, random forest classifier is used because it has decision tree like hyperparameters.The tree model is same as decision tool. Fig.5 shows the relation between decision trees and random forest.To solve regression tasks of prediction by

virtue of random forest, the *sklearn.ensemble* library's random forest regressor class is used. The key role is played by the parameter termed as *n_estimators* which also comes under random forest regressor.Random forest can be referred to as a meta-estimator used to fit upon numerous decision trees (based on classification) by taking the dataset's different sub-samples.*min_samples_split* is taken as the minimum number when splitting an internal node if integer number of minimum

samples are considered.A split's quality is measured using *mse* (mean squared error), which can also be termed as feature selection criterion.This also means reduction in variance*mae* (mean absolute error), which is another criterion for feature selection.Maximum tree depth, measured in integer terms, if equals one, then all leaves are pure or pruning for better model fitting is done forall leaves less than *min_samples_split*samples.
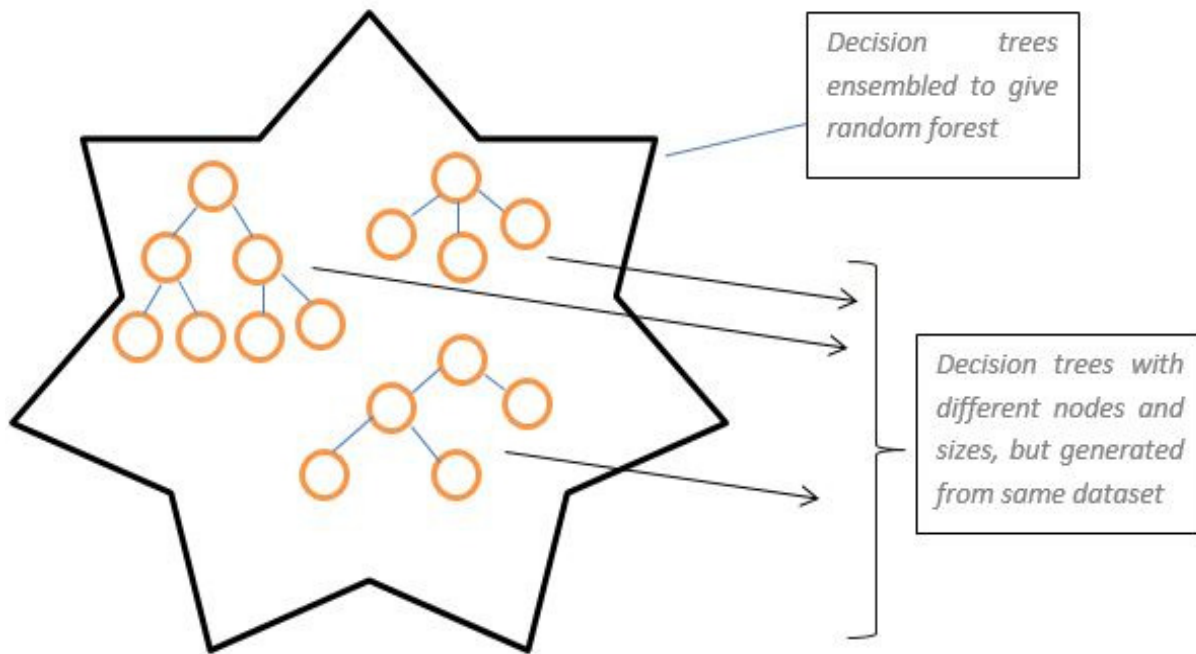
Fig. 5. Relation between Decision Trees and Random Forest

• **Linear Regression Algorithm**

Regression can be termed as a parametric technique which is used to predict a continuous or dependent variable on basis of a provided set of independent variables. This technique is said to be parametric as different assumptions are made on basis of data set.

$$Y = \beta o + \beta 1X + \epsilon \tag{1}$$

Equation shown in eq.1 is used for simple linear regression.These parameters can be said as:

Y -Variable to be predicted

X -Variable(s) used for making a prediction

βo -When X=0, it is termed as prediction value or can be referredto as intercept term

β1 -when there is a change in X by 1 unit it denotes change in Y.It can also be said as slope term ∈ -The difference between the predicted and actual values is represented by this parameter and also represents the residual value.Howeverefficiently the model is trained, tested and validated, there is always a difference between actual and predicted values which is irreducible error thus we cannot rely completely on the predicted results by the learning algorithm. Alternative methods given by Dietterich can be used for comparing learning algorithms [10].

2.3 Metrics for Data Modelling

• The coefficient of determination R^2(R-squared) is a statistic that measuresthe goodness of a model's fit i.e. how well the real data points are approximated by the predictions of regression. Higher values of R^2 suggest higher model accomplishments in terms of prediction along with accuracy, and the value 1 of R^2 is indicative of regression predictions perfectly fitting the real data

points.For further better results, the use of adjusted R^2 measures works wonders. Taking logarithmic values of the target column in the dataset proves to be significant in the prediction process. So, it can be said that on taking adjustments of columns used in prediction, better results can be deduced. One way of incorporating adjustment could also have included taking square root of the column. It also provides better visualization of the dataset and target variable as the square root of target variable is inclined to be a normal distribution.

- The error measurement is an important metric in the estimation period. Root mean squared error (RMSE) and Mean Absolute Error (MAE) are generally used for continuous variable's accuracy measurement. It can be said that the average model prediction error can be expressed in units of the variable of interest by using both MAE and RMSE. MAE is the average over the test sample of the absolute differences between prediction and actual observation where all individual differences have equal weight. The square root of the average of squared differences between prediction and actual observation can be termed as RMSE. RMSE is an absolute measure of fit, whereas R^2 is a relative measure of fit.RMSE helps in measuring the variable's average error and it is also a quadratic scoring rule. Low RMSE values obtained for linear or multiple regression corresponds to better model fitting.

With respect to the results obtained in this work, it can be said that there is no big difference between our train and test sample since the metric RMSE ratio is calculated to be equal to the ratio between train and test sample. The results related to how accurately responses are predicted by our model can be inferred from RMSE as it is a good measure along with measuring precision and other required capabilities. A considerable improvement could be made by further data exploration incorporated with outlier detection and high leverage points.Another approach, which is conceptually easier, is to combine several sub-models which are low dimensional and easily verifiable by domain experts, i.e., ensemble learning can be exploited [9].

3.   IMPLEMENTATION AND RESULTS

In this section, the programming language, libraries, implementation platform along with the data modeling and the observations and results obtained from it are discussed.

3.1   Implementation Platform and Language

Python is a general purpose, interpreted-high level language used extensively nowadays for solving domain problems instead of dealing with complexities of a system. It is also termed as the 'batteries included language' for programming. It has various libraries used for scientific purposes and inquiries along with number of third-party libraries for making problem solving efficient.

In this work, the Python libraries of Numpy, for scientific computation, and Matplotlib, for 2D plotting have been used. Along with this, Pandas tool of Python has been employed for carrying out data analysis.Random forest regressor is used to solve tasks by ensembling random forest method.As a development platform, Jupyter Notebook, which proves to work great due to its excellence in 'literate programming', where human friendly code is punctuated within code blocks, has been used.

3.2   Data Modeling and Observations

Correlation is used to understand the relation between a target variable and predictors. In this work, Item-Sales is the target variable and its correlation with other variables is observed.

Considering the case of Item-Weight, the feature item weight is shown to have a low correlation with the target variable Item-Outlet-Sales in Fig.6.
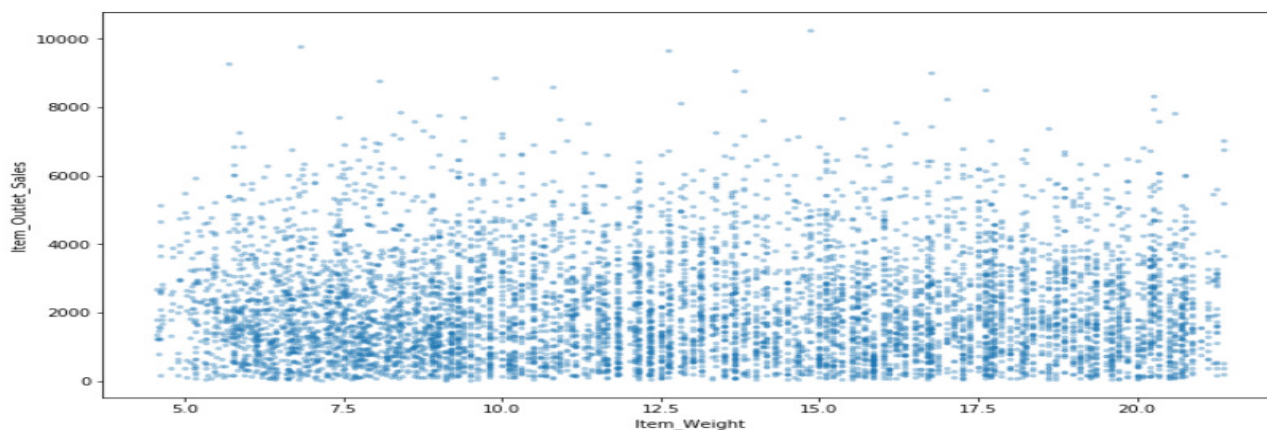
Fig. 6. Correlation between target variable and Item-weight variable

As can be seen from Fig.7, there is no significant relation found between the year of store establishment and the sales for the items. Values can also be combined into variables that classify them into periods and give meaningful results.
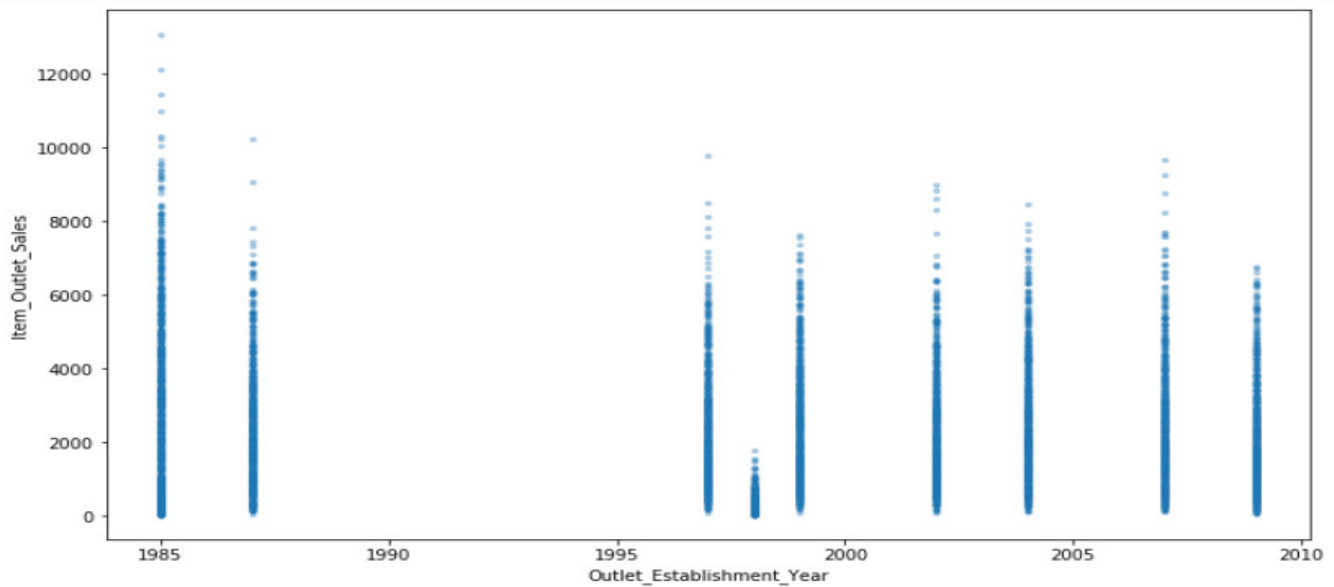
Fig. 7. Correlation between target variable and Outlet-establishment-year variable

The place where an item is placed in a store, referred to as Item_visibility, definitely affectsthe sales.However, the plot chart and correlation table generated previouslyshow that the flow is in opposite side.One of the reasons might be that daily used products don't need high visibility. However, there is an issue that some products have zero visibility, which is quite impossible. Fig.8 shows the correlation between item visibility variable and the target variable.
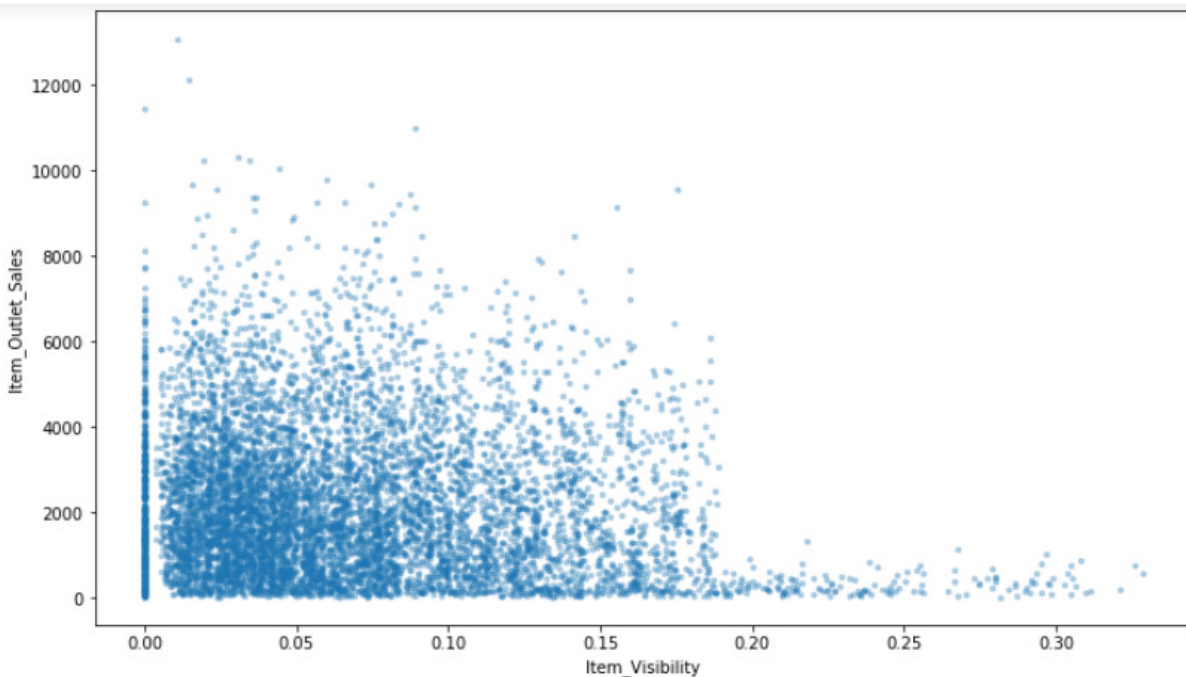
Fig. 8. Correlation between target variable and Item-visibility variable

Frequency for each categorical or nominal variable plays a significant role in further analysis of the dataset, thus supporting and collaborating in data exploration to be performed. As shown in Fig.9, various variables in our dataset, with their data type and categories are shown. Here, the ID column and the source column, denoting from where the test or train sample data belongs to, are excluded and not used.

```
In [16]: ct=[x for x in data.dtypes.index if data.dtypes[x]=='object']

In [17]: ct=[x for x in ct if x not in['Item_Identifier','Outlet_Identifier','source']]

In [18]: for col in ct:
             print(data[col].value_counts())

Low Fat     8485
Regular     4824
LF           522
reg          195
low fat      178
Name: Item_Fat_Content, dtype: int64
Fruits and Vegetables    2013
Snack Foods              1989
Household                1548
Frozen Foods             1426
Dairy                    1136
Baking Goods             1086
Canned                   1084
Health and Hygiene        858
Meat                      736
Soft Drinks               726
Breads                    416
Hard Drinks               362
Others                    280
Starchy Foods             269
Breakfast                 186
Seafood                    89
Name: Item_Type, dtype: int64
Tier 3     5583
Tier 2     4641
Tier 1     3980
Name: Outlet_Location_Type, dtype: int64
Medium     4655
Small      3980
High       1553
Name: Outlet_Size, dtype: int64
Supermarket Type1     9294
Grocery Store         1805
Supermarket Type3     1559
Supermarket Type2     1546
Name: Outlet_Type, dtype: int64
```

Fig. 9. Different item categories in the dataset

When a predictive model generated from any supervised learning regression method is applied to the dataset, the process is said to be data scoring. The above model score clearly infers about Data Scoring.The probability of a product's sales to rise and sink can be discussed and understood on the basis of certain parameters. The vulnerabilities associated with a product or item and further its sales are also necessary and play a very important role in our problem-solving task. Further, a user authentication mechanism should be employed to avoid access from any unauthorized users and thus ensuring all results are protected and secured.
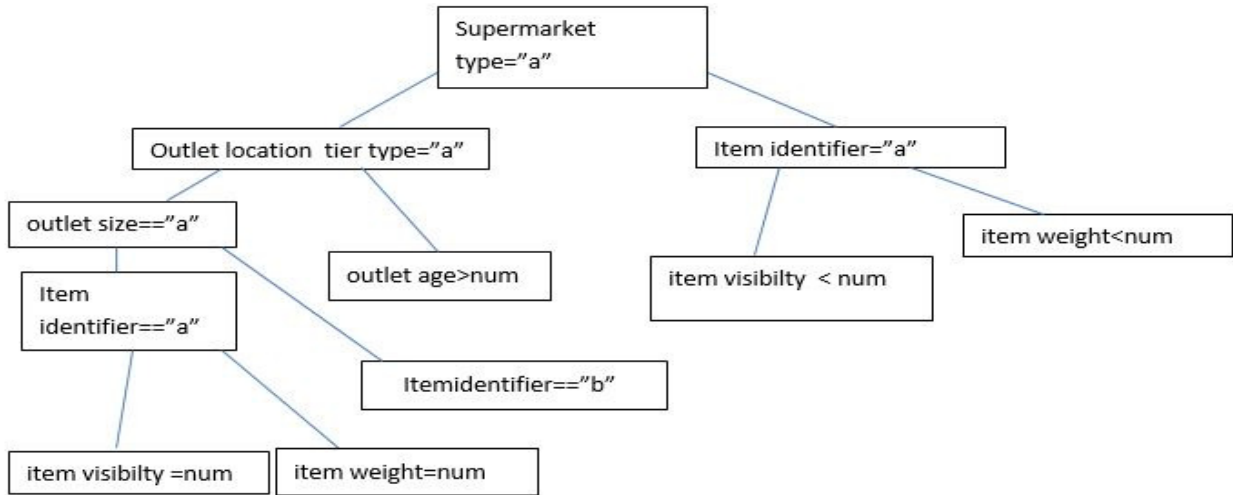
Fig. 10. Flowchart for division of dataset on various factors (having proper leaves after pruning)

In Fig.10, a flowchart is represented in which the dataset has been divided on the basis of various factors. In the last stage of the flowchart, the nodes with numbers 'a' and 'b' represent some string values for distinguishing the dataset items and 'num' can be any arbitrary number. The dataset has been divided and pruning has been performed on the basis of different factors. Ensembling many such decision trees will generate a random forest model.
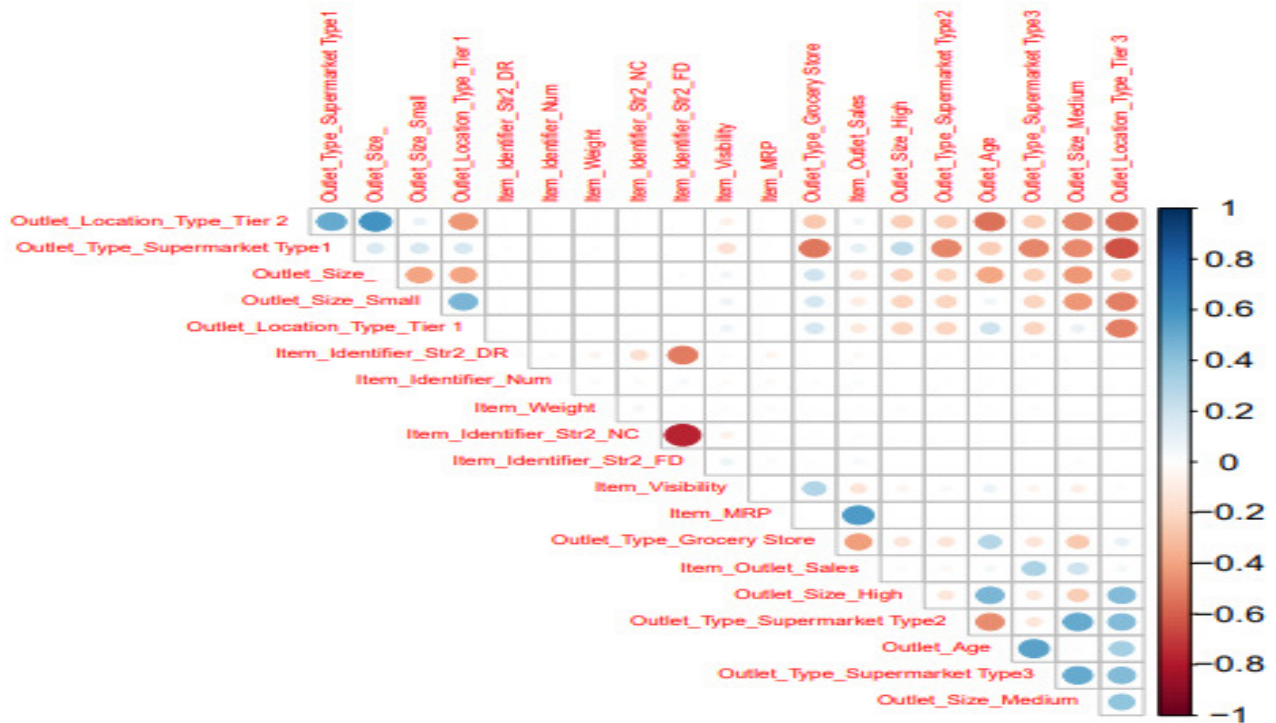
Fig. 11. Diagram showing correlation among different factors

From Fig.11, the correlation among various dependent and independent variables is explored to be able to decide on the further steps that are to be taken. Variables used are obtained after data pre-processing, and following are some of the important observations about some of the used variables:

- Item_visibility is having nearly zero correlation with our dependent variable item_outlet_sales and grocerystore outlet_type. This means that the sales are not affected by visibility of item which is a contradiction to the general assumption of "more visibility thus, more sales".

- Item_MRP (maximum retail price) is positively correlated with sales at an outlet, which indicates that the price quoted by an outlet plays an important factor in sales.

- Outlet situated in location with type tier 2 and size medium are also having high sales, which means that a one-stop-shopping-center situated in a town or city with populated area can have high sales.

- Variation in MRP quoted by various outlets depends on their individual sales.

Fig.12 summarizes the various observations obtained from the developed linear regression model.The method used is least square method and model used is ordinary least square method (OLS).

```
==============================================================================
                           coef    std err          t      P>|t|      [0.025      0.975]
------------------------------------------------------------------------------
const                  -105.2014     14.368     -7.322      0.000    -133.366     -77.037
Item_MRP                 15.5564      0.197     79.109      0.000      15.171      15.942
Item_Visibility        -215.0161    257.172     -0.836      0.403    -719.136     289.103
Item_Weight              -0.5898      2.901     -0.203      0.839      -6.276       5.096
Outlet_Years              9.7876      1.569      6.237      0.000       6.712      12.864
Item_Fat_Content_0      -73.3896     14.931     -4.915      0.000    -102.658     -44.121
Item_Fat_Content_1      -31.8117     16.743     -1.900      0.057     -64.632       1.008
Outlet_Location_Type_0 -227.2672     13.187    -17.234      0.000    -253.117    -201.417
Outlet_Location_Type_1  202.3267     14.276     14.172      0.000     174.342     230.312
Outlet_Location_Type_2  -80.2609     16.687     -4.810      0.000    -112.972     -47.550
Outlet_Size_0           -89.3578     11.043     -8.092      0.000    -111.004     -67.712
Outlet_Size_1           314.4021     14.184     22.167      0.000     286.599     342.205
Outlet_Size_2          -330.2457     14.624    -22.583      0.000    -358.912    -301.579
Outlet_Type_0          -897.9003     16.858    -53.263      0.000    -930.946    -864.855
Outlet_Type_1           316.0327     15.062     20.982      0.000     286.507     345.558
Outlet_Type_2          -134.7124     16.128     -8.352      0.000    -166.328    -103.097
Outlet_Type_3           611.3787     12.762     47.905      0.000     586.361     636.396
Item_Type_Combined_0    -36.8859     29.720     -1.241      0.215     -95.144      21.372
Item_Type_Combined_1    -20.2123     20.292     -0.996      0.319     -59.990      19.565
Item_Type_Combined_2    -48.1032     24.920     -1.930      0.054     -96.953       0.747
Outlet_0               -467.5694     23.692    -19.735      0.000    -514.012    -421.127
Outlet_1                -89.3578     11.043     -8.092      0.000    -111.004     -67.712
Outlet_2                137.1682     30.199      4.542      0.000      77.971     196.365
Outlet_3               -134.7124     16.128     -8.352      0.000    -166.328    -103.097
Outlet_4               -430.3309     19.638    -21.913      0.000    -468.826    -391.836
Outlet_5                611.3787     12.762     47.905      0.000     586.361     636.396
Outlet_6                148.5790     30.608      4.854      0.000      88.579     208.579
Outlet_7                -83.4204     30.228     -2.760      0.006    -142.674     -24.167
Outlet_8                365.3278     23.434     15.590      0.000     319.391     411.264
Outlet_9               -162.2641     19.044     -8.520      0.000    -199.595    -124.933
==============================================================================
Omnibus:                  964.288   Durbin-Watson:                    2.003
Prob(Omnibus):              0.000   Jarque-Bera (JB):              2305.180
Skew:                       0.669   Prob(JB):                         0.00
Kurtosis:                   5.169   Cond. No.                     4.80e+16
==============================================================================
```

```
                        OLS Regression Results
==============================================================================
Dep. Variable:      Item_Outlet_Sales   R-squared:                      0.563
Model:                           OLS    Adj. R-squared:                 0.563
Method:                Least Squares    F-statistic:                    732.1
Date:               Fri, 19 Jul 2019    Prob (F-statistic):              0.00
Time:                       10:57:12    Log-Likelihood:               -71991.
No. Observations:               8523    AIC:                        1.440e+05
Df Residuals:                   8507    BIC:                        1.441e+05
Df Model:                         15
Covariance Type:           nonrobust
------------------------------------------------------------------------------
```

Fig. 12. Summary from linear regression model

It is observed that the R-squared value is 0.563 for our dependent variable for 8523 number of observations taken under consideration. This signifies how accurately the built regression model fits.

4. PREDICTION RESULTS AND CONCLUSION

The largest location did not produce the highest sales. The location that produced the highest sales was the OUT027 location, which was in turn a Supermarket Type3, having its size recorded as medium in our dataset. It can be said that this outlet's performance was much better than any other outlet location with any size provided in the considered dataset.

The median of the target variable Item_Outlet_Sales was calculated to be 3364.95 for OUT027 location. The location with second highest median score (OUT035) hada median value of 2109.25.

Adjusted R-squared and R-squared values are higher for Linear regression model than average. Therefore, the used model fits better and exhibits accuracy.

Also, model accuracy and score of regression model canreach nearly 61% if built with more hypothesis consideration and analysis, as shown by code snippet in Fig.13.

```python
from sklearn.ensemble import RandomForestRegressor
X_train = sd.drop(['Item_Outlet_Sales','Item_Identifier','Outlet_Identifier'],axis=1)
Y_train = sd['Item_Outlet_Sales']
X_test = ds.drop(['Item_Identifier','Outlet_Identifier'],axis=1).copy()
rf = RandomForestRegressor(n_estimators=400,max_depth=6, min_samples_leaf=100,n_jobs=4)
rf.fit(X_train,Y_train)
rf_pred = rf.predict(X_test)
rf_accuracy = round(rf.score(X_train,Y_train)*100,2)
print('accuracy of random forest is : %.4g' %rf_accuracy)
```

```
accuracy of random forest is : 60.8
```

Fig. 13. Code showing model score of random forest

It can be concluded that more locations should be switched or shifted to Supermarket Type3 to increase the sales of products at Big Mart. Any one-stop-shopping-center like Big Mart can benefit from this model by being able to predict its items' future sales at different locations.

5. CONCLUSION AND FUTURE SCOPE

In this paper, basics of machine learning and the associated data processing and modeling algorithms have been described, followed by their application for the task of sales prediction in Big Mart shopping centers at different locations.On

implementation, the prediction results show the correlation among different attributes considered and how a particular location of medium size recorded the highest sales, suggesting that other shopping locations should follow similar patterns for improved sales.

Multiple instances parameters and various factors can be used to make this sales prediction more innovative and successful. Accuracy, which plays a key role in prediction-based systems, can be significantly increased as the number of parameters used are increased. Also, a look into how the sub-models work can lead to increase in productivity of system. The project can be further collaborated in a web-based application or in any device supported with an in-built intelligence by virtue of Internet of Things (IoT), to be more feasible for use. Various stakeholders concerned with sales information can also provide more inputs to help in hypothesis generation and more instances can be taken into consideration such that more precise results that are closer to real world situations are generated. When combined with effective data mining methods and properties, the traditional means could be seen to make a higher and positive effect on the overall development of corporation's tasks on the whole. One of the main highlights is more expressive regression outputs, which are more understandable bounded with some of accuracy.Moreover, the flexibility of the proposed approach can be increased with variants at a very appropriate stage of regression model-building. There is a further need of experiments for proper measurements of both accuracy and resource efficiency to assess and optimize correctly.

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Cyber Crime Effecting E-commerce Technology

Tarunim Sharma*, Vinita Tomar**

Abstract: In today's world market perception has gone a drastic change. Thanks to internet and security protocols that are making physical market trends to obsolete as everybody is adopting and shifting to digital marketplace. The biggest reason behind this is accessibility to global markets and increase in effectiveness of businesses. But nothing comes without any flaws so is our E-Commerce. It is also having some infirmities. Cyber Crime is the biggest problem for the ecommerce world. Cybercrime act as a barrier in the success of online business industry. It is also called Computer Crime because doing online transactions using computer is used as an instrument for executing illegal tasks such as committing frauds, trafficking in intellectual property, stealing identities or privacy being violated. This paper draws out awareness to various causes of Cyber Crimes, problems faced and prevention for the same. Paper also studies how cybercrime perception affect the user's interest to go for online commerce.

Keywords: Cyber Crime, E-commerce, E-Business

1. INTRODUCTION

E-commerce or Electronic Commerce also known as Internet Commerce refers to buying or selling of goods and services with the help of Internet, not only this but transfer of money or data to accomplish number of transactions. No offs, no time limits, no distance barriers in today world commerce is getting its new definition. It has been now transforming from physical market to electronic and mobile commerce. It is providing an easy way for doing not only shopping but number of other transactions in a very easy and suited way, anywhere anytime i.e.24*7 by just a one click away. All bank and financial institutions are moving towards setting up their setups and mobile formats to mitigate the online transactions. Number of immense players in e-shopping like Amazon, Flipkart, eBay, Myntra have established new blueprints for doing shopping. E-commerce comes in different types based on the transactional relations between customers and businesses like retail, wholesale, Drop shipping, Crowd funding, Subscription, digital products and services etc. As of now E-Commerce is said to be one of the fastest growing industry in global economy. Though ecommerce has become part and parcel of today's everyone individual life's, but it is proving to be one of the dangerous aspect of one's life as there are more chances of security breach and cybercrimes.

As we are doing number of transactions online, it has become the source of crime because lots of confidential information being shared, bank related and monetary transfers are being done which attracts the cyber criminals for violating the security. All firms are going online there by increasing their technical base without inspecting the huge risk associated with the same [1]. Cybercriminals can exploit these most important data and can do so much damage for an organization that e-commerce can end up by shutting down.

Internet Uprising

India being ranked the second largest online market in the world after China with 560 million internet users. With Revolution came in smart phones has uplifted the internet use and e-commerce vogue in India. This is because e-commerce offers number of unique advantages as it gives number of opportunities to different kinds of businesses to expand their business exponentially. It has a global reach which will otherwise be not possible with physical markets. It has other advantages to business that is freeing them from the office space, investment and travelling time also. Internet is a boon and acting as a connecting link between the supply sources and demand. This rapid growth is mainly because of huge advancements in technology and high-speed wireless networks availability.

TABLE 1

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Statewise subscribers of narrowband and broadband connections

Telecom Service Area	Narrowband Rural	Narrowband Urban	Broadband Rural	Broadband Urban
Andhra Pradesh	2.33	2.25	19.21	30.01
Assam	0.67	0.61	5.9	5.85
Bihar	3.69	1.56	21.68	16.96
Delhi	0.2	2.61	0.54	35.18
Gujarat	1.18	1.43	10.86	29.13
Haryana	0.55	0.61	5.61	9.26
Himachal Pradesh	0.26	0.19	3.16	2
Jammu and Kashmir	0.01	0.03	1.69	3.14
Karnataka	1.45	1.86	12.87	27.5
Kerala	0.79	1	9.48	14.7
Kolkata	0.18	1.38	1.34	13.94
Madhya Pradesh	2.48	2.15	14.58	25.23
Maharashtra	2.51	2.62	19.65	32.82
Mumbai	0.1	2.39	1.27	25.21
North East	0.3	0.34	2.66	4.06
Orissa	1.42	0.47	9.09	6.63
Punjab	0.7	0.97	6.68	16.34
Rajasthan	2.07	1.56	15.16	20.42
Tamil Nadu	1.54	2.54	11.94	32.44
Uttar Pradesh (East)	3.77	2.19	20.14	23.4
Uttar Pradesh (West)	1.96	1.64	11.27	19.75
West Bengal	2.46	1.18	12.23	14.44
Total	**30.62**	**31.58**	**217.01**	**408.41**

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TABLE 2: Internet Subscribers in India

At the End of March	Total	Urban	Rural
2013	13.47	-	-
2014	20.28	-	-
2015	24.07	49.07	12.89
2016	26.97	58.28	12.80
2017	32.85	70.83	15.49
2018	38.01	84.74	16.41

The above data shows the digital buyers becomes almost doubles in 2018 and estimates that the number of users will be reaching almost 623 million by the end of this year which is a huge number. The data shows that almost 97 percent of users are going for mobile phones to access the internet and various e-commerce activities. Increasing bandwidth availability, flexible and variety of data plans and number of awareness programs by government has bridged the digital gap among rural and urban India that can be seen in the table above. But it comes with the problem of security of online transactions.

Cyber Crime and Criminals

Cyber Crime is a crime which uses computer and internet as an object to enact illegal tasks. While most of the cyber-crimes are performed by criminals to gain benefits but some of them are executed mainly to disable and damage computer or network of computers with some infectious programs know as viruses. Not only this they gain access to confidential organization information, personal information, government important information, credit card or other payment related data and use them for unfair means and sell them for their profits. In today's world of digital age our identity information is the most essential part of our day to day life. So, cybercrime is generally related to digital data and the persons performing these activities are said to be Hackers. These hackers are using very modern and innovative ideas to perform cyber-attacks while on the contrary avoiding their detection and arrest. Hackers uses well equipped software for achieving their goals, but social engineering is said to be their important component [4]. Cybercrimes are basically categorized as follows:

1. Data Offence

- *Data Alteration*

Privacy while establishing connection between the two parties is important to make sure that the data being transmitted is not get tampered in transit. Connecting through internet brings the chances of computer crime being conducted by the third party

when the data is exchanged. In this attack unauthorized user modify the data being transmitted by gaining access to it illegally.

- *Data Stealing*

As the name says data is stealed by unauthorized users which includes confidential data, personal data, government information, credit card information, passwords, organization secret information. In this information is being copied in an illegal way without the knowledge of user which comes under a big crime. Phishing named as Email spoofing which include links to number of admissible looking websites which steals your confidential and secret information.

- *Data ambushing*

In this the attacker detects the torrent of data being transmitted from one end to other to gather information which can be used later. Data collection is the main objective of this attack.

2. NETWORK MISDEEDS

In this network is being tempered like deleting, damaging, altering, suppressing, defacing the data being exchanged. Botnets are the computer networks that are managed by remote hackers. Remote hackers take these botnets as the medium to attack on other computers in networking.

3. GAINING CRIME

In this attack hackers gains unauthorized access to confidential data with the help of number of exploit kits which are the ready-made tools bought by hackers online. In this attack we also discuss viruses which are computer programs that attaches themselves to system files to corrupt or replicate themselves to transmit to other computers on networks to disrupt the operation going on and damage data stored.

4. EMAIL BOMBING AND SPAMMING

In this large number of emails are send to target address which results in crashing of its account. The mails are too big to handle and consumes a large amount of network resources resulting in denial of service attack.

5. WEB JACKING

In this hacker takes control on others website illegally. The owner lost the control on his website and attacker use the unauthorized accesses website for its own profit gains. They not only change the content of genuine website but redirects the user to the fake website which is now owned by the attacker.

CYBER Criminals

They are the persons that attacks our computer system and crash them by adopting any of the above methods. They include an individual or a group of people who perform these attacks for their financial and personal gains[8]. They are of the following types:

- Hackers: It refers to an individual who uses their technical knowledge to have an unauthorized access to network of systems or data.

- Stalkers: They are the people who intentionally observe the activities of their victim to get hold of their private data. These types of crimes are generally conducted through social media daises.

- Discontented Employees: Employees of an organization can also become hackers if they are unsatisfied with their job. They perform cybercrime by attacking their organizations system.

- Script Kiddies: These attackers use the already made hacking programs and go through them thoroughly so that they can reuse them by making slight changes according to their convenience.

- Phishes: They are the cyber criminals whose main motive is to steal the personal or sensitive information related to an individual. They create the copy of the original website and users fall prey to such activities and share their important information. Such sites also spoil the reputation of organization which leads to decrease in revenues.

- Commercial Groups, Insiders, Advanced Persistent Threat Agents etc.

Cyber Crime and Ecommerce

In the past few years, the definition of how we do business activities has changed a lot. Market has changed their faces to online business using internet which further attracts number of cyber criminals there by. Organization are very comfortable adopting e-commerce but on same side worried about security and number of risks involved. As we all know e-commerce works differently as of traditional commerce, so chances of frauds are more in this as physical presence is not there. Though number of businesses are attracting towards e-commerce rate of cyber crimes are also increasing proportionally to that and percentage is large in India specially. Government should take serious initiatives to overcome the challenges being faced by cyber crimes otherwise it will extremely affect our online business trends. Chances of frauds are more in India because e-retailing is in first stage buyers are new they lack awareness and get easily fooled. Cyber cheaters are using the fake websites like the original ones to fool the buyers. Cases are also registered in which buyers getting the wrong, false, damage delivery of products in comparison to what they have shown and described on their websites. In some cases, sellers are also involved in such bad activities by making the false complaints and gaining benefits out of that. Amazon, Flipkart are the big giants in e-commerce industry has registered such kind of cases.

Causes of Cyber Crime

Number of factors are there that motivates cyber criminals to execute the attacks. The number of causes include:

- Sometimes attackers have grudges against an organization because either they have taken away his market or job, never appreciated the hard work, incentives or promotion due not given.

- Other factor can be low cost for implementing these crimes, inadequate rules and regulation, chances for being caught are low.

- Poverty, corruption and unemployment also attracts being hackers.

- Easy accessibility to internet makes it serene to execute such attacks.

- Peer group influence and defective socialization are the other factors for motivating these criminals.

Impact of Cyber Crime

i. Time wastage and decline financial growth: There is lot of time wastage as IT professionals spent most of their time rectifying and recovering from the harm caused by cyber criminals. That time can be utilized in gaining profit for the organization. Not only this but financial growth also get disturbed as people started losing trust on the companies because of the frauds and started moving to others for security.

ii. Decrease in productivity: Companies spent most of their time in inculcating security by applying number of passwords that consumes most of the organizations productive time. Companies also buys expensive software to stop the attack from viruses which add to the overhead cost.

iii. Fear in Teenagers: Today teenagers fear a lot from this because of cyber bullying. It has now become the situation of concern. It is affecting the girl teenagers mostly as they are the easy targets and they fear from bad comments, negative pictures and threatening messages.

iv. Identity theft: If you are the victim in hands of cyber criminals it leaves a long-lasting effect on your life as sharing personal information is a big loss.

v. Change in consumer behavior: Consumers will start avoiding the online shopping and they will take it as an alternative method. Because security is their main priority.

Controlling Cyber Crimes

Cybercrimes must be controlled by the joint effort of organizations and internet users. All the required precautions must be taken to prevent these attacks. Internet users should be smart enough to not to fall in trap of hackers. Everyone should know the basics of how to protect themselves from such attacks. Otherwise cybercrime will put our lives to harm.

In contrast to real life world cyber criminals works in unity instead of fighting for supremacy. They help each other to strengthen their power and increase their opportunities[7] . Hence instead of routine methods we should implement some advanced techniques to keep check on them.

I. Employ strong passwords: Don't use same passwords on different websites, change them regularly. Passwords should be complex including numbers, letters and special symbols.

II. Keep your system up to date: The most important thing you must keep in mind is to make your operating system, internet and security software updated. If there is any flaw in that attacker will take advantage of that you will their next target.

III. Directing your social media fixtures: Keep your personal and private information secure. Do not reveal detail information about yourself and your family because they give hints to attackers to crack into your protected data.

IV. Educate your children about the internet: Teaching your children about how to make proper use of internet. They must be knowing about the pros and cons about using that.

V. Keeping yourself aware on major security breaches. If your website is there on internet for e-commerce you should be aware of what information hackers usually

VI. Access so that they should protect and apply proper check on those and change passwords regularly.

Encrypt and back up your most important data. You should keep duplicate copies of your personal data either on hard disk attached to your primary memory or on remote such as cloud.

6. CONCLUSION

The use of internet has spread his roots globally for e-commerce. This paper shows how cyber crime is affecting e-commerce and different levels of society. This helps us in getting knowledge of various threats of using internet and how to save yourself from that. The ways to overcome these crimes is to study laws, policy and well educated about how to save yourself from such attacks. In addition to this we have adopt other measures to secure our self from cyber criminals. So that they does not take advantage of browser ignorance, laws inefficiency, legislative delays.

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Achieving Objectives of Science Teaching Using Constructivist Approach

Dr. Monika Davar*

Abstract: Objectives of science teaching emphasize more on the processes of science rather than the product. Development of scientific attitude and providing training in scientific method are the major objectives which have been emphasized at the primary, secondary and senior secondary stages of school. But unfortunately the present system of education focuses more on cramming and memorization of facts and principles rather than conceptual understanding and hands on activities. The present paper aims to explore the use of constructivist approach in achieving the objectives of science teaching. The paper discusses the Implementation of Constructivist teaching strategies such as Inquiry learning, project method, problem solving method, laboratory method and cognitive apprenticeship for achieving objectives of science teaching. Strategies to be followed for teaching learning from home in view of the current pandemic situation are also discussed in the concluding portion of the research paper.

1. INTRODUCTION

As per position paper of 'National Focus Group on teaching science 'published by NCERT following are some of the main objectives of science teaching:

1. To help the learners in the acquisition of skills related to scientific processes.

2. To enable learners to comprehend the the processes and methods of generating scientific knowledge.

3. To make learners relate to the natural environment, artifacts and people at the local and global level

4. To help learners acquire the technological and practical skills which will equip them for entry into world of work.

5. To instill in learners the scientific temper (which includes the characteristic features of critical thinking, objectivity and freedom from prejudice)

6. To arouse curiosity, develop creativity and aesthetic sense in learners in context of Science and Technology.

Following are the objectives of science teaching at various levels:

Objectives at Primary stage

1. To involve the child in hands on activities, exploration, drawing classification, measurement and estimation

2. To arouse curiosity about the world including its natural environment, people and artifacts

3. To help the child in internalising the values of honesty, cooperation cleanliness, concern for life and environment.

4. To enable the child to develop a framework for observing the world. Emphasis will be on development of language through learning science.

Objectives at Upper primary stage

1. To help learners reach the concepts through hands on activities and experimentation.

2. To engage learners in investigating problems. Investigation are to be conducted in groups.

3. To develop the capability in learners to collect information from various relevant sources, organise it and exhibit it in the classroom.

4. To develop self learning skills in the learners. The focus will be on developing process skills.

Objectives at Secondary stage

1. To enable learners to grasp or comprehend the concept, principles and laws of Science and not just know the formal definitions (at the knowledge level).

2. To develop in learners the skills to evaluate critically epistemological status of scientific facts

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3. To equip the learners with skills to perform experimentation as a tool to verify principles of science.

4. To encourage learners to participate in extended activities and projects related to the local issues. Problem solving approach in science may be used.

Objectives at Senior secondary stage

1. To help the learners gain an in-depth understanding and not just knowledge of the core areas and aspects of science.

2. To equip the learners with problem solving and investigatory skills for different scientific topics.

3. To encourage learners to take part in science fairs at National level, conduct investigatory projects and use the problem solving approach to resolve local issues.

A critical analysis of the above objectives of science teaching makes it very evident that objectives of science teaching emphasize more on the processes of science rather than the product. Development of scientific attitude and providing training in scientific method are the major objectives which have been emphasized at all the stages. But unfortunately the present system of education focuses more on cramming and memorization of facts and principles rather than conceptual understanding and hands on activities. The present paper aims to explore the use of constructivist approach in achieving the objectives of science teaching mainly the inculcation of scientific attitude and provision of training in scientific method and processes.

2. CONSTRUCTIVIST APPROACH

Constructivism is an approach according to which people create their own meaning, by combining their existing knowledge with new experiences. Constructivist approach considers brain as an active agent which continuously draws meaning and interpretation on the basis of information received by it. Learning is an active process of constructing knowledge rather than acquiring it. Also instruction is the process of supporting knowledge construction rather than direct communication of knowledge by the teacher.

Forms of constructivism

There are two forms of constructivism: individual constructivism and social constructivism. According to individual constructivists like Piaget and Ausubel, an individual constructs his own understanding whenever he has new experiences in the environment, using his previous knowledge and beliefs.

Social constructivists like Vygotsky and Gergen believe that cultural tools, activity and social interaction play a role in individual's learning. Learners co - construct meaning through social interaction.

3. CONSTRUCTIVIST STRATEGIES FOR ACHIEVING OBJECTIVES OF SCIENCE TEACHING

1. Inquiry learning

Through inquiry learning methods learners try to discover and find out something which was unknown to them before. Learners explore, investigate and discover new knowledge through conducting experiments, solving problems and doing projects. Learners construct their own meaning, as the inquire into the problem and solve it.

2. Project based learning

Project is a purposeful activity which involves students in cooperative investigation in a natural or social environment, provides them opportunity to construct their own knowledge and ends in some finished product (like a project report, model or PowerPoint presentation). Projects engage students in activities and learners get real life experiences in social settings.

3. Problem solving method

Scientists adopt a logical and empirical approach to solving problems. This method is known as the scientific method. It involves solving problems through systematic observation, classification, interpretation of data and using other scientific processes.

Steps in scientific method are as follows:

1. Defining the problem in context of the given situation

2. Collecting data from various relevant sources

3. Formulating hypothesis or tentative solutions to the problem

4. Selecting the most likely hypothesis and testing it through experimentation

5. Drawing conclusions (on the basis of experimental results) and making generalizations

6. Applying the generalization to real life situations.

Laboratory method

This method involves conducting experiments and activities in the laboratory. After determining the objectives of laboratory work and proper preparation, the teacher gives instructions for

the laboratory work. As students conduct laboratory work, the teacher asks questions which encourage critical thinking. Students are encouraged to record their accurate observations even if they are not getting accurate results and try to find out reasons for the same.

Cognitive Apprenticeship

In this strategy, a learner enhances his knowledge and skills by getting guidance from an expert teacher. Teacher demonstrates solving of problems (modelling) and students observe it. They compare their own problem solving abilities with that of the teacher. Then students are provided the opportunity to solve the problems and they are provided feedback by the teacher or expert.

4. CONCLUSION

Learners are active participants in all constructivist teaching strategies. As they conduct hands on activities, investigation and experimentation to solve problems, they construct their own knowledge. Alongside constructing their own knowledge, the learners also learn the processes of science and develop a scientific attitude. Scientific attitude characterized by curiosity, inquisitiveness, open-mindedness tolerance is developed as the students work together in groups and conduct investigation. They also learn how to formulate hypothesis, collect data, conduct experiments and reach to conclusion thus getting a training in scientific method. Using these constructivist teaching strategies the students comprehend the concepts and develop higher order thinking skills rather than just cramming and memorization of facts. Thus Constructivist teaching strategies can help in achieving the objectives of science teaching.

Also, in view of the current situation of pandemic and resulting lockdown, following strategies can be adopted to achieve the objectives of science teaching (while teaching from home) :-

1. Use of flipped classroom approach:
   Students can be asked to go through the study material, collect data and conduct simple exploratory activities at home followed by a discussion in the online classes

2. Simple activities and experiments to be performed by the students as home assignment (using locally available material), followed by submission of its report. After that students can be given feedback by the teachers.

3. Project work to be done during vacations- students can be divided into groups and collaborate online to complete project work. Students can be asked to give presentation in the online classroom after completing the project.

4. Use of simulation to imitate the real life experiences (to be provided to the students)

Use of above strategies would not only help in achieving the objectives of science teaching but also revolutionize the way science is being taught at present. It would lead to a paradigm shift making teaching learning of science more joyful, effective and sustainable.

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India's Corporate Social Responsibility: A Journey from Voluntary to Mandatory

Preeti Bedi*

Abstract: The journey of corporate social responsibility in India has evolved over a period of time. The concept emerged as a pure philanthropic activity to mandatory norms for a slab of Indian companies. India after introduction of Companies Act 2013 emerged as first country to have mandatory social expenditure norm owing to which it is necessary to understand its evolution overtime. The aim of this paper is to highlight the journey and overview CSR in a developing country like India.

Keywords: Corporate social responsibility, Mandatory, Voluntary, India

1. INTRODUCTION

The roots of CSR are purely philanthropic in nature. In absence of any mandatory norms in India, many big corporates, Saints, Kings, Rishis etc. assumed their social responsibility (S. Vijay Kumar, 2017) towards the society on the basis of simple logic that we derive benefits from society thereby we owe to return back by serving it. There have been a drastic turning point in the history of India by mandating social expenditure with the introduction of Companies Act, 2013. This act replaced old Companies Act, 1956. The new act requires certain categories of companies to earmark certain percentage of their earnings for the pursuance of CSR activities. This can be witnessed in increased responsibility reporting by companies. Companies along with their financial reports are now publishing non-financial reports showing their participation in the betterment of society. The promotion of CSR has been effectively upheld by the world associations like World Bank, UNDP etc. Introduction of Sustainable development goals (popularly known as SDGS) is one of the examples of them. United Nations introduced 17 Sustainable Development Goals (SDGs) in 2015 which were adopted by its member countries with 15- year life span objective i.e. they are to be achieved by 2030 by its member countries.

2. LITERATURE REVIEW

Tilt (2016)argued that each country has different environmont in terms of sociocultural, politico legal and economic which influences CSR and its reporting. Thereby, such contextual issues must be addressed while researching CSR reporting.

Fordham & Robinson (2018) did interviewed various groups in Australia like corporate leaders, industrialists, environmental specialist and community leaders and concluded that CSR is a multidimensional construct. Mapping of Carroll's CSR dimension construct namely; economic, legal, ethical, discretionary and interaction was made in evolving the working definition of CSR from the resource industry that can be used in a specific context.

Agudelo et al., (2019) investigated the history of evolution of CSR in society. It argued that societal expectations of accepted behaviour of business houses which emerged due to certain public and international events shapes the acceptance and intergration of CSR throughout its evolution.

Tamvada (2020) stressed upon having uniform CSR regulation and legislation across the world in order to ensure consistency in discharge of socially oriented responsibilities. Study depicted the interrelationship between moral responsibility, legal responsibility and accountability as core elements of responsibility whereby it argued that in absence of accountability of actions there won't be any effective discharge of moral, legal and social obligations.

3. OBJECTIVES OF THE STUDY

The major objectives of the study are:
- To briefly study the evolution of Corporate Social Responsibility (CSR)
- To examine the current scenario of CSR in India including the Top performing companies in 2019 and 2018.

4. EVOLUTION OF CSR

CSR or Corporate Citizenship is all about holistic contribution of business towards society both in delivering good quality products and services as well as upliftment of society in terms of social progress, sustainable development etc.. CSR is a concept of social accountability towards its stakeholders (shareholders, customers, employees, government, suppliers etc.) whereby stakeholders are defined as all those who affect and get affected by actions of corporate decisions.

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World Business Council for Sustainable Development (WBCSD) defined "Corporate Social Responsibility is the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large"

CSR embraces the integration of environmental and societal concerns into decision making of business operations while incorporating expectations of shareholders in the form of reasonable return on capital invested. Various studies resulted in positive impact of CSR related activities on financial performance of companies (Preston and O'Bannon, 1997; Waddock and Grave, 1997; Guzman et. al, 2016). Such impact is ascribed to creating favourable brand and public image of company because its participation in social concerns.

Linkage of Concept of Social Responsibility with Religious Teachings

The roots of voluntary contribution towards upliftment of society can be seen in various Religious beliefs of *Hindus, Sikhs, Islam* etc. For example, in **Hinduism** four different Vedas like *Rig Veda, Sama Veda, Yajur Veda and Atharva Veda* always preach about moral values in business like detachment, dharma and Karma, serving to humanity & society as a whole etc whereby in **Sikhism and Islam** there are concepts like Dasvandh or Dasaundh (tenth part or 10%) and Zakat are used which signifies the importance of donating a part of your earnings for charitable causes. Such religious teachings have always been the base root of pure philanthropic contribution towards the needy and for upliftment of society at times when corporate houses or ancient India was under no statutory obligation to contribute.

From "Shareholder" to "Stakeholder" Theory

From the above definitions and concept of Corporate Social Responsibility (CSR) it is very much evident that CSR is termed as responsibility towards all those who are affected directly or indirectly through business operations namely stakeholders. In traditional view point, business is only concerned with the true owners of company i.e. shareholders whereby profit maximization used to be the sole objective. However, in modern era one can't sustain for long term with the traditional objective of business concerns due to increased awareness amongst various groups of society. Thus, there is a move to "*profit optimization*" objective from "profit maximization".

Triple Bottom Line

With the increased degradation of environment in world, there is a paradigm shift in priorities, objectives and focus of business. In an era of enhanced socially conscious and environmental concerns among investors, community at large etc. one cannot survive with sole objective of profit maximization. Thus, a new emerging concept is "Triple Bottom Line" which ranks the focus of companies in terms of "**P**LANET, **P**eople and **P**rofit". This is in contrast to traditional bottom line where performance measurement used to be solely done on the basis of profit making and thus appreciating share value.

5. TRIPLE BOTTOM LINE

- **PLANET (P):** This bottom line is majorly concerned with environment and it also sometimes termed as "Natural Capital Bottom Line". The main aim of this bottom line is to reduce the magnitude of ecological footprints of company through investigating the impact of corporate actions on environment throughout the Product Life Cycle (PLC).

- **PEOPLE (P):** This bottom line is concerned with human element of society in terms of company's stakeholders whereby company assesses the impact of its action on community as whole. Shift in the concept from "Shareholders" to "Stakeholders" is the basis of this outlook where company is not only accountable to owners (namely, shareholders) but to varied interested groups (namely, stakeholders).

- **PROFIT (P):** This bottom line is concerned with earning "reasonable" profit so as to give fair rate of return on capital invested by investors/ shareholders/ true owners of company while integrating the concern for environment and community at large.

Current Scenario of CSR in India

CSR evolved as voluntary to mandatory norm in India where promulgation of *Companies Act 2013* made it a mandatory norm. Section 135 deals with such mandate which states compulsory spending a part of its profit by certain companies on CSR activities.

As per Section 135 of Companies Act 2013, every company having net worth of Rupees 500 crore or more, or turnover of Rupees 1000 crore or more or net profit of Rupees 5 crore or more will spend at least 2% of its average net profit of preceding last three financial years on CSR activities.

| A)Net worth ≥ INR 500 crore | B)Turnover ≥ INR 1000 crore | C)Net Profit ≥ INR 5 crore |

Fig. 1. Companies under Mandatory Spend Norm

Top Companies spending on CSR Activities

The current rankings of companies spending on CSR activities is shown in below table:

TABLE 1: Top CSR Companies in India (2019 Vs 2018)

Rank (2019)	Company Name	Rank (2018)	Company Name
1	Tata Chemicals Ltd.	1	Tata Chemicals Ltd.
2	Infosys Ltd.	2	Ambuja Cements Ltd.
3	Bharat Petroleum Corporation Ltd.	3	Infosys Ltd.
4	Mahindra & Mahindra Ltd.	4	Mahindra & Mahindra Ltd.
5	ITC Ltd.	5	Tata Motors Ltd
6	Ambuja Cements Ltd.	6	Tata Power Company Ltd.
7	Tata Motors Ltd.	7	Bharat Petroleum Corporation Ltd.
8	Vedanta Ltd.	8	ITC Ltd.
9	Hindalco Industries Ltd.	9	Hindustan Zinc Ltd
10	Toyota Kirloskar Motor India	10	Indian Oil Corporation Ltd.

Source: The CSR Journal

Above data shows Top 10 Ranked companies spending on CSR Activities in 2019 and 2018. Infosys Ltd., Bharat Petroleum Corporation Ltd., ITC Ltd., Vedanta Ltd., Hindalco Industries Ltd. and Toyota Kirloskar Motor India have improved their Rankings as compared to previous year. Tata Chemicals Ltd. is consistently ranked no. 1 since 2016 (*Futurescape Ratings*). In 2018, out of Top 10; 3 belonged to Tata group of Companies which is consistent with the fact that Tata have always been pioneers in social investment.
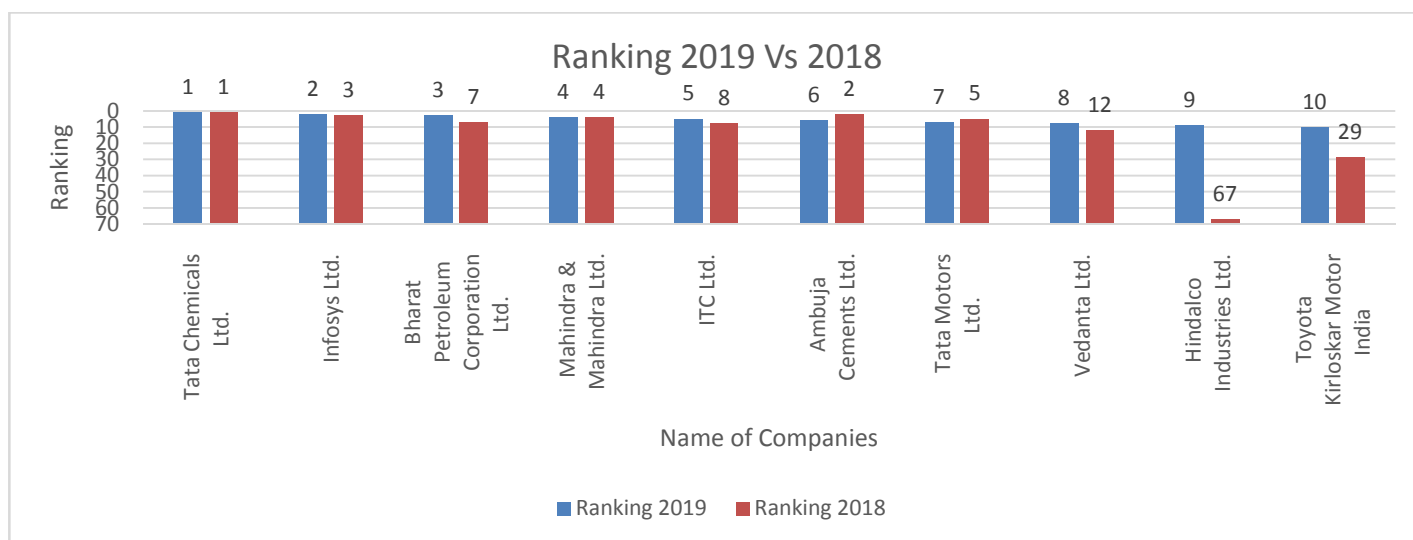
Fig. 2. Ranking of Top Ten Companies (2019 Vs 2018)

The above figure shows ranking of Top 10 companies in 2019 as compared to their own previous year ranks (2018). From the above it can be seen that Hindalco Industries Ltd. drastically improved its performance over past year i.e. bring ranked 67th in 2018 to No. 9 in 2019 whereby Tata Chemicals ltd. and Mahindra & Mahindra Ltd. are consistent in terms of their ranking in both years.

6. CONCLUSION

It is evident that Corporate citizenship or CSR has a long journey from voluntary to becoming a mandate in India. India with enactment of Section 135 of Companies Act, 2013 became the first country to mandate CSR expenditure of atleast 2% of average net profit of preceding three financial years. Tata Chemicals Ltd. is on the top of the list in the country since 2016. Since 2013 also there have many amendments that have been made to overcome the loopholes of the Act. The concept of CSR got more acceptance with emergence of the term "Stakeholder" which means all those who get affected by corporate actions. With the increasing deterioration of environment and emergence of diseases like Coronavirus, it calls foracceptance of social, moral and environmental responsibilities on part of everyone including corporate houses so that we can make "World a better place to live".

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Anaysis of India's Major Principal Agriculture Product Exports

Ekta Kharbanda*

Abstract: This paper attempts to analyze the export performance of major principal agriculture product exports from India. The study assesses the export competitiveness of major agriculture products from 2016-17 to 2018-19 by revealing the top most agriculture product export of India despite being having a major contribution in service sector with regard to GDP. The study basically focuses on floriculture, fresh fruits and vegetables, processed fruits and vegetables, animal products, other processed foods and other cereals. The time-series data has been collected from DGCIS. The study showed that it is the cereals export which is showing a rising trend. Later, growth on the basis of previous year i.e. 2018 has been reviewed and share of each product export in the year 2019 has been related with the growth prospects.

Keywords: Export Performance, Growth, Agriculture, Share, Principal

1. INTRODUCTION

International trade has a major role to play after the upcoming establishment of World Trade Organization (WTO) and following a new economic global environment. Major economic reforms in the 1990s have a tremendous effect on India's trade in agriculture and its relations on the international level. As it is known, India revealed its comparative advantage in agriculture before the ratification of Agreement on Agriculture (AOA) and held a significant place in trade with world by exporting major agriculture commodities. Today also despite being India a developing economy and progressing towards having a major contribution of GDP in service sector, still it is called a renowned supplier of major principal agriculture commodities such as tea, coffee, fresh fruits and vegetables, animal products etc.

2. CONCEPTUAL FRAMEWORK

It is the manufacturing and service sector which have contributed significantly to the growth of Indian economy whereas the contribution of agriculture sector to GDP has declined from 50 percent in 1950 to 15.4% in 2015-16. India's trade policy is affected by factors such as domestic availability of commodities, cost of production as well as global price levels. However, frequent changes in trade policy, such as reducing the import duty on a commodity in response to a shortage in supply, or decreasing minimum export price of a commodity to facilitate its exports, may have an adverse effect on the development of the agro-processing sector.
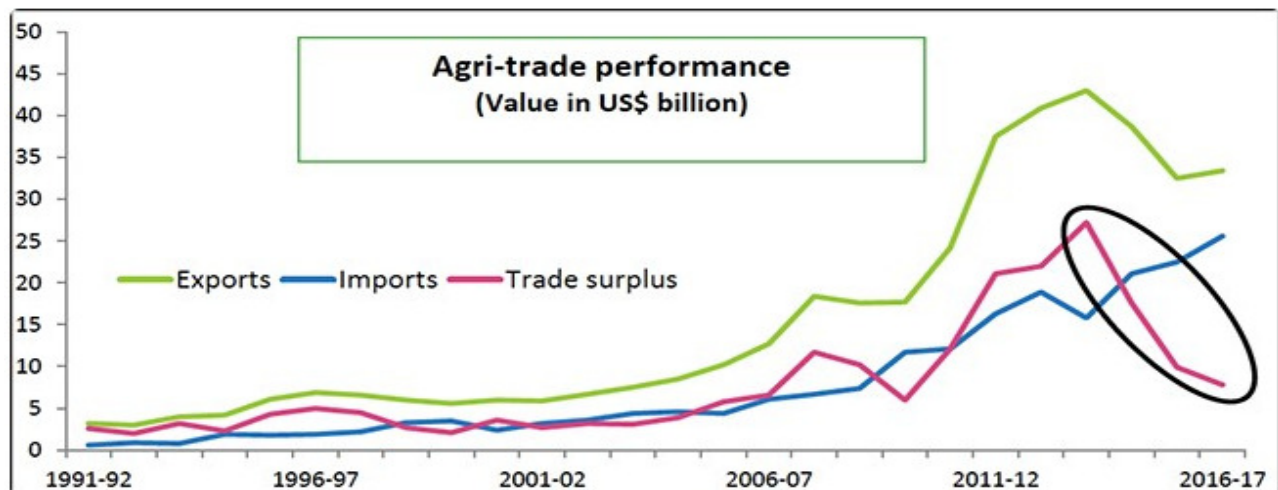

Fig. 1.1: Agri-Trade Performance (Source: CMIE Economic Outlook)

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In the last three decades, Indian agriculture exports fell by 22 percent while imports raised by 62 percent thereby resulting in a total fall in trade surplus of 70 percent. This has been shown in figure 1.1

Though India is the largest producer of agriculture commodities and exporting expected in value as other countries, still there been a major fall in exports. Thus, certain agriculture commodities should be analyzed which are exported from India. India's Export Policy is initiating measures on certain export restrictions as export duty, bans and quota restrictions.

3. OBJECTIVES OF THE STUDY

The major objectives are underlined below:

- To study the performance of principal agriculture products exported from India.

- To analyze their trends in terms of quantity and value.

- To review the growth rate and share of principal agriculture products exported from India.

4. LITERATURE REVIEW

Nageshwara et al (2009) stated that India is amongst top ten producers in the world for rice, buffalo milk, wheat, cow milk, fresh vegetables, sugar cane, potatoes, groundnut, pepper mint and buffalo meat. The technological developments, macro-economic reforms and Uruguay Round Agreement have brought major contributions in agricultural trade. The progress of agriculture is marked by lot of changes in the net trading position of India.

Kumar and Dadhich (2013) examined the growth and performance of India's Agriculture Export from 1991-2010. It has been seen though agriculture exports of Indian had shown good performance but the contribution in the total export has declined. Moreover, India was not doing well in the world market in terms of exports as expected. Indian government should focus on not only maintaining growth but also increasing the share.

Jagdambe (2016) reviewed the trade intensity and Revealed Comparative Advantage of agriculture sector with respect to trade in ASEAN for the period 2001-2013. It has been found that trade intensity and comparative advantage has increased in terms of export of agriculture exports. However, certain products were not up to the mark such as meat, vegetables, fruits, rice and other cereal products. Hence, Indian exporters should focus on these markets.

Suresh and Mathur (2016) analyzed the trends in export of agriculture commodities. Growth rates, instability indices and comparative advantage were estimated. Revealed Comparative advantage has shown improvement in case of cotton, maize and certain fruits whereas declining for others like spices, rice and wheat.

Parmasivan and Pasupathi (2017) studied the growth and performance of Indian agro based exports which comprise of Basmati rice, Non-basmati rice, Oil meals, Cotton Spices etc. Agro based industries are very essential which helped in building social development. Export of agricultural products from India have vast potential and demand in international market. Therefore it is concluded that Indian agriculture export will be more prevalent in future particularly rice and spices.

It has been concluded from the above studies that these studies have more focused on comparative advantage, growth and performance of Indian Agriculture Product exports but they rarely emphasized on the need to have relation of both growth and share of major principal agriculture products exported from India. Therefore, this paper deals with analyzing the performance through trends and then reviewing the top most product in terms of both share and growth.

5. DATA AND METHODOLOGY

The present study is basically concerned with the major agriculture commodities exported from India. The study has been carried out on the basis of time-series secondary data. The data on export value and quantity have been obtained from Directorate General of Commercial Intelligence and Statistics, Ministry of Commerce, Government of India. The major agriculture export commodities have been taken into consideration during the period 2016-17 to 2018-19. Trend model has been used for analysing the performance of major principal agriculture commodities export in terms of quantity and value.

6. ANALYSIS AND FINDINGS

Agriculture and Processed Food Products Export Development Authority (APEDA) has identified major principal agriculture products exported from India. These are floriculture, fresh fruits and vegetables, processed fruits and vegetables, animal products, other processed foods and other cereals.

A proper analysis has been done order to examine the performance of major principal agriculture products exported from India in terms of Quantity (Metric Tons) and Value (Lacs). These products are considered variables which are observed annually from 2016-17 to 2018-19. The data of these products export has been categorized in terms of quantity and value shown in table 1.1 and 1.2 respectively.

TABLE 1.1: PRINCIPAL AGRICULTURE PRODUCTS EXPORT OF INDIA: QUANTITY (MT)

Products	Floriculture	Fresh Fruits & Vegetables	Processed Fruits and Vegetables	Animal Products	Other Processed Foods	Cereals
YEAR	QTY (MT)	QTY (MT)	QTY (MT)	QTY (MT)	QTY (MT)	QTY (MT)
2016-17	33994.65	4430728	864427.1	1444165	2000438	11813984
2017-18	35188.31	2953250	962406	1487852	1888630	13734872
2018-19	34962.47	3652055	1104684	1451882	1913143	13353737

Source: DG&CIS, Ministry of Commerce

TABLE 1.2: PRINCIPAL AGRICULTURE PRODUCTS EXPORT OF INDIA: VALUE (LACS)

Products	Floriculture	Fresh Fruits & Vegetables	Processed Fruits and Vegetables	Animal Products	Other Processed Foods	Cereals
YEAR	VALUE (LACS)	VALUE (LACS)	VALUE (LACS)	VALUE (LACS)	VALUE (LACS)	VALUE (LACS)
2016-17	107253.5	1068561	696062.8	2944027	1913538	4059527
2017-18	117251.1	974380.1	745553.9	2971239	1893863	5179639
2018-19	143650.3	1061578	832652.7	3053012	2096092	5643291

Source: DG&CIS, Ministry of Commerce

Major trends have been witnessed in terms of both quantity and value.

TRENDS:

I.   IN TERMS OF QUANTITY (METRIC TONS)

The figure 1.2 shows that is the only product i.e. cereals which is showing a rising trend which implies that India is not only a producer but also a largest exporter of cereal products in the world. Its major export destinations in the year 2018-19 include Iran, Saudi Arabia, UAE, Nepal and Iraq. Being the major demand of global market towards India's cereal products like Rice, Wheat and other cereals, the quantity of cereals is capable of maintaining a great environment. While other products are showing a fluctuating trend, it is the floriculture which is showing minimum quantity of products (fruits, vegetables seeds) and floriculture exported from India.
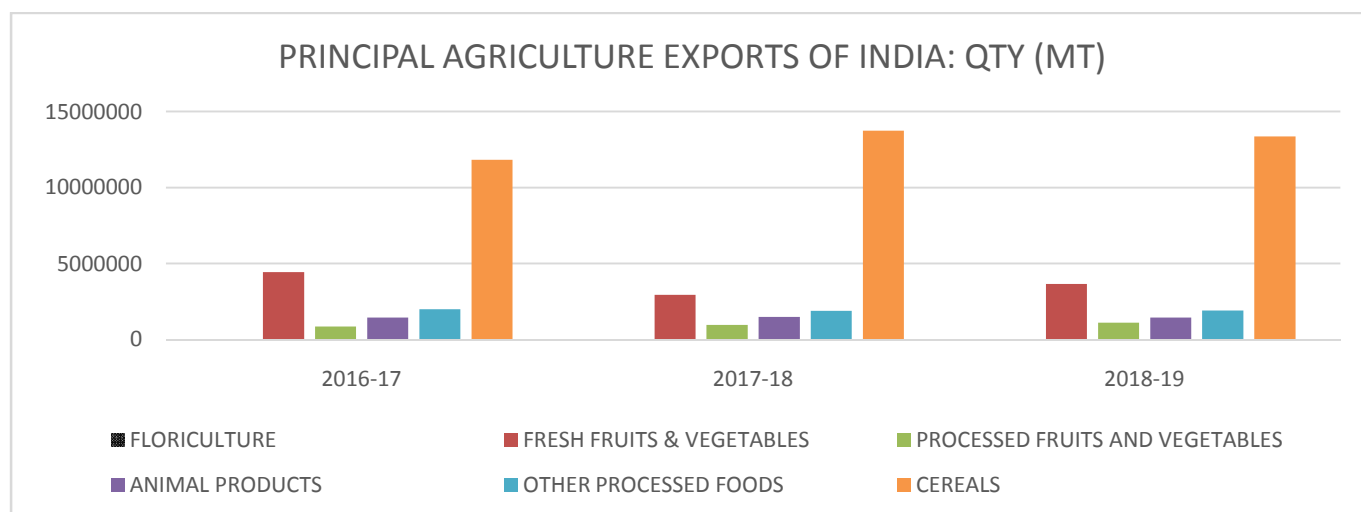

Figure 1.2

II. IN TERMS OF VALUE (LACS)

Figure 1.3 shows that it is the cereals export only which is showing a rising trend at maximum value of Rs. 5643291 Lacs in the year 2018-19. It has also been witnessed that animal products export also exhibiting a rising trend. This implies a significant contribution of export of animal products to the Indian Agriculture Sector. The export of Animal Products includes Buffalo meat, Sheep/ Goat meat, Poultry products, Animal Casings, Milk and Milk products and Honey etc. Floriculture is not performing well in terms of value also but showing a rising trend.

Figure 1.3
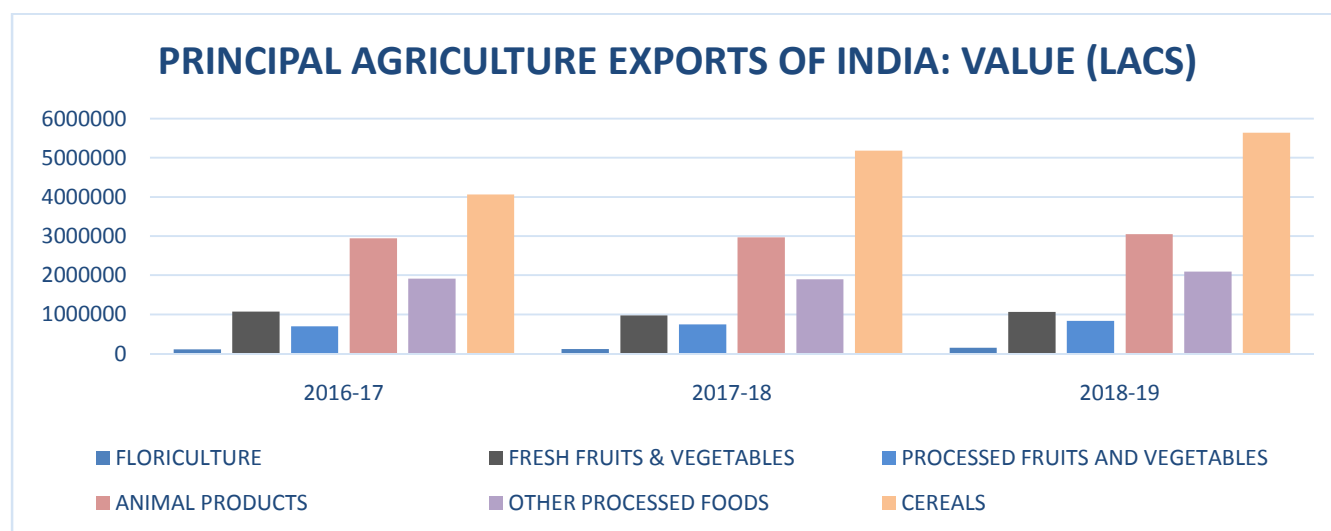
RELATION BETWEEN GROWTH AND SHARE OF EACH COMMODITY EXPORT

On the basis of above trends, it has been witnessed that cereals export (in terms of quantity and value) are performing well. It is expected that there should be a positive relation between growth and share of commodity exports. This is shown in table 1.3 where percentage growth on the basis of previous year i.e. 2017-18 and share of each product export of year 2018 has been reviewed. Though the trend was increasing in case of cereals but the relation between growth and share of cereals is not satisfactory.

It is concluded that the performance of cereals export is not desirable as growth is not accompanied with the share. The share of cereal export is the highest but cereal export is lacking in its growth. It is the floriculture which is maintaining a highest growth rate of 22.52 percent despite lacking in the share. This can also be shown in the pie-charts below:

TABLE 1.3

Product	% Growth (on the Basis of Previous Year)	%Share (2018)
Floricture	22.52%	1.12
Fresh fruits & vegetables	8.95%	8.27
Processed fruits and vegetables	11.68%	6.49
Animal products	2.75%	23.8
Other processed foods	10.68%	16.34
Cereals	8.95%	43.98

Source: DG&CIS

% GROWTH

FLORICTURE · FRESH FRUITS & VEGETABLES · PROCESSED FRUITS AND VEGETABLES · ANIMAL PRODUCTS · OTHER PROCESSED FOODS · CEREALS

8.95% · 22.52% · 10.68% · 2.75% · 11.68% · 3.95%

%SHARE

FLORICTURE · FRESH FRUITS & VEGETABLES · PROCESSED FRUITS AND VEGETABLES · ANIMAL PRODUCTS · OTHER PROCESSED FOODS · CEREALS

1% 8% · 7% · 44% · 24% · 16%
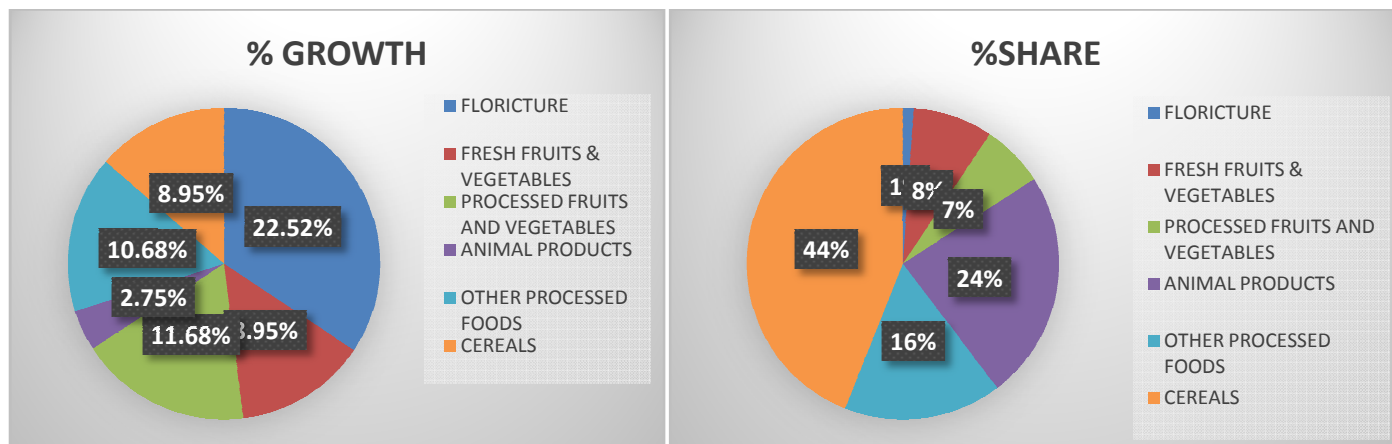
7. CONCLUSION

This paper assesses the performance of major principal agriculture product exports in the context of India. Trends have been witnessed regarding the export competitiveness in which cereals export showed a rising trend in terms of both quantity and value. Moreover, performance is then analyzed through the relationship between growth and share. It is cereals which have greatly contributed in the total agricultural export but its growth rate is less as compared to other principal products exported from India. Therefore, India's export policy should focus on maintaining a desirable growth in the export which should be accompanied by positive increase in share. A proper technique to empirically examine the relation between growth and share is Rank-Correlation which can be done in further research.

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A Study of the Impact of Lockdown Due to COVID-19 on the Mental Health of Pupil Teachers

Dr. Promila Dabas*, Dr. Vanita Anand**

Abstract: Mental health refers to cognitive, behavioral and emotional well-being of an individual. It is mainly concerned with how a person thinks, feels and acts. It also determines how one handles stress, make choice/decisions and relates to others around them. It is important to note that good mental health depends on a delicate balance of a large number of factors that may contribute to the onset of mental disorders of various degrees.The mental health concerns have become more pertinent in today's times due to the unprecedented crisis attributed to COVID 19 pandemic. The effects of Covid-19 can last a long time and shape mentalhealth for many years to come, long past the events that precipitated them. The present study was carried out to study the impact of lockdown due to this pandemic on the mental health of pupil teachers.The research study was conducted on first year batch (2019-2021) of B.Ed pupil-teachers in the month of May to identify the mental health issues and to provide with the range of coping skills to deal with the same. This survey was conducted by the researchers followedby the interventions for improvement in the status of mental well being.

1. INTRODUCTION

"**Mental health is not a destination but a process. It's about how you drive and not where you're going**."

Mental health refers to cognitive, behavioral, and emotional well-being. It is all about how people think, feel, and behave. People sometimes use the term "mental health" to mean the absence of a mental disorder. According to the World Health Organization: "Mental health is a state of well-being in which an individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively, and is able to make a contribution to his or her community. The WHO stress that mental health is "more than just the absence of mental disorders or disabilities." Peak mental health is about not only avoiding active conditions but also looking after ongoing wellness and happiness. They also emphasize that preserving and restoring mental health is crucial on an individual basis, as well as throughout different communities and societies the world over. Everyone has some risk of developing a mental health disorder, no matter their age, sex, income, or ethnicity. Social and financial circumstances,

biological factors, and lifestyle choices can all shape a person's mental health. A large proportion of people with a mental health disorder have more than one condition at a time.

It is important to note that good mental health depends on a delicate balance of factors and that several elements of life and the world at large can work together to contribute to disorders. The most common types of mental illness are anxiety disorders, mood disorders, schizophrenia disorders. Mental illnesses are more common than cancer, diabetes, or heart disease. WHO report estimates the global cost of mental illness at nearly $2.5 trillion (two-thirds in indirect costs) in 2010, with a projected increase to over $6 trillion by 2030. Evidence from the WHO suggests that nearly half of the world's population is affected by mental illness with an impact on their self-esteem, relationships and ability to function in everyday life. An individual's emotional health can impact their physical health. Poor mental health can lead to problems such as the ability to make adequate decisions and substance abuse. According to 2020 data, mental illnesses are stagnant among adults, but rapidly deteriorated among the youth, categorized as 12 to 17 year old.

The mental health effects of Covid-19 can shape health for many years, long past the events that precipitated them. We have been focusing, correctly, on saving lives and mitigating the short-term consequences of Covid-19, but the long-term consequences may be equally, if not more, important.The following issues have come to light in times of pandemic:

- Fear and worry about your own health and the health of your loved ones, your financial situation or job, or loss of support services you rely on.

- Changes in sleep or eating patterns.

- Difficulty sleeping or concentrating.

- Worsening of chronic health problems.

- Worsening of mental health conditions.

- Increased use of tobacco, and/or alcohol and other substances.

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In light of the growing need for mental health awareness, mental health awareness week was established in the year 1990 and world mental health day was established on 10 October 1992.

This year Mental Health Awareness Week was celebrated from 18 may to 24 may. The theme was kindness. In light of the mental health awareness week, a survey on the mental health of students in the times of pandemic was conducted by the researchers followed with interventions for improvement in the status.

2. THE SURVEY STUDY

Mental Health influences behavior, thinking and feeling. But Conservative societies, one like India, stigmatize the concept of Mental Health, which needs to be dealt with right now. As a part of the Mental Health Awareness Month, a survey was conducted in the month of May, to understand the mental condition of students. The survey was mainly focused on the impact of COVID19 on the Wellbeing of the Students. It was designed keeping in mind that not only mental health but the financial, emotional and hygiene condition needs to be taken into consideration. The survey was conducted on first year batch (2019-2021) of B.Ed **pupil-teachers** through google forms. Google form questionnaire was divided into five sections, which focused on different aspects namely;

1. How the students were living with current Pandemic situation.

2. The financial and emotional aspect.

3. The Sleep and Hygiene Habits of the students.

4. The mental wellbeing of the students.

5. The fifth section was about Self Care and Mental Health Activities

3. ANALYSIS OF THE DATA

There were 88 responses of the **pupil-teachers** received for the survey.The first section was meant to understand how the students were living with current Pandemic situation. It is important to mention that about 61% of students accepted that the lockdown had taken a toll on their mental health. This shows how important it is to take steps to help and guide the students in right direction during a crisis like this.

The second section was regarding the financial and emotional aspect. Mental health is related to other factors, which cannot be ignored. Financial and Emotional wellbeing of a person can talk a lot about their mental wellbeing. About 52.3% reported

that they had observed a financial setback due to the pandemic. Also, 90% of them are taking this opportunity to reflect upon their life, which shows how drastically the environment around them had changed.

The third section of the survey was about the Sleep and Hygiene Habits of the students. When there are mental and emotional problems, it effects the sleep, diet and hygiene of an individual. About 93% students agreed that their eating and sleeping habits had changed. The changes in eating and sleeping habit can cause further health problems. Also, there has been a lethargic behavior observed in students due to lack of motivation.

The fourth section consisted of the mental wellbeing of the students. Now, it is interlinked to the above three sections, but here the questions focused on how the students felt and how they dealt with the feelings. About 77% students were eagerly waiting for the lockdown to end, so that they could go back to their regular life. Feeling of gloominess, irritation, anger shows how difficult it has become for them to live in the current atmosphere. Due to the current situation, 66% students said that they felt exhausted. Because of these changes, some of them also felt withdrawal from family and friends.

The last section was about Self Care and Mental Health Activities that students were engaged in. Students were actively participating in Physical activities like High intensity Cardio, Aerobics, Yoga, Dance and household works. Students were engaged in multiple recreational activities like cooking, baking, handicraft work, listening to podcast/music, mindfulness exercises etc. About 61.4% engaged in regular self-care. The students were aware of the changes around them and were trying their level best to cope up with it.

4. THE INTERVENTION

"What mental health needs is more sunlight, more candor, and more unashamed conversation." - **Glenn Close**

It is imperative for us to understand that mental health is not a destination, but a process. It is all about how you drive and not where you are going. Everyone grows at different rates and that is okay. Keeping this in mind, a workshop was conducted with B.Ed pupil teacher to foster awareness about mental health and to generate coping skills to deal with current pandemic situation.

The workshop, titled, **"Grow Through What You Go Through"** was an attempt to understand what is going through the minds of pupil-teachers and give them the necessary advice/suggestions to face the adverse situations. Researchers acted as resource **persons (Dr. Promila Dabas and Dr.**

Vanita Anand (Assistant Professors, Department of Education, MSI). and conducted two focused sessions with pupil teachers.The focused session 1 was the orientation based and introduced the pupil teachers with the theme and perspective of WHO on mental health. The second session was more practice based to resolve isssues of mental health of pupil teachers, with practice based activities. The workshop was presided over by **Prof. J.P. Singh** (Senior Professor, MSI) and he shared his life long learning and experiences with the younger generation.

Mental health issues have always been a part of our lives, but were never taken seriously or even talked about. Now with the current pandemic situation, being in lockdown/quarantine is forcing us to think and talk about the issues that we, very easily bury in our minds under all the other pressures. Parents as well as teachers are concerned about the effect this situation will have on the mental well-being of the students. And to work on that, this intervention was organized and conducted as a means of discussion on the various issues the students (pupil teachers) are now facing.

The survey that we conducted prior to the workshop revealed that most of the students were facing mental health issues because of the lockdown. With the situation being this critical, everything is uncertain, our future, job prospects and even the financial situation of our family. This is taking a toll, on the students too. Maximum students revealed that they are facing issues in their eating and sleeping habits. This is bound to lead to other diseases or disorders, and the only way to prevent them is to make sure we are at a better place, mentally. Feeling gloomy, irritated, angry are some of the effects the lockdown is causing.

As discussed, it is important for us to discuss the issues with anyone who we think can help us deal with them, be it our parents, teachers, siblings or friends. Once we share how we are feeling, we can understand how much it is affecting us, because taking it all out is a form of introspection. To take our mind off such things, we can also indulge in physical exercises like yoga, dance, household chores. Free time also gives us an opportunity to pursue our long-lost hobbies like reading, writing, art, cooking, etc. Watching movies, tv series or even having video calls with our friends and family can also help us in coping up with the changing times.

Our mood, thinking and behavior influence our mental health to a great extent and vice-versa. Taking one step at a time is what should be done. We should be vocal about how we feel about various things, situations and people that affect us. Practicing "forgive and forget" will also aid us in becoming peaceful. A happy person will be well rested and a well-rested person will be happy and content. This is the circle of our life.

Rest is as important as exercise for both, physical and mental well-being.

Showing gratitude, coming to terms with the situation, doing self-introspection are some ways of changing our attitude towards life. This will not only help us, but others too.

Taking every situation as an opportunity to learn, improve, or even think about is another way of dealing with such issues.

5. CONCLUSION

Mental health includes our emotional, psychological, and social well-being. It affects how we think, feel, and act. It also helps determine how we handle stress, relate to others, and make choices. Mental health is important at every stage of life, from childhood and adolescence through adulthood.

In these hard times fear, worry and stress has been surrounding all of us. Added to the fear of contracting the virus in a pandemic such as COVID-19 are the significant changes to our daily lives as our movements are restricted in support of efforts to contain and slow down the spread of the virus. Some common emotional outcomes which all of us have been facing includes stress, depression, irritability, insomnia, fear, confusion, anger, frustration, boredom, and stigma associated with quarantine.

This workshop and the survey conducted beforehand helped students in identifying these problems which they are going through and got a platform to talk about these matters as well. Pupil tecahers were able to see and understand that they are not alone and others are also facing similar problems and they received support from teachers who assured thatthey can reach out to them if we want to talk and realised that web of relations around them acts as a support system. The survey helped pupil teachers realize many aspects of life which are affecting their mental health like the financial aspect, the emotional aspect and the future and helped us in seeing how that is affecting our daily routines and our eating and sleeping habits and our general well-being in return.

The pandemic has affected our present lives and our future too and during these uncertain times it was really helpful to get assistance from our teachers who not only helped us in understanding that these issues we are going through are normal and that it is imperative to talk about it and share our thoughts and feelings with others but they also suggested some more things we can do to let go off the stress and feel more relaxed. This helped us in seeing that instead of looking at the bad aspects we should look at some of the positive things which have happened so far like appreciating the time we are spending with our families and finding time to develop new skills and hobbies. The session also encouraged the students to

try out different things like exercises and meditation and forming a routine to help us in being calmer and more relaxed.

This workshop was therefore a really successful attempt to talk about the stigma associated with mental health and to create a good support system with the teachers and students to help us in building our well-being. It helped the pupil teachers in not only understanding the problems and issues which everyone is going through but it also helped in seeing that mental health is not a taboo and rather it is something which needs to be discussed more openly to understand and help those who need assistance.

In the end as **Fred Rogers** said "**Anything that's human is mentionable, and anything that is mentionable can be more manageable. When we can talk about our feelings, they become less overwhelming, less upsetting, and less scary**."

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Coronavirus

Dr. Vanita Anand*

Coronavirus was first identified by virologists J D Almeida, D M Berry, C H Cunningham, D Hamre et al, who published their findings in 1968 in the journal Nature, "these viruses are members of a previously unrecognised group which (the virologists) suggest should be called the coronaviruses, to recall the characteristic appearance by which these viruses are identified in the electron microscope."

The origin of the word 'corona' has been taken from the sun as the virologists compared "the characteristic 'fringe' of projections" on the outside of the virus with the solar corona.

There are 40 different varieties of coronavirus and they mainly infect human and non-human mammals and birds. They reside in bats and wild animals and can spread to other animals and hence to humans.Zoonotic coronaviruses have emerged in recent years to cause human outbreaks such as coronavirus disease 2019 (COVID-19), severe acute respiratory syndrome (SARS), and Middle East respiratory syndrome (MERS).

Taxonomy of coronaviruses that can cause disease in humans:

Genus	Varieties causing human disease
Alphacoronaviruses	Human coronavirus 229E (HCoV-229E)
Betacoronaviruses	- Human coronavirus HKU1 - Human coronavirus NL63 (HCoV-NL63, New Haven coronavirus) - Human coronavirus OC43 (HCoV-OC43) - Middle East respiratory syndrome-related coronavirus (MERS-CoV or HCoV-EMC; the cause of MERS) - Severe acute respiratory syndrome coronavirus (SARS-CoV-1, the cause of SARS) - Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2 or 2019-nCoV, the cause of COVID-19)

https://www.cebm.net/wp-content/uploads/2020/03/JA7.png

The virus that causes COVID-19 is thought to have originated in bats and then spread to snakes and pangolins and hence to humans, perhaps by contamination of meat from wild animals, as sold in China's meat markets.

On 31 December 2019, a cluster of cases of pneumonia of unknown cause, in the city of Wuhan, Hubei province in China, was reported to the World Health Organisation. In January 2020, a previously unknown new virus was identified, subsequently named the 2019 novel coronavirus, and samples obtained from cases and analysis of the virus' genetics indicated that this was the cause of the outbreak. This novel coronavirus was named Coronavirus Disease 2019 (COVID-19) by WHO in February 2020.The virus is referred to as SARS-SoV-2 and the associated disease is COVID-19.

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Illness in humans mainly manifests as a respiratory infection, or sometimes gastrointestinal infection. The clinical spectrum of illness varies from no symptoms or mild respiratory symptoms to severe, rapidly progressive pneumonia, acute respiratory distress syndrome, septic shock, or multi-organ failure resulting in death.

Epidemiological evidence shows that 2019-nCoV can be transmitted from one individual to another. In the previous outbreaks of other coronaviruses such as MERS-CoV and SARS, human-to-human transmission occurred most commonly through droplets, personal contact, and contaminated objects. The modes of transmission of 2019-nCoV are similar.

According to WHO, additional investigations are needed to determine how the patients were infected, the extent of human-to-human transmission, the clinical spectrum of disease, and the geographic range of infection.On 30 January 2020, the Director-General of WHO declared the 2019-nCoV outbreak a public health emergency of international concern under the International Health Regulations (IHR) (2005).COVID-19 outbreak was declared as pandemic by WHO on 11 March 2020. According to WHO it is a controllable pandemic and urged all countries to take a comprehensive approach considering their circumstances and with containment measures as the central pillar.

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