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सम्पादक –

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संपादकीय कार्यालय

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C/o Dr. V. J. Patil, 'Prajyot', Plot No. 8, Survey No. 101/2, Mundada Nagar, Jalgaon (M.S.) 425002

१) सम्पादन – प्रकाशन एवं संचालन अवैतनिक

२) कला साहित्य संस्कृती समाज इतिहास राजनिती एवं आर्थिक विषयों पर केंद्रीत शोधपत्र आमंत्रित है।

३) जर्नल ऑफ रिसर्च ॲन्ड डेव्हलपमेंट में प्रकाशित शोध/विचार पत्रों में व्यक्त चिन्तन एवं दृष्टीकोन सम्बधित लेखकों के है। उससें जर्नल का सहमत होना आवश्यक नही है।

४) सदस्यता फार्म एवं नियमावली अंक के अंतिम पृष्ट पर देखे।

५) जर्नल ऑफ रिसर्च ॲन्ड डेव्हलपमेंट का प्रकाशन प्राध्यापकों को प्राध्यापकों के द्वारा, प्राध्यापकों के लिए एक अव्यावसायिक सहयोगी प्रयास।

६) सदस्यता शुल्क का भुगतान नगद मनी ऑर्डर व्दारा जर्नल ऑफ रिसर्च ॲन्ड डेव्हलपमेंट जलगांव के पतेपर भिजवाए।

७) मराठी भाषाके शोध पत्र प्रकाशित किए जाएगे।

८) इस शोध पत्रिका को प्रकाशित करते हुए पुर्ण सावधानी बरती गई है। फिर भी किसी प्रकारकी त्रृटि के लिए सम्पादक प्रकाशक मुद्रक जिम्मेदार नही होगा। समस्त विवादों का न्यायक्षेत्र जळगांव होगा।

९) जर्नल ऑफ रिसर्च ॲन्ड डेव्हलपमेंट में प्रकाशनार्थ प्राप्त होने वाले शोधपत्रो का चयन एव उनकी स्वीकृती । अस्वीकृती का निर्णय सम्पादन मंडल द्वारा लिया जाता है।

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I N D E X

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A study of correlation of concept and personality development among college level lawn tennis players

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Introduction:-

Although the effect of psychology on sport performance have long been recognized there are more and more psychologist and sport export dealings with different research domain there is to take a border and look at the Latent factors of success and failure sport. Tennis success is characterized not only but the level of sports skill. Of athletes and their professional sports. Readiness but also buy a number of factor influencing and individual behavior such as emotional control factor focus on action independence on responsibility of tennis player.

Self-concept:-

Self-concept has been a topic of interest of many discipline such as theologian, philosophers political, scientist, and novelist.

“Self-concept according to Gilford, 1996 is not an inherited quality rather it is a form formal as a result of an individual experience and interaction with his environment”.

Self-concept has been define by different psychologist in different way.

“Self-concept as more or less perceptual object s resulting from present and past self-observation, or what a person believes about himself-Ramey”. Personal experience and reaction of other person together with filling of success and failure are instrumental in May way in development of self-concept.

“Maslow 9171-futher contents that totality of attitude judgment and value of an individual relating to his behavior ability and qualities are called self-concept.”

Psychologist in recent year begin to relieve that greater progress in understanding human behavior can become possible thought study of the individual as a whole. It is the concept of self which personalities the individual way of looking at himself. it is also signifies this way of thinking and be having their problem of measuring the self-concept to a layer Steel remain unsolved.

Self-concept is multi-dimensional construct that refer to and individual perception of self in relation to any number of characteristics as academic and nonacademic sports person. Sports person while closely related with self-concept clarity it pre suppose but simply an individual awareness of their self. It is also more general than self-esteem there for self-concept is the core dementition of one personality. Determine the kind of adjustment the person will make. Change in the self-concept will bring change in the

entire personality .changing oneself concept required tremendous insight this mean that of person must be able to see himself.

Personality:—

Personality is an organization of physiological variable or some behavior characteristics and functional as a unified whole and have a three domains introvert and Extrovert, ambient.

Person fulfill feeling is needs through physical mental interaction emotional family cultural artist skill etc. and his inter act with his will the chemical change occurring in person is called person personality .there for personality may predict other commonly associated with academic performance for example motivation the needed was to identify the psychological mechanism that generate the regulates in the behavior by each dimension.

Objective:—

1) To find out Co-relation between self-concept and personality junior College level lawn tennis male and female players

2) To find out correlation between self-conscious and personality junior College level lawn tennis males players.

3) To find out correlation between cell concept and personality junior College level lawn tennis female player

Hypothesis:—

1) There is no co-relation difference between self-concept and personality of junior College level lawn Tennis males players.

2) There is co-relation different between self-concept and personality of lawn tennis junior College level lawn Tennis female player

Methodology:—

The sample wear collected from lawn tennis player of different college of Jalgaon selected sample was program probability sampling techniques in which random sampling was done. Total 60 sample they are taken in which 30 male lawn tennis player .and 30 female lawn tennis players were there randomly selected the age of sample was from 17 to 25 years.

Analysis and data interpretation:—

Table no 1:- Correlation between cell concept and personality among Jr .college level lawn tennis male player

Variable	N	Mean	SD	Co -relation	Significant Level
Self-concept	30	142.63	18.22	0.92	0.05
Personality	30	44.16	5.68		

Indicate that lawn tennis college level male player self-conceive mean score and SD score 142.63 and 18.22 respectively. Where personality score mean and SD 44.16 & 5.68 there is correlation between self-concept and personality is 0.92 it is so high positive correlation between variable it indicates that concept and personality have high positive correlation it concludes that correlation between self-concept and personality high positive correlation

Table no 2:- Correlation between cell concept and personality among Jr .college level lawn tennis female player

Variable	N	Mean	SD	Co- relation	Significant Level
Self-concept	30	8.77	5.36	0.90	0.05
Personality	30	4.16	2.57		

Indicate that Jr college level lawn tennis female players self-concept mean and SD-8.77 & 5.36 respectively. Where personality's score mean and SD-4.16 & 2.57 There is correlation between self-concept and personality is 1.90 it is show positive correlation it indicates that self-concept and personality have high positive correlation score maintained in table number 2 is lies range between 0.99 to 0.88.

Conclusion:—

Hypothesis no 1— Relations call between self-concept and personality was positive 0.92 which indicated positive correlation between variable hens there is no significant correlation between self-concept and personality of lawn tennis college level male players this hypothesis is rejected it means personality Hed positive effect on self-concept.

Hypothesis no 2 —There is no correlations score between self-concept and personality was positive0.90 which indicate positive correlation between variable hens there is no significant correlation between self-concept and personality of lawn tennis college level female players this hypothesis rejected it means personality head positive effect on self-concept.

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An Overview of Green Library and its Initiatives

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Abstract:
The purpose of the paper is to identify the green library and initiatives of libraries at national and international levels. So, the paper highlights the concept of a green library, the Environmental movement, the Need for Libraries to have Environment Sustainability Features of Green Library, the Advantages of green Libraries, various Green Library Standards, the Role of Librarians in Green Libraries, Major green library initiatives across the world, green library initiatives in India. points are discussed.
Keywords: Green Library, Green Movement, Sustainable Library

Introduction:

A green library is one that designs its physical space with the newest, most cutting-edge technology and offers its patrons an atmosphere that is environmentally friendly. The term “green library” first appeared in the early 1990s, and it is currently becoming more and more common in the field of library and information science. A sustainable library, often known as a green library, is one that was designed with the environment in mind. Through its assortment of environmentally friendly and sustainably constructed facilities, as well as via its public library activities, the Green Library informs the general public about environmental concerns. Green libraries are built carefully, taking into account everything from site selection to structural design, energy use, material use, and effects on human health, among other things. They maximize the impact of natural sunshine and airflow.

Green Library:

Green libraries are defined in the Online Dictionary of Library and Information Science (ODLIS). “Green /sustainable libraries designed to minimize the negative impact on the natural environment and maximize indoor environment quality by means of careful site selection, use of natural construction material and biodegradable products, conservation of resources like water, energy, paper, and responsible waste disposal recycling, etc”(Joan M. Reitz, n.d.).

A green library is meant to reduce negative influence on the natural environment while maximizing interior environment quality through careful site selection, the use of natural building materials and biodegradable products, resource conservation, and responsible waste management.

Environmental Movement:

Humans have begun to change the environment to meet their needs, thus the environment is being negatively affected. As a consequence of growing levels of smoke, pollution in the atmosphere, and more rubbish as a result of the industrial revolution, the modern environmental movement began about 1960. As a result, the United Nations Conference on the Human Environment convened in Stockhom, Sweden, in 1972, under the leadership of the United Nations. The primary goal of this conference was to create environmental awareness. Hence, in the 1990s, the green movement is slowly arriving in the domain of library administration and its worth is expanding to date(Antonelli, 2008).

Need of Libraries for Environment Sustainability:

The global temperature is continuously increasing and thus the environment is getting degraded. Global temperature increases due to environmental pollution and greenhouse gases. So, it is necessary to implement awareness and mechanisms to control environmental pollution and greenhouse gases for combating climate change. A library is a social organization. The library is linked to people as well as the community. Libraries play an important role in sustainability solutions because they give services to individuals who can influence change. It is necessary to establish a new image of the library in the modern world.

Features of Green Library:

- A library is located in a populated area and is user-friendly(Rabidas, 2016).
- Materials that are sustainable, recyclable, and regionally available are used.
- Reflective roofs, ground, and insulating windows are employed.
- Measures are taken to conserve resources such as water, energy, and paper.
- Using energy-saving lighting to reduce energy consumption.
- Indoor plants are used in the library to keep the environment clean and pleasant and suitable trees are planted in the premises.
- There is a constant circulation of healthy and fresh air in the library
- This library employs eco-friendly technologies.

Advantages of Green Library:

- Minimum energy consumption.
- The budget is saved since sustainable materials are utilized, and no extra funds are necessary.
- Frequent maintenance is not required.
- A user-friendly and healthy environment is always maintained in the library.
- Resources are being used to their maximum potential.
- The library building has maximum natural light
- There is comfort zone facility for staff and users
- Eco-friendly and user-friendly library services are provided
- Library plays a role in environmental conservation

Green Library Standards:

- Chicago Illinois standard
- Brown Green Standard (IGBCS)
- Green rating for integrated Habitat Assessment (GRIHA)
- The leadership in energy and environment design (LEED)
- Building research establishment environment assessment method (BREEAM)
- United Nations Development Programme (UNDP)
- Indian Green Building Council standard(Biswas, 2019)(Hemade & Standard, 2022).

Role of Librarian in Green Library:

The term “green librarian” can refer to a librarian who works in an eco-friendly green library. The library which promoting the use of electronic books, journals, and other resources that may be used to save space and paper. The librarian should be implementing procedures like soft copying, microfilming old literature, and weeding-out outdated books. utilizing a variety of internet and electronic media techniques for communicating. working with the eco-library system and identifying people who are willing to work(Vasanthi, 2019).

Major green library initiatives across the world:

- Anythink Brighton Library, USA
- Blair Library, USA
- Spanish Peaks Library, Walsenburg, UK
- The National Library, Singapore
- Fayetteville Public Library, Minneapolis, USA
- Seattle Central Library, USA
- Geisel Library, University of California, USA
- Crowfoot Branch, Calgary Public Library, Canada.

Green library initiatives in India:

According to arecent current study by the US Green Building Council, India is among the top 10 countries outside of the US for innovative energy and environmental design. Here are some further green libraries: (Biswas, 2019)

- Karnataka university library Dharwad
- Mumbai University Library:
- Madras University Library
- Anna Centenary Library (ACL
- NIT, Silchar
- Delhi University Library
- Calcutta University Library
- PermaKarpo Library, Ladahk in Indian Himalayas(Mondal, 2021).

Conclusion:

This article reviews the Green Library and its inception. If the concept of a green library is to be implemented more effectively in the library, it is necessary to consider it in the library evaluation. A must-have self-assessment framework for the small public as well as academic libraries. Since the library is a social institution, people from every stratum of society and every age group are connected there, so the awareness regarding environmental awareness can be well developed

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Contribution To Euglenoids From Hartala Lake, India : Genus - *Euglena* Ehr. 2.

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ABTRACT

The present communication deals with the study of 08 taxa of genus *Euglena.* Of these *Euglena limnophila*Lemm. Var.s*wirenkoi*(Arnoldi) Popova, *Euglena pavlovskoensis*(Elenk. e*t* V.Poljansk.) Popovaare reported for the first time from India.

INTRODUCTION

The occurrence and distribution of euglenoidsin Maharashtra is known through the work of Gonzalves and Joshi 1943;Kamat, 1963,1964, 1968,1974; Kamat and Freitas, 1976;Ashtekar, 1982; Nandkar 1983;Barhate and Tarar, 1985;Bhoge and Ragothaman, 1986;Bodas, 1991; Mahajan, 2001; Nandan and Mahajan, 2002; Jawale*et al.*, 2003; Mahajan and Nandan, 2004; Divekar*et al.*, 2005;Nerpagar and Nandan, 2005; Dhande*etal* 2019; Patil *etal* 2021. During extensive study on algal flora of Hartalalake , district Jalgaon (M.S.) the authors collected taxa of euglenoids.

MATERIALES AND METHODES

The collections were made early in the morning between 7.00 to 10.00 am during 2004 to 2007 from Hartala lake (21^0 00'20.56" north latitude and $76^0$01' 31.31" east longitude), (M.S.). All the collected samples are observed fresh as far as possible and later preserved in 4 % formalin for further studies. Camera lucida drawings were made with the help of mirror type of camera lucida. The identification of taxa is based on relevant research papers. The material is deposited in the Department of Botany, Dhanaji Nana Mahavidyalaya, Faizpur, district Jalgaon, (M.S.).

SYSTEMATIC ENEUMERATION

Euglena limnophilaLemm. var.***swirenkoi***(Arnoldi) Popova **Fig. 1**

Z.I. Asaul,*Euglenophyta of the Ukranian. RSR. NaukovDumka Kiev.,* p.179, Pl. 95, Figs. 1-7, 1975.

Body cylindrical, anterior end notched, posterior end with a long straight pointed tail; pellicle weakly spirally striated; chromatophores numerous; paramylum rods two, one on either side of the nucleus, near the center; stigma crimson, elongate spine like; cells 25.3 – 41.2 mm long, 6.2 – 19.7 mm wide. (Coll. Nos. 266, 267, 311, 327).

Euglena minimaFrance **Fig. 2**

Z.I. Asaul, *Euglenophyta of the Ukranian. RSR. NaukovDumka Kiev.,* pp.163-164, Pl. 85, Figs. 1-3, 1975.

Cells spindle shaped, ends attenuated, posterior end pointed; pellicle thin and fine with very faint spiral striae; chromatophores peripheral, band shaped; pyrenoids 2-3; sheathed by paramylum; flagellum nearly about body length; stigma small reddish-brown; cells 23.7 – 31.2 mm long, 9.7 – 12.2 mm wide. (Coll. Nos. 176, 310, 311).

Euglena pavlovskoensis(Elenk. e*t*V.Poljansk.) Popova **Fig. 3**

Z. I. Asaul, *Euglenophyta of the Ukranian. RSR. NaukovDumka Kiev.,* p.186, Pl.100, Figs. 4-10, 1975.

Body cylindrical, curved and tapering gently into a point posteriorly, rounded anteriorly; pellicle spirally striated; cytoplasm granular; chromatophores numerous, small, without pyrenoids; paramylum two, large, rectangular to rod shaped, discoid; flagellum short; stigma crimson showing bending and rotating movements; cells 70.5 -103.1 mm long, 11.2 – 15.4 mm wide. (Coll. Nos. 311, 314, 318).

Euglena pisciformisKlebs **Fig. 4**

Z. I. Asaul, *Euglenophyta of the Ukranian. RSR. NaukovDumka Kiev.,* pp.162-163, Pl. 84, Figs. 1-9, 1975.

Body nearly cylindrical with rounded anterior end and posterior blunt end; chromatophores two elongated laminate plates, each with a pyrenoid sheathed by paramylum caps; additional oval, short rod like paramylum also present in the cytoplasm; striations not observed; flagellum nearly half of the body length; cells 28.7 -40.6 mm long, 6.9 – 8.1 mm wide. (Coll. Nos. 311, 318).

Euglena proximaDang. **Fig. 5**

Z.I. Asaul, *Euglenophyta of the Ukranian. RSR. NaukovDumka Kiev.,* p.165, Pl. 86, Figs. 2-4, 1975.

Body fusiform; somewhat blunt towards the anterior end; tapering posteriorly to a hyaline point; pellicle weakly striated; changing the shape markedly by contracting or bulging without twisting; chromatophores many, lenticular to oval without pyrenoids; paramylum numerous, ovoid; stigma bright, crimson; cell 46.5 mm long, 10.3 mm wide.
(Coll. No. 311).

Euglena retronataJohn**.** **Fig. 6**

I. Habib and U.C. Pandey, *J. Indian bot. Soc.*,**69**: 389, Pl.2, Fig.2, 1990.

Cell spindle-shaped, rounded anteriorily, tapering posteriorly to a sharp point; pellicle very faintly spirally striated; cystomesubterminal; chromatophores many, ovoid or spindle-shaped, parietal, each with a pyrenoid; paramylum few; stigma ovoid, crimson; cell 24.6 mm long, 7.8 mm wide. (Coll. No. 284).

Euglena spathirhynchaSkuja**Fig. 7**

Z.I. Asaul, *Euglenophyta of the Ukranian. RSR. NaukovDumka Kiev.,* p.177, Pl.94, Figs. 1-4, 1975.

Cells fusiform with somewhat flattened, truncated anterior end, mid-portion somewhat expanded; attenuated posteriorly into a straight or curved elongated tail; pellicle firm, spirally striated; chromatophores many, discoid, without pyrenoids; paramylum short rods, flagellum ½ of the body length; stigma angular, red; nucleus slightly posterior to the middle of the cell; cells 42.1 – 47.7 mm long, 13.1 -14.0 mm wide. (Coll. Nos. 300, 327, 331).

Present material is shorter in length.

Euglena spirogyraEhr**.** var**. marc*hica***Lemm**.** **Fig. 8**

V.H.Waghodekar, *Ph.D. Thesis,* pp.77-78, Pl.4, Fig. 7, 1980.

Cell cylindrical, sides nearly parallel; anterior end bluntly rounded, posterior end ending into a sharply pointed tail; pellicle striated with spiral rows of distinct granules; chromatophores numerous, small, disc shaped without pyrenoids; paramylum two, large, one on either side of nucleus; stigma prominent, dark red, oval; cell 83.0 mm long, 11.2 mm wide. (Coll. No. 330).

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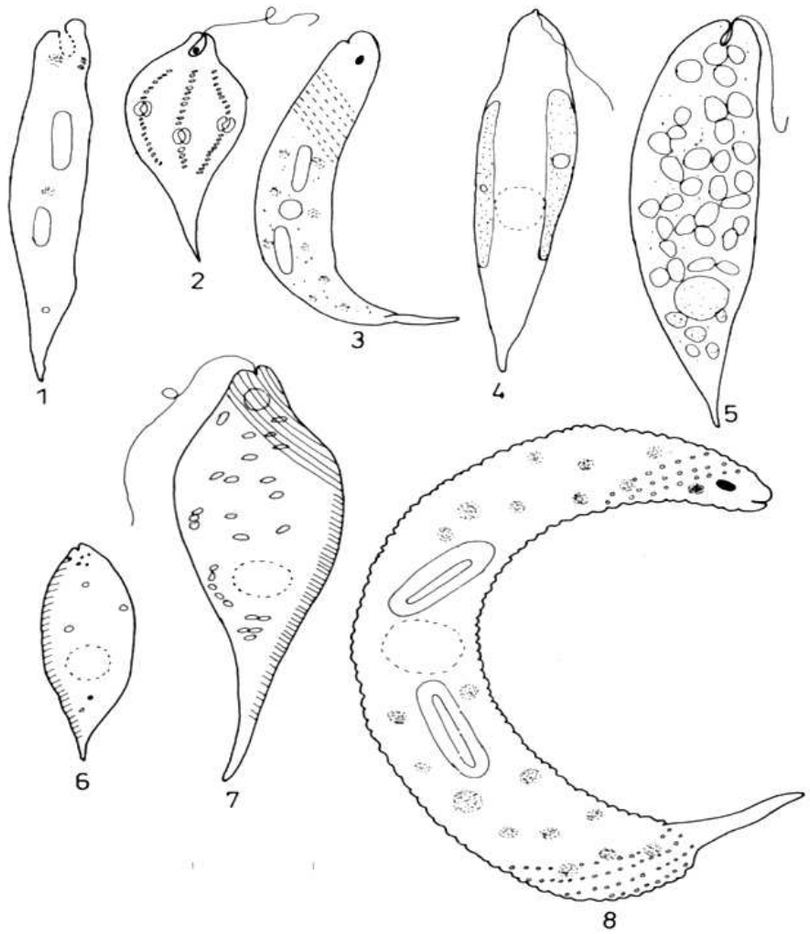

Legends to Figures

1. ***Euglena limnophila*** **Lemm. var.** ***swirenkoi*** **(Arnoldi) Popova**
2. ***Euglena minima*** **France**
3. ***Euglena pavlovskoensis*** **(Elenk.** ***et*** **V. Poljansk.) Popova**
4. ***Euglena pisciformis*** **Klebs**
5. ***Euglena proxima*** **Dang.**
6. ***Euglena retronata*** **John.**
7. ***Euglena spathirhyncha*** **Skuja**
8. ***Euglena spirogyra*** **Ehr. var. marc*hica*** **Lemm.**

Scale bar A : 25 mm
Scale bar B : 10 mm
Scale A : Fig. 1
Scale B : Fig. 2,3,4,5,6,7,

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Impact of Micro Irrigation on Cropping Pattern in Vaijapur Tehsilof Aurangabad District

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ABSTRACT
Micro-irrigation gained prevalence when the Parliament was rocked with issue of farmer suicides. Sensing the significance and probable benefits of the process to double the farmers' income along with agricultural sustainability and environmental quality, the Union government launched a comprehensive flagship programme called *Pradhan Mantri Krishi Sinchai Yojana* or "more crop per drop". Micro-irrigation can increase yields and decrease water, fertiliser and labour requirements.
Present study found that in Vaijapur taluka cotton is the most widely grown crop, followed by maize, onion, Bajri, Gram, and wheat in Vaijapur Tehsil. This study also found that the percentage of cultivated land of Vaijapur taluka to the total cultivated land of Aurangabad district and coverage area under micro irrigation has been increased. According to the respondents, some minor changes occurred in cropping pattern due to MIS in Vaijapur taluka. Changes in cropping patterns and the use of micro irrigation methods for land cultivation are suggested as remedies for the water management in drought prone area.
Key words: Micro Irrigation, coverage area, Cropping Pattern

Introduction:
Micro-irrigation gained prevalence when the Parliament was rocked with issue of farmer suicides. Sensing the significance and probable benefits of the process to double the farmers' income along with agricultural sustainability and environmental quality, the Union government launched a comprehensive flagship programme called *Pradhan Mantri Krishi Sinchai Yojana* or "more crop per drop".
Under the programme, financial assistance of up to 55 per cent is available for small and marginal farmers and 45 per cent for other farmers for adoption of micro-irrigation systems. The funding pattern between the Union governments and the state government's share since November 2015 has been 60:40 for all states except the North East and the Himalayan states, for which the funding pattern is 90:10.
Micro-irrigation can increase yields and decrease water, fertiliser and labour requirements. By applying water directly to the root zone, the practice reduces loss of water through

conveyance, run-off, deep percolation and evaporation.

Objectives:

1. To study the impact of MIS on cropping patterns in the study area.
2. To suggest measures for water management in drought prone area.

Research Methodology:

In the present study, primary and secondary data are used. For the purpose of this study, primary data is collected through a schedule questioner. In this study, we selected 450 farmers from 30 villages in Vaijapur tehsil in Aurangabad district. Secondary data from authentic sources was collected about the cultivated area of various crops and products as well as rainfall in the study area. For analysis, statistical tools such as percentage & average have been used in the present study.

Review of Literature:

Dhawan B. D. & Harsharan Singh Datta (1992)[22] examined the irrigation impact on multiple cropping pattern. The multiple regression analysis shows that the close relationship between irrigation development and the rise in intensity of cropping at the all-India level. The regression analysis across 14 states for the pooled data for the period 1983-84 to 1987-88 throws up a value of the impact of irrigation on intensity of cropping, namely, 0.46, that is very near the predicted value of 0.48. But the time series analysis for the period 1950-51 to 1987-88 reveals a somewhat higher impact value of irrigation, namely, 0.65 percentage points rise in intensity of cropping corresponding to percentage point rise in the irrigation ratio as defined in this paper. It is believed that this estimate of the irrigation impact is biased upwards because of the omission of variables like tractorisation from the regression model. Therefore, the estimate based on cross- sectional analysis is most probably nearer the true value. Pooled cross-sectional analysis for different periods over 35-year time span of 1953-54 to 1987-88 does not sustain the thesis of decline in the all-India impact of irrigation on intensity of cropping with the passage of time. In fact, weak signs of improvement in this impact are discernible. Exercises into assessing comparative impact by type of irrigation have not yielded meaningful results. Whereas tank irrigation turns out to be with an incredibly high positive impact on intensity of cropping during the course of time series analysis, it comes out with a negative sign in the cross- sectional results. This calls for further enquiry to verify the veracity of the general impression that the irrigation impact on intensity of cropping rises as we move from tank irrigation to canal irrigation, and onto well irrigation.

Bhaskar K.S., Rao M.R.K., Mendhe P.N. and M.R. Suryavanshi (2005)[3] examined the water management in cotton. They have been carried out this research work at different Agricultural Universities in Maharashtra (Rahuri, Purbhani and Akola), Cotton Research Station, Navsari, and ICAR Institutes, Agricultural Research farms and farmers fields during the past few years. In cotton, vegetables and horticultural crops the micro irrigation system gives the above 90 per cent irrigation efficiency with increasing yield and quality.

The 55.40 per cent area covered under micro irrigation is in horticultural crops. The drip irrigation system has been given higher saving of water and quality yield.The area under micro-irrigation is increasing campare to privious years, due to water saving and water use efficiency.

Karunakaran K.R., & Palanisami K. (1998)[13] explored the Impact of Irrigation on Cropping Intensity, which shows that the close relationship between irrigation development and cropping intensity at state level. Study also indiacate the positive impact of different irrigation sources (such as canal, tank irrigation and dug well irrigation) on cropping intensity up to 1979-80. Later on, tube-well and dug well irrigation has indicates the more impact on intensity of crop. The tank irrigation declining trend shows the positive impact on cropping intensity. Study suggests that, it is necessary to invest the minimum amount per hectare on tank irrigarion over the major and medium irrigation projects.

Result and Discussion:

1. Status of Rainfall:

Marathwada has always been prone to droughts. Rainfall variability and water scarcity are the major issues in the semi-arid Marathwada region of Maharashtra. With 24 out of 36 districts in Maharashtra facing deficient monsoon and the situation worsening in the drought-hit Marathwada and Vidarbha regions, the State government has decided to go for cloud seeding. Eighteen districts, mainly in Marathwada and Vidarbha, were facing a monsoon deficit of 20-51 per cent in July 2019.

Table No 1

Status of rainfall in Aurangabad District

(Base Year – 2021-22)

Sr. No.	Taluka	Average		In 2021		Percentage
		Rainfall Day's	Rainfall (mm)	Rainfall Day's	Rainfall (mm)	
1	Kannad	70	1007.3	67	1291.7	28.2
2	Soegaon	54	1084.9	62	1267.6	16.8
3	Sillod	59	793.2	68	1232.5	55.4
4	Phulambri	59	950.8	54	850.7	-10.5
5	Aurangabad	76	1246.1	62	965.0	-22.6
6	Khuldabad	75	1295.0	69	1236.9	-4.5
7	Vaijapur	77	928.9	66	1017.3	9.5
8	Gangapur	71	1143.9	67	1036.3	-9.4
9	Paithan	72	1173.6	59	1179.7	0.5
	Aurangabad District	**68**	**1069.3**	**64**	**1120**	**4.7**

Source: Aurangabad District Socio-Economic Review, 2022.

Table no 1 shows that the average rainfall of Aurangabad district was 1069.3 mm and 68 days and average rainfall in Vaijapur taluka was 928.9 mm and rainfall 77 days in 2021-22..

2. Cropping Pattern in Vaijapur Tehsil:

The proportion of area under different crops at a particular time is called a cropping pattern. A change in cropping pattern implies a change in the proportion of area under different crops. Cropping patterns in any region depend upon the physical characteristics of the soil, climate, weather, rainfall etc. It also depends upon the nature and availability of irrigation facilities and institutional facilities as well. Economic motivations such as prices and income maximization, farm size, insurance against risk, availability of inputs and land tenure systems also factor into the determination of cropping patterns. The conditions of the soil and climate in the Marathwada region are such that they contribute to a low value crop pattern and relatively low yields for most of the significant crops.

The major crops grown in the Vaijapur taluka of Aurangabad district during the kharif season are jowar, soybean, cotton, tur, mung, urid etc.; during rabi season gram, safflower, sugarcane, rabi jowar, etc. Vegetables like tomatoes, peppers, onions, and brinjal are also cultivated in the summer. Among the main crops of the region are horticultural crops like mangoes and oranges, which are produced by irrigated horticulture. In summer, they also grow watermelons and ground nuts.

Table No 2

Cropping Pattern of Vaijapur Taluka of Aurangabad district

Crop	Gross Cropped area (in ha) 2019-20	Gross Cropped area (in ha) 2021-22
Wheat	6663	11042
Jowar	6273	3897
Bajri	6670	4969
Maize	31515	44619
Gram	6489	9090
Toor	1561	2295
Sugarcane	975	2195
Onion	9152	9152
Brinjal	63	32
Tomato	100	115
Cotton	73940	63297
Chili	88	64
Fruits & vegetables	11918	2896
Spices	773	915
Total Cultivated land of Vaijapur Taluka	153534 (15.73%)	168525 (16.37%)
Total Cultivated land of Aurangabad District	975770	1030310

Note: Bracket figure indicates percentage to total cultivated land of Aurangabad district.
Source: Aurangabad District Socio-Economic Review, 2020.

Table no 2 indicates that the gross cropped area under cotton is highest (73,940 ha) and followed by maize 31515 ha, onion 9152 ha, Bajri 6670 ha, Gram 6489 ha, wheat 6363 ha, Jowar 6273 ha etc. in Vaijapurtaluka in the year 2020. This table also indicates that the percentage of cultivated land of Vaijapurtaluka to total cultivated land of Aurangabad district is 15.73 percent and the total cultivated land of Aurangabad is 975770 ha in the year 2019-20.

3.Crop wise Coverage Area under Micro Irrigation:

According to the MIS Physical achievement Report 2019-20, Marathwada region as well as Maharashtra state, cotton, sugarcane and turmeric are produced by using the drip irrigation method. The fruit crops like banana, grapes, mango, pomegranate, orange, sweet lime (mosambi) are produced under drip irrigation method. The groundnut, jowar, bajra, gram, soybean, and maize are produced under sprinkler irrigation method. In Aurangabad district, gross coverage area of micro irrigation was 12216.4 ha, out of them 11050.6 ha under drip irrigation and 1165.84 ha under sprinkler irrigation method in 2019-20.

The crop wise coverage area under micro irrigation in Vaijapur tehsil of Aurangabaddistrict is given in table 3.

Onion:

The coverage area of cotton crop is highest under micro irrigation method in Vaijapur tehsil of Aurangabad district. In 2019-20, it was 1408.68 ha, out of which 122.54 ha under drip &1286.14 ha under sprinkler irrigation method.

Cotton:

In 2019-20, it was 614.98 ha, out of which 242.1 ha under drip &372.88 ha under sprinkler irrigation method.

Maize:

In 2019-20, the coverage area of sugarcane crop under micro irrigation was 114.93 ha, out of which 43.41 ha was under drip irrigation and 71.52 ha under sprinkler irrigation in Vaijapur tehsil of Aurangabad district.

Sugarcane:

In 2019-20, the coverage area of sugarcane crop under micro irrigation was 190.16 ha, out of which 271.12 ha was under drip irrigation and 0.4 ha under sprinkler irrigation in Aurangabad district.

In 2019-20 total coverage area of micro irrigation was 2987.17 ha, out of them 1049.95 ha under drip irrigation and 1937.22 ha under sprinkler irrigation method.In short area under sprinkler irrigation method is highest in Vaijapur tehsil, it was 64.85 percent.

Table3

Crop wise Area under Micro Irrigation in Aurangabad District (2019-20)

(Area in ha)

Crops	Drip	Sprinkler	Total
Cotton	242.1	372.88	614.98
Onion	122.54	1286.14	1408.68
Maize	43.41	71.52	114.93
Wheat	0	31.48	31.48
Sugarcane	190.16	0	190.16
Other Crops	451.74	175.2	626.94
Total	**1049.95 (35.15)**	**1937.22 (64.85)**	**2987.17 (100)**

Source: Access throughhttps://pmksy.gov.in/microirrigation/Report_Crop.aspx; onMarch2023

4. Opinion of the Respondent Farmers about MIS:

According to table no 4, 70.67 percent of respondents experienced Saves water and produces higher yields. 76.89 percent reported changes in crop patterns, Due to the MIS, Electricity consumption has been reduced for 294 respondents, and 76.89 percent respondents told the changes in cropping patterns due to the MIS. In short, according to the respondents, some minor changes occurred in cropping pattern due to MIS in Vaijapur taluka.

Table No 4

Respondent Farmers Opinion AboutMicro Irrigation System

Opinion	Responses	Percentage
Electricity consumption has been reduced	294	65.33
Saves water and produces higher yields	318	70.67
Coverage area of irrigation has been increased	309	68.67
Seed germination is improved	276	61.33
It is not necessary to level the fields	258	57.33
The operation and maintenance cost increases due to damages done by animals and mishandling of MI set.	312	69.33
Initial investment cost is high	372	82.67
Changes in cropping patterns	346	76.89

Source: Field survey, April & May 2022

5. Measures for Water Management in Drought Prone Area:

According to table no. 5, the majority of respondents (372) suggested that water should be used properly for irrigation; 60.67 percent respondents suggested micro irrigation, which is drip and sprinkler irrigation; 43.11 percent respondents suggested using farm pond water for irrigation; 46 percent respondents suggested making the planning of rain water storage for irrigation, and 172 respondents suggested cultivation of low water growing crop.

Table No 5

Respondent Farmers Opinion about Water Management in Drought Prone Area

Opinion	Responses	Percentage
Use of micro irrigation	273	60.67
Water should be used properly for irrigation	372	82.67
Using farm pond water for irrigation	194	43.11
Planning of rain water storage for irrigation	207	46.00
Cultivation of low water growing crop	172	38.22

Source: Field survey, April & May 2022

Conclusion:

Present study found that in Vaijapur taluka during Kharif season are jowar, soybean, cotton, tur, mung, urid, etc. and during rabi season gram, safflower, sugarcane, rabi jowar, etc. Vegetables like tomato, chilli, brinjal, and onion are also cultivated in the summer season. Cotton is the most widely grown crop, followed by maize, onion, Bajri, Gram, and wheat in Vaijapur Tehsil. This study also found that the percentage of cultivated land of Vaijapur taluka to the total cultivated land of Aurangabad district is only 15.73 percent in the year 2019-20. According to the respondents, some minor changes occurred in cropping pattern due to MIS in Vaijapur taluka. Changes in cropping patterns and the use of micro irrigation methods for land cultivation are suggested as remedies for the water management in drought prone area.

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Environment for Women Entrepreneurs in Haryana : An Analysis

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Abstract
Many women in India have attained prominent or leadership positions, rising to the highest echelonsin every walk of life — for example as entrepreneurs, industrialists, civil servants, police officers,airline pilots, scientists, engineers. Yet women must overcome additional barriers to have equitableaccess to the labour market, to access control over economic resources and entrepreneurialopportunities. This study was carried out with the aim to identify strategies and policies which could create an enabling environment for women entrepreneurs in India. The study concludes with a wide range of recommendations to promote a more enabling environment for women's entrepreneurship inIndia. Present paper is based on both Primary and Secondary source of data such as-questionnaire and govt. offices. The data analysis has been based on some effective tables and diagrams. Some major findings and fruitful suggestions for women entrepreneurs have been given in full paper.
Keywords: Women, Entrepreneurs, Enabling Environment.

Introduction

The term "social entrepreneurship" is being adopted and used more extensively, but its meaning is not widely understood. In particular, the scope of social entrepreneurship in both business and the voluntary sector has not been mapped effectively. This paper begins by defining social entrepreneurs and social entrepreneurship. Women's entrepreneurship encompasses self-employment, income generation, and the management of businesses/enterprises. In the area of women's entrepreneurship, and although government policies and promotion strategies have been giving new opportunities to women, few have come forward. According to the same Micro, Small and Medium Enterprises (MSME) Annual Report 2011-12, only 13.72 per cent of enterprises in the registered MSME sector were enterprises managed by women, representing about 2.15 lakh (or 215,000 enterprises across the country). The Indian society has evolved as a traditionally male-dominated one. Women tend to beconsidered as the weaker sex and socio-economically depended on men throughout their life.

Women mostly occupy subordinate positions and execute decisions generally made by othermale members of the family. Despite an equal population, very few women were self-employed and the majority of themwere engaged in the informal sector like

agriculture, agro-based industries, handicrafts, handloom and cottage-based industries.Sixty-five per cent of the population in India live in villages; Self Help Groups (SHGs) havepaved the way for economic independence of rural women involved in micro entrepreneurship.In the 1950s, only those women who had no male income-earners within their family becamethemselves income generators. In the 1960s, women begun to start small enterprises at home.Those were activities for self-occupation rather than for achieving financial autonomy. In the1970s, income generation and career choices became equally important for many women. Inentrepreneurial roles, the women increasingly wanted their enterprise to grow and succeed.

Women often joined their fathers' or husbands business as contributing partners on an equalfooting in the 1980s. They made personal choices, stood up for their convictions and had thecourage to make new beginnings. The women in 1990s increasingly learnt to live alone,travel alone and if need be to rear children alone. In the twenty first century even moreopportunities arise for women and they increasingly venture to build enterprises. It is primarily since the last two decades that attempts to design programmes to promote women entrepreneurs as a part of national development plans have begun to be taken notice of by women. However, as this paper aims to demonstrate, institutional, financial, cultural, gender- based, policy and legal framework based factors continue to hinder women's participation in entrepreneurship. There are also few institutions, whether governmental or non-governmental organizations working tofacilitate women's entrepreneurship.

Objectives of the study:

- To study the sociocultural environment which affects women's entrepreneurial opportunities and creates obstacles institutionally, financially, culturally, politically, legally, etc.
- To identify factors which help or hinder the growth of women enterprises and the causesthereof.
- To provide a range of policy recommendations to create an enabling environment for women'sentrepreneurship in the country.

Research Design

The study is based on primary and secondary data collection. The most appropriate scope and levels of policies to be considered as part of the study were defined through a questionnaire. Various promotional, credit as well as representational institutions, training organizations, banks, credit organizations and association of women entrepreneurs were also contacted. Primary data was collected from 60 entrepreneurs from 4 districts (Kurukshetra,Ambala,Yamunanagar,Panchkula) in Haryana State.

Data interpretation and analysis

Table1: Factors influencing business start-up

Factors	No. of Respondents	Percentage
Encouragement from family	06	10%
Sense of self achievement	13	21.67%
Profit-making aspirations	15	25%
No employment	04	6.67%
To pass time	02	3.33%
Financial need	17	28.33%
To continue in the family occupation	03	5%
Total	60	100%

Source: Based on Field Survey

Table 1 shows that main factor influencing business start-up is financial need i.e.28.33% And another is profit-making aspirations i.e.25% while least factor influencing business start-up is to continue in the family occupation i.e.5%.

Table2:Additional Barriers for Women Entrepreneurs as Compared with Male Entrepreneurs

Additional Barriers	No.of Respondents	Percentage
No difference	02	3.33%
Access to finance & raw materials	21	35%
Knowledge of ICT	20	33.34%
Perception of women's capability	17	28.33%
Total	60	100%

Source: Based on Field Survey

Table 2 reveals that main**barrier for Women Entrepreneurs** is access to finance & raw materials i.e.35% due to less on women entrepreneur’s capability. And another barrier factor is lack ofknowledge of ICT i.e.33.34% due to less interest and awareness of new technology.

Table3: Problems faced in accessing Government Schemes

Category	**No.of Respondents**	**Percentage**
Easy	08	*13.33%*
Neither Easy nor Difficult	*25*	*41.67%*
Difficult	*27*	*45%*
Total	*60*	*100%*

Source: Based on Field Survey

Problems faced in accessing Government Schemes

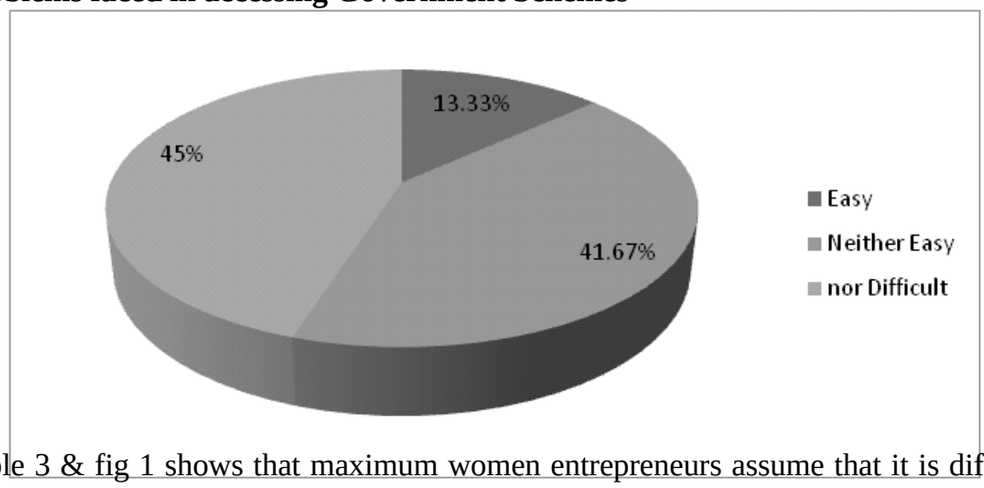

Table 3 & fig 1 shows that maximum women entrepreneurs assume that it is difficult toaccessing Government Schemes. It is need to improve the facilities for women for their better development

Major Findings

1. Lack of awareness about opportunities

Lack of awareness amongst women about the financial assistance offered(incentives, loans, and schemes) by the institutions in the financial sector is one ofthe major challenges. Hence, in spite of financial policies and programmes forwomen entrepreneurs, financial support has reached only few women entrepreneurs.

2. Gender inequality and lack of awareness of existing schemes

Gender inequality remains widely prevalent within the Indian society. According to the 2013Human Development Report (UNDP, 2013) India ranks 132th out of 186 countries in itsgender inequality index. This makes it South Asia's worst performing country afterAfghanistan. Pakistan, Nepal and Bangladesh, which have lower HDIs, all do comparativelybetter than India when it comes to gender equality. Factors which contribute

to genderinequality in India include high levels of illiteracy, the lack of decision-making power overchild bearing and early marriage of women, which in turn limit the chances of women startinga career and becoming entrepreneurs.

3. Other challenges and obstacles women entrepreneurs face

- Availing finance and juggling many responsibilities are major hurdles faced by women inInitiating, requiring and managing an enterprise. Other hindering external factors include Inaccessibility to information, training opportunities, infrastructure,etc. Some internal factors such as risk aversion by women, lack of self-esteem and self-confidence,lack of vision etc. also create hinder women's entrepreneurship.
- Lack of or insufficient education facilities results in lack of knowledge and information aboutavailability of raw material, access to finance and Government' schemes and facilities andother existing or upcoming opportunities.
- Women are mostly economically dependent from their husbands which reduces theirability to bear the risks and uncertainties involved in launching a business. The educationallevel and family background of their husbands also influence women's participation.
- Gender-insensitive business development support systems (BDS Providers) often creatediscriminatory environment for women entrepreneurs in the process of starting and managingtheir businesses, especially during registration, finances procurement, marketing, etc. sectorsthat are all male-dominated.
- Women need to devote considerable amount of time for their business if they want it to grow.

Meanwhile by contrast, if a woman is unable to devote sufficient time to her family, manyconflicts will emerge. If family members are not supportive, cooperative or encouraging,women are most likely to choose not to pursue an enterprise, as Indian women typically placemore emphasis on family ties and relationships. technology, etc. Very few women entrepreneursmake use of advanced software available likestatistical softwares, SAP, Accounting Packageslike TALLY, Animation softwares 3D MAX,and even internet \ facilities.

- Another challenge encountered by womenentrepreneurs is a lack of management skills,usually because of lower propensity of previous business/job experience. Furthermore,support providers discriminate against women entrepreneurs to a large extent when providingconsultations and guidance.
- Society's attitude towards women entrepreneurs, unequal opportunities amongst men andwomen and broadly a lack of self-confidence haunt women entrepreneurs. This low level ofself-confidence, will-power and optimistic attitude amongst women create a fear ofcommitting mistakes which affects their business.

Recommendations for Creating an Enabling Environment for Women'sEntrepreneurship

Womenentrepreneurs are still not yet widely supported and accepted. The efforts to develop women need tobe substantiated and strengthened. To lead women towards Entrepreneurship by creating an enablingenvironment, a series of recommendations are provided here:

1. Role of Government:

Several policy initiatives have been taken by the government in terms of regulatory,promotional, credit and representational policies for entrepreneurs at large but very few suchschemes are specifically targeting women entrepreneurs. The Government of India hasenacted the National Policy for the Empowerment of Women, 2001. As a result, variousschemes and plans for the encouragement of women entrepreneurs have been launched buttheir execution at different stages has been lagging and the impact on ground needs to beclosely assessed/monitored. Policies to facilitate income tax rebates and tax reliefs to women entrepreneurs can beintroduced. Income tax rates should be reduced by 2 per cent for women.

2. Evaluation and Up Gradation of Policies

- There is a need to periodically evaluate the policies on thesuccess of women-owned businesses and the extent to which such businesses takeadvantage of these policies. Good practices should be disseminated and shared broadly.Women entrepreneurs should extensively make use of the various schemes provided by theGovernment.

It is desirable to establish amenities for women entrepreneurs inindustrial areas, such facilities should be characterized by easy mobility and proximity toresidential areas with regular bus service, child-care facilities, etc.

3. Assistance and awareness creation

Government should assist women entrepreneurs to participate ininternational, national and local trade fairs, exhibitions and conferences. Such activitiesshould be organized regularly. Incentives to women entrepreneurs should be offered.

Attempts by various NGO's and GO's to spread information about policies, plans andstrategies on the development of women in the field of industry, trade and commerce areplaying a crucial role and should be supported.

4. Procedural simplification

The procedures and formalities should be simplified for registration of business, financiallegal assistance, subsidies, concessions, relief etc, from different government and nongovernmentaldepartments.

5. Role of the state governments

Women in business should be offered soft loans and subsidies. Financial institutions should provide more working capital assistance to women-headed enterprises.

Government should make provision of micro credit system for women-led enterprises. The weaker section could raise funds through various schemes and incentives provided by the Government to develop entrepreneurs in the state. (Such as, Prime ministers

RozgarYojana, The Khadiand Rural village industries scheme, etc.)

6. Role of Supporting Organizations

There is a need for greater transparency and renewed efforts to increase awareness of existingregulations, and support mechanisms. Among other means, this could be achieved bypublishing various women laws and rules in local languages and by allowing the saleof such booklets and related applications. Periodic open forums of various regulatorydepartments such as excise, license, registrar, industrial schemes, tax departments, anddirectorate of industries should be widely disseminated among women entrepreneurs to createconducive environment.

Training institutions should look ahead and provide training for their staff, update theircurricula, and facilities in line with the times and to better meet pressing and evolvingdemands.

It is suggested that NABARD and SIDBI take the initiative to draw the attention of theoperating managements of the banks to create a potentially growing and profitable businesssegment. To overcome the technical deficiency at the branch level, the lead bank office in thedistrict should establish a women cell to provide specialized assistance to all the branches.

7. Access to Finance

Banks and financial institutions offer excellent financial schemes for women entrepreneursbut there is a lack of wider awareness among women about such schemes. A re-evaluation ofthe way women business clients are treated might alleviate many gender -related problemsexperienced by women.

Banks should have collateral-free lending, set quotas to women entrepreneurs for lending, aswell as guarantee scheme for zero-collateral lending. Safe lending should be replaced bypriority lending for women.

Banks should keep regular monitoring of women entrepreneurs' loans and helping womenentrepreneurs to develop project. Banks having considerable lending to women should beoffered incentives.

8. Access to Market

Special efforts should be made to facilitate unmediated access for women toinvestments in human capital, to the factors of production, to productiveassets and productive markets.

- Marketing assistance should be developed by promoting linkages between women enterprises

9. Access to Infrastructure and social service

- Implementation of infrastructure must be accompanied by policies that encourage women toengage in income-generating activities, including education, training and extra benefits suchas child care facilities. Government can set some priorities for women entrepreneurs forallocation of industrial plots, sheds and basic infrastructure/amenities.

10. Access to Technology

- The establishment of technology centres that provide assistance to women entrepreneurs isgreatly needed. Universities and technical colleges should be given a greater role in thedevelopment and dissemination of technologies in conjunction with women enterprises. To upgrade technologies in the women entrepreneurship development, credit should bemade available on a preferential basis to women business units that want to modernize. Theneed exists for the adaptation of technology to local needs of women enterprises forappropriate research and for the dissemination of information.

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Electric & Magnetic Behavior of gel grown crystals of bismuth Tri -Iodide BiI_3

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1.Abstract :-In the present investigation, crystals of bismuth tri-iodide (BiI_3) were grown by a simple gel technique using single diffusion method. The optimum growth conditions were established by varying various parameters such as pH of gel solution, gel concentration, gel setting time, concentration of reactant etc. Gel was prepared by mixing sodium meta silicate ($Na_2SiO_35H_2O$), glacial acetic acid (CH_3COOH) and supernant bismuth chloride ($BiCl_3$) at pH value 4.4 and transferred in glass tube of diameter 2.5cm and 25cm in length. The mouth of test tube was covered by cotton plug and kept it for the setting. After setting the gel, it was left for aging. After 13 days duration the second supernant potassium iodide (KI_3) of 1M concentration was poured over the set gel by using pipette then it was kept undisturbed. After 72 hours of pouring the second supernatant, the small nucleation growth was observed at below the interface of gel. The good quality hexagonal BiI_3 crystals were grown in 33days. These grown crystals were characterized by Electrical Conductivity, Magnetic SusceptibilityEDAX & SEM.

2.Keywords :- Gel Grown $BiIi_3$ Crystals,Electrical Conductivity, Magnetic Susceptibility, SEM &EDAX .

3.Introduction :- Various crystals have been used in electronic industry for controlling the frequency of radio waves, optical property in polarizing microscopes, in microwave communication, in digital telephonic instrumentation, in wireless and optical communication, in electronic and photonic devices [1-7]. This method has gained considerable attention because of its simplicity and effectiveness in growing single crystal of certain compounds. This method is an alternative technique to solution growth with controlled diffusion , theGrowth process is free from convection. This is purifying process, free from thermal strain [8, 9]. Crystal habit of various crystals, grown under different conditions and also by different methods were described by H. E. Buckley [10], P. Hartman [11], K. Kern [12], A. A. Chernor [13], W. K. Burton [14] and J. W. Mullin [15]. The various process parameters such as degree of saturation, type of solvent [16], pH of the gel media [17, 18], presence of impurities [19] and the change in growth temperature also presumably affect significantly the morphology of the crystal [20].

4. Materials andmethods: - Test tubes are used as crystallizing vessels. Sodium met silicate ($Na_2SiO_35H_2O$) gel was used as a growth media. Gel was prepared by glacial acetic acid and sodium metal silicate, having different pH values .The chemical used for growth of single crystals of Bismuth Iodide were Ch_3CooH, $Na_2Sio_35H_2o$, $Bicl_3$ or $Bi(No_3)_3$ KI all chemicals are of AR grade .Different molar masses were tried to determined the optimum growth conditions one of the reactant having different concentration were incorporated into gel. This solution was then transferred to borosil glass tube of diameter 2.5cm and 25cm in length (height). The mouth

of the tube was covered by cotton plug. After setting of the gel it was left for aging for different periods of time other reactant having different concentrations was then added as supernant over the set gel. Experiments were carried out by changing different concentration of the reactants. The Chemical reaction inside the gel can be expressed as

$Xcl_3 + 3YI \rightarrow XI_3 + 3YCl$ Or

$X(NO_3)_3 + 3YI \rightarrow XI_3 + 3YNO_3$ Where X=Bi and Y=K or Na.

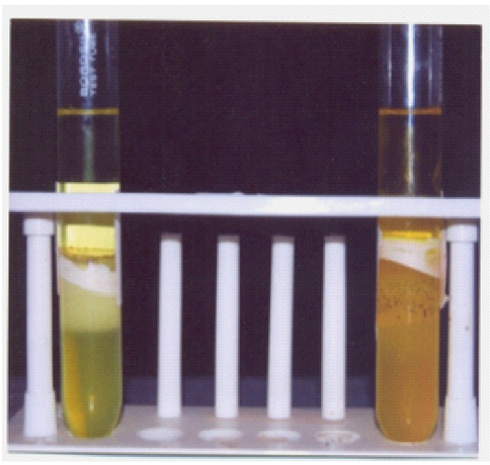
. **5.Result and Discussion:-**The optimum conditions for growth of bismuth Iodide crystals' are as shown in table (1)& effect of concentration of reactant on habit and size of Bismuth Iodide crystals are given in table (2).

Sr. No	Conditions	Bismuth Iodate
1	Density of sodium metasilicate solution	1:04 gm/cm^3
2	Amount of 2N Acetic Acid	5ml
3	pH of gel	4.40
4	Temperature	Room temperature
5	Concentration of $BiCl_3$	0.5m, 1m
6	Concentration of KI	0.5m
7	Gel Setting time	13 days
8	Gel aging time	72hrs.
9	Period of growth crystal	33 days

Table (1) optimum conditions for growth of bismuth Iodide crystals

Sr. No.	Concentration of reactant in gel	Concentration of reactant above gel	Remark
1	$Bicl_3$ 0.5m 5ml	KI or Na I 0.5m, 15ml	Large no of micro crystals were produced. They were attached to themselves and form a thick larger of crystals at the interface crystals were transparent shining tinny (Smaller) in size there were no diffusion of crystals below interface
2	$Bicl_3$ 1.0m, 5ml	KIor Na I 0.5 m, 15ml	Large no of microcrystals were produced The shape of crystals appeared spherical and like a stones with high magnification color is reddish, white the crystals were opaque form a circular ring in test tube and day by day their smaller size remain constant.
3	$Bicl_3$ 1.5m, 5ml	KI or NaI 0.5m, 15ml	Large no of micro crystals produced but they are neigligible and the size of crystals are more smaller than previous cases.

Table (2) effect of concentration of reactant on habit and size of Bismuth Iodide crystals



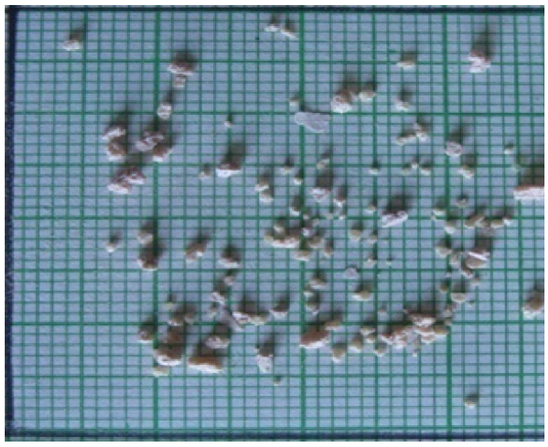


Fig1. Crystals of Bismuth Iodide inTest TubeFig 2. Crystals of Bismuth Iodide

5.1ELECTRICAL CONDUCTIVITY OF BISMUTH IODIDE BiI_3

Observations**: - 1.**Height of thickness of pallet = 0.580 cm **2** Diameter of the pallet=0.950 cm

3.Radius of pallet = r = 0.475 cm =d/2 **4.**Voltage = 0.50 mv (constant)

K = l/RA K= l/Rpr^2 **(since A**=pr^2**)** **l** = 0.58 cm =5.80 * 10^{-4} m **r** = 0.475 cm =4.75 * 10^{-4} m**)**

K = 5.80 * 10^{-4} / R * 3.142 *(4.75 * 10^{-4})^2

K = 5.80 / R * 3.142 *(4.75)^2 * 10^{-4}

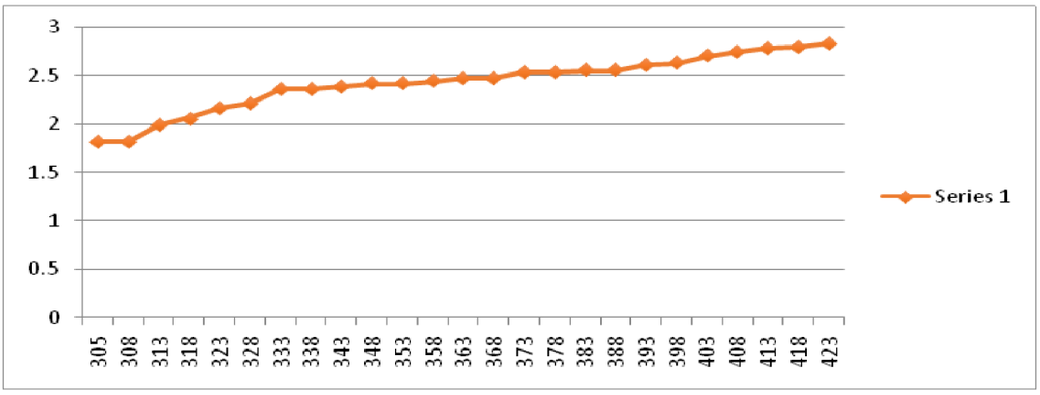
K = 5.80 * 10^4 / R * 70.8913K = 0.0818 * $10^{4/}$R K =8.18 * $10^{2/}$R.

Observation Table :- **(3)**ELECTRICAL CONDUCTIVITY of BISMUTH IODIDE BiI_3

Sr. No	Temp T^{o} k	$1*10^{-4}/T$	Current in A $I * 10^{-4}$	Resistance R in Ω $R * 10^{-4}$	Conductivity in mho/cm k $* 10^{-4}$	Log K
1	423	23.64	0.42 $4.2 * 10^{-4}$	01.19	687.39	2.837203 21
2	418	23.92	0.38 $3.8 * 10^{-4}$	01.31	624.42	2.795476805
3	413	24.21	0.37 $3.7 * 10^{-4}$	01.35	605.92	2.782415288
4	408	24.50	0.34 $3.4 * 10^{-4}$	01.47	556.46	2.747571383
5	403	24.81	0.31 $3.1 * 10^{-4}$	01.61	508.07	2.705923552
6	398	25.12	0.26 $2.6 * 10^{-4}$	01.92	426.06	2.629470763
7	393	25.44	0.25 $2.5 * 10^{-4}$	02.00	409.00	2.611723308
8	388	25.77	0.22 $2.2 * 10^{-4}$	02.27	360.35	2.556724526
9	383	26.10	0.22 $2.2 * 10^{-4}$	02.27	360.35	2.556724526
10	378	26.75	0.21 $2.1 * 10^{-4}$	02.38	343.69	2.536166896
11	373	26.80	0.21 $2.1 * 10^{-4}$	02.38	343.69	2.536166896
12	368	27.17	0.18 $1.8 * 10^{-4}$	02.77	295.30	2.470263447
13	363	27.54	0.18 $1.8 * 10^{-4}$	02.77	295.30	2.470263447
14	358	27.93	0.17 $1.7 * 10^{-4}$	02.94	278.23	2.444403956
15	353	28.32	0.16 $1.6 * 10^{-4}$	03.12	262.17	2.418582994
16	348	28.73	0.16 $1.6 * 10^{-4}$	03.12	262.17	2.418582994
17	343	29.15	0.15 $1.5 * 10^{-4}$	03.33	245.64	2.390299089
18	338	29.58	0.14 $1.4 * 10^{-4}$	03.57	229.13	2.360081 96
19	333	30.03	0.11 $1.1 * 10^{-4}$	03.57	229.13	2.360081 96
20	328	30.48	0.10 $1.0 * 10^{-4}$	05.00	163.60	2.2137833
21	323	30.95	0.09 $0.9 * 10^{-4}$	05.55	147.38	2.168438 55
22	318	31.44	0.07 $0.7 * 10^{-4}$	07.14	114.56	2.059033
23	313	31.94	0.06 $0.6 * 10^{-4}$	08.33	98.19	1.992 06726
24	308	32.46	0.04 $0.4 * 10^{-4}$	12.50	65.44	1.815 84329
25	305	32.78	0.04 $0.4 * 10^{-4}$	12.50	65.44	1.815 84329

Calculations :- 1) I = 0.42 mA = $4.2 * 10^{-4}$ AV = 0.5 mV = $5 *10^{-4}$V
R = V/I = $5 *10^{-4} / 4.2 * 10^{-4}$ = 1.190 ΩK = $8.18 * 10^{2}$ / R = $8.18 * 10^{2}$ /1.19
K = 6.8739 * 100K = 687.39 mho/cm
2). I = 0.38 m A = $3.8 * 10^{-4}$ AV = 0.5 mV = $5 *10^{-4}$V
R = V/I = $5 *10^{-4} / 3.8 * 10^{-4}$ = 1.31 ΩK = $8.18 * 10^{2}$ / R = $8.18 * 10^{2}$ / 1.31
K = 6.2442 * 100K = 624.42 mho/cm

Fig 3. Graph of Temp T ^{o} k **V/s** Log K



5.2 MAGNETIC SUCCEPTIBILITY :- Experiment for Bismuth Iodide

Observation Table :- **(4) MAGNETIC SUCCEPTIBILITY of BiI_3**

Sr.No	Current in A	Magnetic Field (H) Guass	Weight of sample in gm	Difference in wt m	$\chi_m * 10^{-6}$ cm^3 mole^{-1}
1	0	0	4.694	----	0
2	0.2	178	4.695	- 0.001	-0.005342
3	0.4	360	4.692	+ 0.002	0.002612
4	0.6	537	4.691	+ 0.003	0.001760
5	0.8	718	4.689	+ 0.005	0.001641
6	1.0	859	4.688	0.006	0.001376
7	1.2	1016	4.688	+ 0.006	0.000983
8	1.4	1188	4.687	0.007	0.000839
9	1.6	1354	4.686	+ 0.008	0.000738
10	1.8	1515	4.686	0.008	0.0005900
11	2.0	1680	4.684	+ 0.010	0.0005997

Observations :-1. Weight of empty holder + Holder Assembly (test tube) without magnetic field = 4.595 gm

2. Weight of empty holder + Holder Assembly (test tube) + sample powder without magnetic field = 4.694 gm

3. Weight of sample powder M= b – a = 4.694 – 4.595 = 0.099 gm

4. m = Change in weight (m) of sample powder with magnetic field =0.002 gm

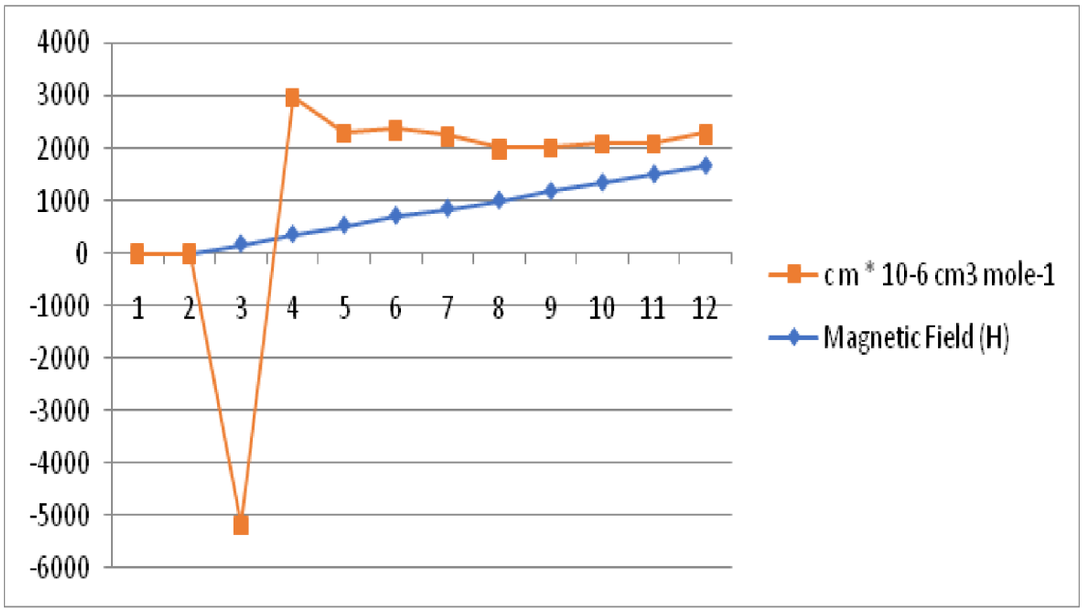
L = Height of sample powder in test tube = 1.5 cm = Density of specimen = 5.7 g/cm^3

H = Applied magnetic field = 360 gauss (for 0.4 A current)

M= Weight of specimen examine = 0.099 gm**g** = Acceleration due to gravity = 980 cm/ sec^2

Formula :- The magnetic succeptibility (**c**) of Bismuth Iodide (BiI_3) powder is given by relation.**c** = $2mgLr/MH^2$ = 2 * 980 * 1.5 * 5.7 * 0.002 / 0.099 * $(360)^2$**c** = 0.00261

Fig 4. Graph of **Magnetic Field (H) Guass V/s c_m * 10^{-6} cm^3 $mole^{-1}$**



5.3SEM :- Scanning Electron Microscopy of BiI_3

This technique combines of the resolution and analytical power with much ease of operation images can be formed from a very wide range of materials. From metal to ceramics and from semiconductor to polymers. These materials can be examined with low energy secondary electrons with high energy back scattered electrons or with other emission such as light, heat and sound. The high depths of field of the SEM images make it especially suitable for the study of the fracture, surfaces and complete microstructures such as those found in composite material.In present work Scanning Electron Microscopy of powdered sample of gel grown Bismuth Iodide crystals was carried at NCL (National Chemical Laboratory) Pune fig (5.1) to (5.6) shows SEM images of the powdered sample of Bismuth Iodide. fig (5.1) shows the part of the crystal of Bismuth Iodide. It is observed that the face is in general dark, but which is covered with bright figures of different geometrical shapes randomly. Some of the bright figures have regular geometrical shape. Some of them are triangular in shape while others are pentagonal in shape and some remaining is seen to be circular in shape. They do not have equal size and shape and randomly oriented throughout the surface.

Fig 5.1 Portion I

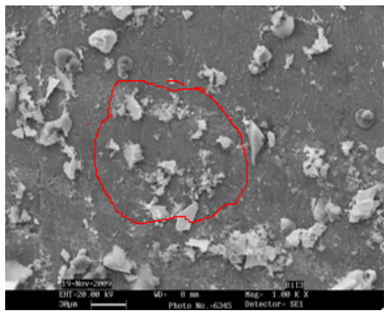


Fig 5.2 Portion II

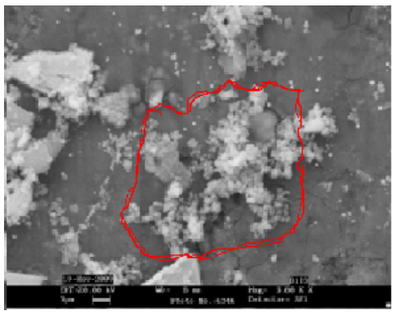


Fig 5.3 Portion III

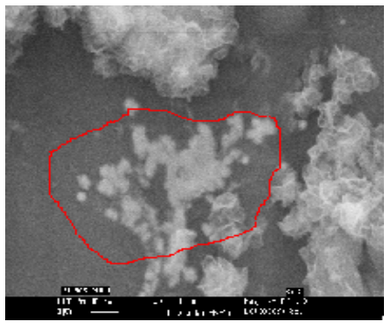


Fig 5.4 Portion IV

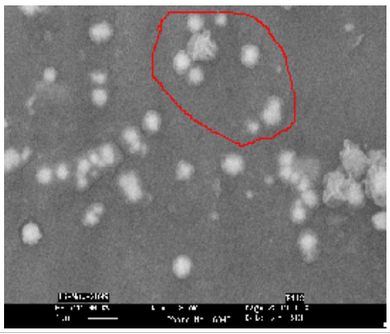
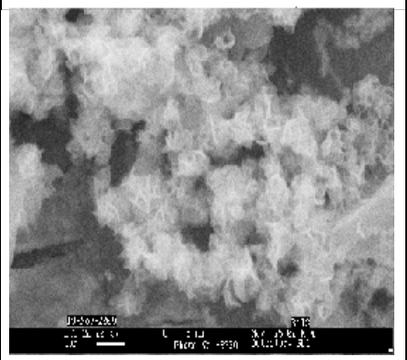


Fig 5.5

Fig 5.6

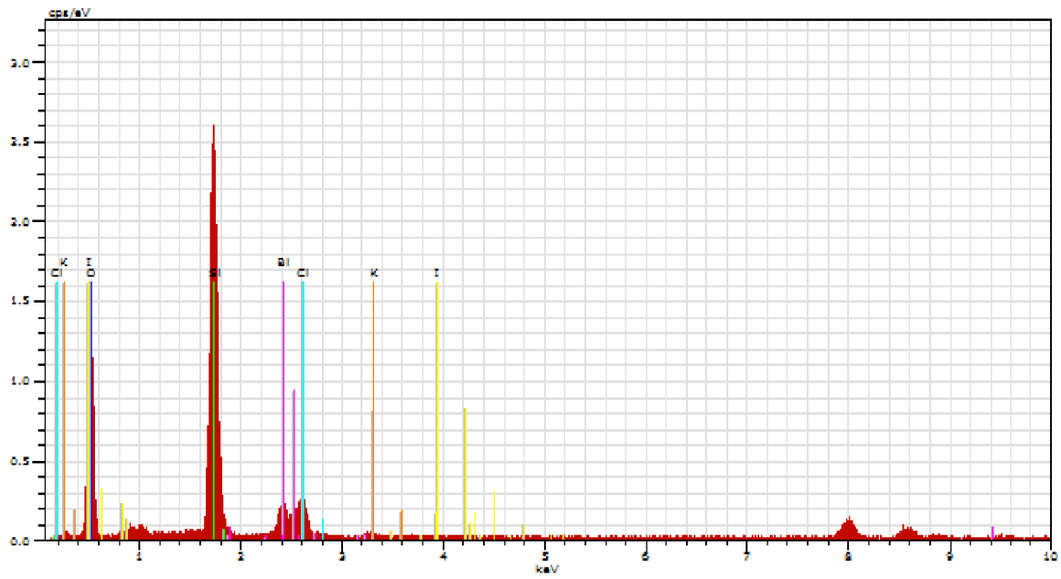


The magnified version of part (I) is shown in figure (5.2), i.e. figure (5.2) shows that the various figures of part (I) from figure (5.1) are made up of circular grains having various size. Magnified version of part (II) from figure (5.2) is shown in figure (5.3), which manifest. the large grain size of part (II) from figure (5.2). The enlarge portion of part (III) from figure (5.3)is shown in figure (5.4), which conformed spherical shape of the

various grains of almost same size. Figure (5.5) shows enlarge portion of part (IV) of figure (5.5), which conformed the shape of the grain spherules

5.4 EDAX :- Energy Dispersive Analysis is also called as elemental analysis by X ray (EDAX) In the present work elemental analysis of gel grown Bismuth Iodide, the NCL National Chemical Laboratory Pune fig (3) shows EDAX spectrum of Bismuth Iodide Table (5) shows the values of elemental content of the crystals as measured by the EDAX technique and the theoretical calculations from molecular formula. From the table it is clear that values of (wt %) and (At %) of BiI_3 in given crystals measured EDAX are close to with the estimated values calculated from molecular formula.

Fig 6 Energy Dispersive Spectrum of BiI_3



(5) for calculation of elemental analysis of gel grown Bismuth Iodide

Element	**Content measured by EDAX**		**Content as calculated from molecular formula BiI_3**	
	Wt %	At %	Wt %	At %
Bismuth	31.66 %	15.48	35.43 %	16.80
Iodide	58.83 %	54.63	64.55 %	48.82
	90.49		99.98	

6. Conclusions:From the above studies we observe that

i. The electrical conductivity of crystals closely related to chemical nature of compound the electrical conductivity increases as increase in temperature

ii. Magnetic measurement are importance in solving problems of molecular structure and bond type of the material. Offers, a means of detecting the presence of singly occupied electronic orbit. The value of magnetic susceptibility of BiI_3 closely related to theoretical ones. i.e. material BiI_3 is paramagnetic. Magnetic susceptibility is decreased as increase in temperature.

iii. From EDAX the observed values well match with values calculated from molecular formula.

iv. From SEM the grain size of sample is spherical.

v.Gel growth technique is suitable for growing crystals of Bismuth iodide.Different habits of Bismuth iodide crystals can be obtained by changing parameters like gel density, gel aging, pH of gel, Concentration of reactants etc.Crystals are quite transparent, and are of good quality.

7. Acknoledgements: The authors are grateful to authorities of NCL, Pune for EDAX & SEM facilities.Our special thanks to Department ofPhysical sciences, NMU, Jalgaon for providing electrical conductivity& Magnetic susceptibility facilities &Prof.Dr.L.A.Patil, Head Department of Physics, Pratap College, Amalner, for providing laboratory facilities.

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प्राथमिक शाळांमधील लोकसहभाग योजनेतील समाज घटकातील समुदायाचा सहभागाचा : एक अभ्यास

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के.सी.ई. सोसायटीचे शिक्षणशास्त्र महाविद्यालय, जळगांव
संशोधक - सौ. ज्योती तडके

सारांश - प्रस्तुत संशोधनात प्राथमिक शाळेतील लोकसहभाग योजनेतील समाज गटातील समुदायाचा सहभागाचा एक अभ्यास हे संशोधन कार्य वर्णनात्मक संशोधन पध्दतीचा आधार घेऊन करण्यात आले. सहेतुक नमुना निवड पध्दतीचा वापर केला असून स्वंयनिमित्त प्रश्नावलीच्या आधारे माहिती संकलित करण्यात आली. या माहितीत खालील निष्कर्ष मिळाले निष्कर्ष - ग्रामीण भागातील लोक समुदाय हा विदयार्थी मार्गदर्शनासाठी पुढे असतो तर शहरी भागातील पालक मात्र सहभागी होत नाही. स्नेहसंमेलनात ग्रामीण भागातील पालकांचा सहभाग अधिक असतो. विविध भेटवस्तू देणे तसेच शालेय इमारतीची स्वच्छता, परिसर स्वच्छता यात ग्रामीण भागातील पालक शाळेविषयी अधिक सहभागी होतांना दिसून येतो.

प्रस्तावना :- विदयार्थ्यांच्या शिक्षणाचा आणि व्यक्तिमत्वाचा पाया शाळेतच रचला जातो. शाळेत मिळालेल्या शिक्षणाच्या आणि संस्कार मुल्यांच्या आधारावरच पुढील शिक्षणातील यश अवलंबून असते. विना सहकार नाही उध्दार या उक्तीप्रमाणे सामाजिक सहकार्याशिवाय शाळेच्या विकास साधणे म्हणजे अशक्यप्राय आहे. शाळा व समाज हे दोन अविभाज्य घटक असून समाजासाठी शाळा व शाळेसाठी समाज असतो. विदयार्थ्यांचा व्यक्तिमत्व विकास यातून समाज विकास हे शाळेचे प्राथमिक ध्येय असून समाजाच्या साहयाने शाळेचा विकास साधणे हे ही तितकेच गरजेचे असते. त्यासाठी शाळेच्या कार्यामध्ये लोकांचा व समाजाचा सहभाग घेणे महत्वपूर्ण ठरते.

भारत सरकारच्या शिक्षण हक्क अधिनियम २००९ नुसार शालेय कार्यामध्ये समाजाचा सहभाग घेणे आवश्यक असल्याचे नमूद करण्यात आलेले आहे. त्याचबरोबर महाराष्ट्र शासनाने १९९६ व २४ ऑगस्ट २०१० रोजी पारित केलेलया परिपत्रक तसेच माध्यमिक शाळा सहिते मधील नियम क्रमांक ३.२ मध्ये शाळेत शिक्षक पालक सभेच्या माध्यमातून शालेय अभ्यासक्रम तसेच विदयार्थी, शिक्षक यांच्या समस्या सोडविणे असे ध्येय निश्चित करण्यात आलेले आहे. विदयार्थ्यांच्या सर्वांगीण विकास साध्य करण्यासाठी सामाजिक न्याय, लोकशाही मानवी मुल्य प्रस्थापित करण्यासाठी शिक्षणामध्ये लोकसहभाग घेणे अत्यंत महत्वूपर्ण आहे. शाळेमध्ये लोकसहभाग वाढवावा हे ध्येय असून सर्व शासकीय व खाजगी शिक्षण संस्थांना शाळा व्यवस्थापन समिती स्थापन करुन त्यांचया यअंतर्गत कार्य करणे बंधनकारक करण्यात आलेले आहे. वरील सर्व संदर्भाचा विचार केल्यानंतर असे लक्षात येते की शाळा व समाज एकाच नाण्याच्या दोन बाजू असून शाळेने समाजासाठी व समाजाने शाळेसाठी कार्य करणे यातून विदयार्थ्यांचा व्यक्तिमत्व विकास घडवून आणला. आज खऱ्या अर्थाने गरज आहे.

अशा वेळी संशोधकाच्या मनामध्ये प्रश्न निर्माण झाला की लोकसहभाग योजनेतून शाळेसाठी नेमके कोण कोणत्या बाबी करता येऊ शकतात या लोक सहभागी योजनांच्या शाळेच्या विकासामध्ये किती सहभाग असतो त्या जाणून घेण्यासाठीच प्रस्तुत संशोधन कार्य संशोधकांनी हाती घेतलेले आहे. कारण प्राथमिक शाळांमध्ये आज लोकसहभागातून ग्रामीण व शहरी भागातील शाळांची प्रगती होत असतांना दिसून येत आहे. वरील बाबींचा विचार करुन लोकसहभाग योजनेतील प्राथमिक शाळांमधील समाज घटकातील समुदायाचा कितपत समावेश शालेय स्तरावर शिक्षक करतात याचा शोध घेण्याचा प्रयत्न प्रस्तुत संशोधनामध्ये केलेला आहे.

समस्या विधान :- प्राथमिक शाळांमधील लोकसहभाग योजनेतील समाज घटकातील समुदायाचा सहभागाचा : एक अभ्यास करणे.

उद्दीष्टे :- प्रस्तुत संशोधनासाठी संशोधकाने खालील उद्दिष्टांचे निश्चिती केली.

१) लोकसहभाग योजनेतील शैक्षणिक कार्यातील सहभागाचा अभ्यास करणे.
२) लोकसहभाग योजनेतील सहशालेय उपक्रमातील सहभागाचा अभ्यास करणे.

३) लोकसहभाग योजनेतील आर्थिक बाबी मधील सहभागाचा अभ्यास करणे.

४) लोकसहभाग योजनेतील मनुष्यबळ विभागाच्या लोकसहभाग योजनांमधील सहभागाचा अभ्यास करणे.

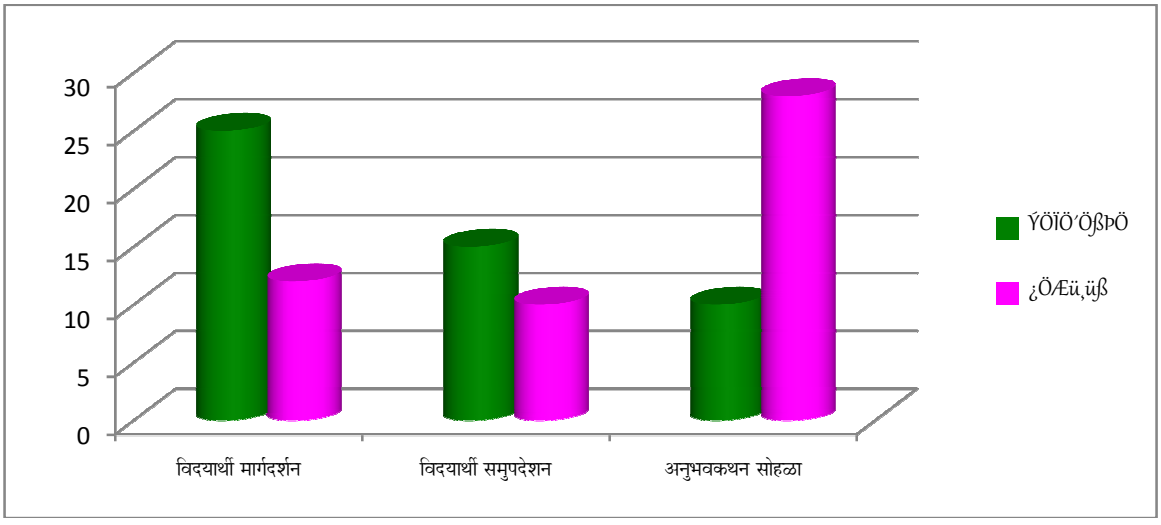
संशोधनाची कार्यपध्दती :-

संशोधन पध्दती - सर्वेक्षण पध्दती	
जनसंख्या	जळगांव जिल्हयातील प्राथमिक शाळांमधील सर्व शिक्षक
न्यादर्श	जळगांव जिल्हयामधील प्राथमिक शाळांमध्ये कार्यरत असणाऱ्या शिक्षकांकडून ज्या शाळांमध्ये कार्यरत आहेत. १०० शिक्षक या संशोधन कार्यासाठी सहेतुक पध्दतीने नमुना निवड करण्यात आली ही निवड करतांना प्रत्यक्ष शिक्षक म्हणून लोकसहभाग योजनेत लोकसमुदाय यांचा नेमका समावेश कसा असतो हे जाणून घेण्यासाठी संशोधकांनी शिक्षकांकडून प्रश्नावली या साधनाचा वापर करुन प्रत्यक्ष माहिती संकलित करण्यात आली. सहेतुक नमुना निवड पध्दती - जळगांव जिल्हयातील प्राथमिक शाळांमधील ग्रामीण (५०) + शहरी (५०) = १००
संशोधन साधने	स्वनिर्मित लोकसहभाग योजनेतील समाज घटकातील समुदायाचा सहभाग मापिका
संख्याशास्त्रीय परिमाणे	शेकडेवारी

०संकलित माहितीचे विश्लेषण व अर्थनिर्वचन :- प्राथमिक शाळांमधील लोकसहभाग योजनेतील समाज घटकातील समुदायाचा सहभागाचा : एक अभ्यास करण्यासाठी स्वनिर्मित शोधिका देण्यात आली होती. त्यास जळगांव जिल्हयामधील प्राथमिक शाळांमध्ये कार्यरत असणाऱ्या शिक्षकांकडून दिलेल्या प्रतिसादाचे विश्लेषण करुन पुढील प्रमाणे परीक्षण करण्यात आले होते.

समुदायाचा सहभागाचा		**विदयार्थी मार्गदर्शन**	**विदयार्थी समुपदेशन**	**अनुभवकथन सोहळा**
शैक्षणिक कार्यातील सहभागाचा अभ्यास	ग्रामीण	२५ (५०%)	१५ (३०%)	१० (२०%)
	शहरी	१२(२४%)	१०(२०%)	२८ (५६%)

आलेख कमांक :- १ शैक्षणिक कार्यातील सहभागाचा अभ्यास



विश्लेषण व अर्थनिर्वचण - वरील सारणी वरुन ..

१) ग्रामीण भागातील शैक्षणिक कार्यातील सहभागाचा अभ्यास यात विदयार्थी मार्गदर्शनात २५ (५०%) टक्के तर अनुभवकथन सोहळा १० (२०%) सहभाग दिसून येतो.

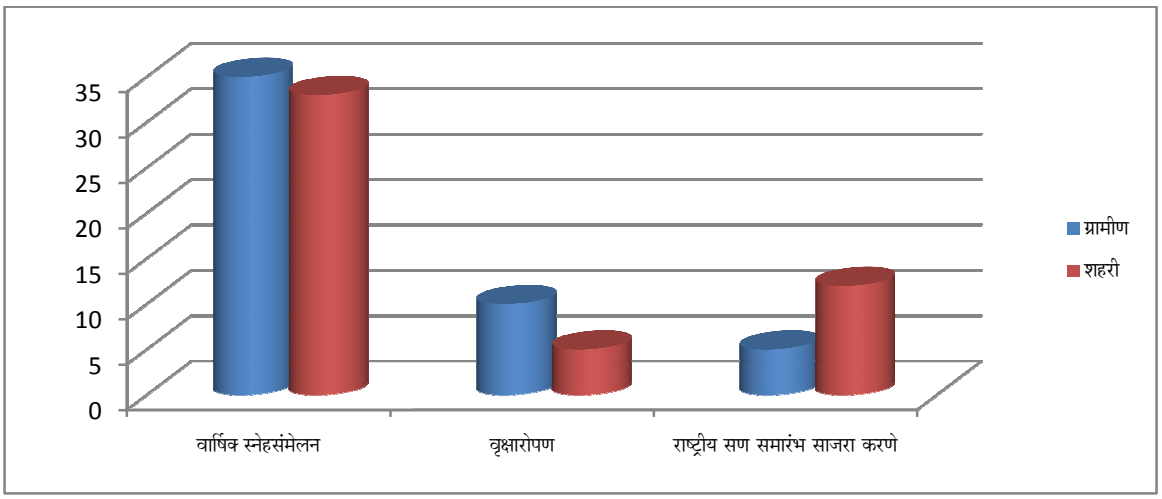
२) शहरी विदयार्थी मार्गदर्शन १२(२४%) टक्के, विदयार्थी समुपदेशनात १० (२०%) टक्के तर अनुभवकथन सोहळा २८ (५६%) टक्के सहभाग दिसून येतो.

३) शैक्षणिक कार्यातील ग्रामीण भागातील विदयार्थी मार्गदर्शनात सर्वात जास्त तर अनुभव कथन सोहळा यामध्ये शहरी भागाचा सर्वात जास्त सहभाग दिसून येतो.

४) ग्रामीण भागातील लोक समुदाय हा विदयार्थी मार्गदर्शनासाठी पुढे असतो तर अनुभव कथन सोहळासाठी शहरी भागातील पालक हा ग्रामीण भागाच्या तुलनेने सहभागी अधिक होत असतात.

समुदायाचा सहभागाचा		वार्षिक स्नेहसंमेलन	वृक्षारोपण	राष्ट्रीय सण समारंभ साजरा करणे
शैक्षणिक कार्यातील सहभागाचा अभ्यास	ग्रामीण	३५(७०%)	१०(२०%)	०५(१०%)
	शहरी	३३(६६%)	०५(१०%)	१२(२४%)

आलेख क्रमांक : २ सहशालेय उपक्रमातील सहभाग



विश्लेषण व अर्थनिर्वचण - वरील सारणी वरुन ..

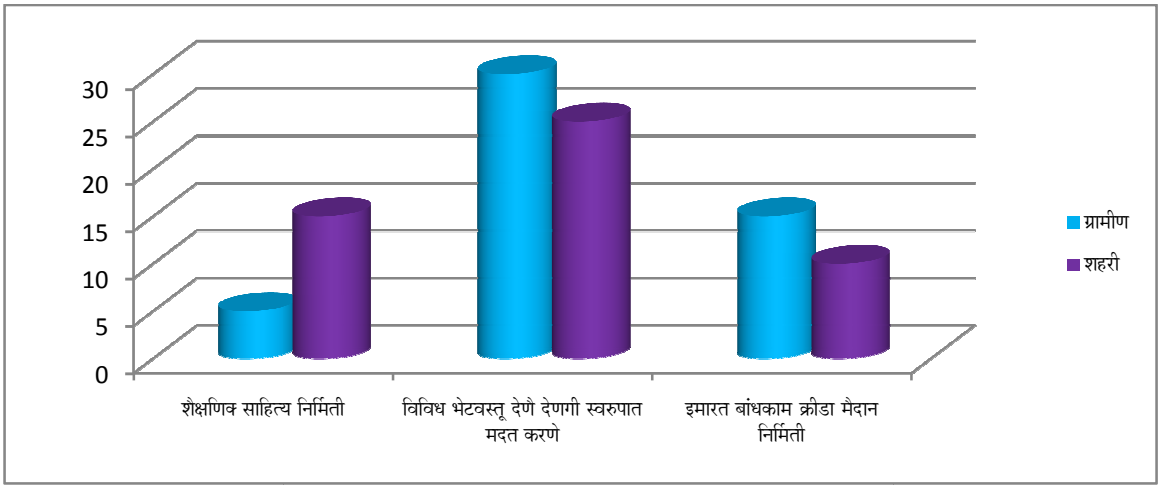
१) ग्रामीण भागातील सहशालेय उपक्रमातील सहभागाचा अभ्यास यात वार्षिक स्नेहसंमेनल ३५ (७०%) टक्के, वृक्षारोपण १०(२०%) टक्के तर राष्ट्रीय सण समारंभ साजरा करणे ०५(१०%) टक्के सहभाग दिसून येतो.

२) शहरी भागातील सहशालेय उपक्रमातील सहभागाचा अभ्यास यात वार्षिक स्नेहसंमेनल ३३(६६%) टक्के, वृक्षारोपण ०५(१०%) टक्के तर राष्ट्रीय सण समारंभ साजरा करणे १२(२४%) टक्के सहभाग दिसून येतो.

३) वार्षिक स्नेहसंमेलन उपक्रमातील ग्रामीण व शहरी भागातील पालक सर्वात जास्त सहभागी दिसून येतात. दोन्हींचे प्रमाण जवळपास सारखे असून राष्ट्रीय सण समारंभ साजरा करणे व वृक्षारोपण या दोन्हीमध्ये मात्र शहरी आणि ग्रामीण यामध्ये तफावत दिसून येते. वृक्षारोपण ग्रामीण भागातील पालक अधिक जागृत तर राष्ट्रीय सण समारंभ साजरा करणार मध्ये शहरी भागातील पालक हे जास्त सहभागी दिसून येतात.

समुदायाचा सहभागाचा		**शैक्षणिक साहित्य निर्मिती**	**विविध भेटवस्तू देणे देणगी स्वरुपात मदत करणे**	**इमारत बांधकाम क्रीडा मैदान निर्मिती**
आर्थिक उपक्रमातील सहभाग	ग्रामीण	०५(१०%)	३०(६०%)	१५(३०%)
	शहरी	१५ (३०%)	२५(५०%)	१०(२०%)

आलेख क्रमांक : ३ आर्थिक उपक्रमातील सहभाग



विश्लेषण व अर्थनिर्वचण - वरील सारणी वरुन ..

१) ग्रामीण भागातील आर्थिक उपक्रमातील सहभागाचा अभ्यास यात शैक्षणिक साहित्य निर्मिती ०५(१०%) टक्के, विविध भेटवस्तू देणे देणगी स्वरुपात मदत करणे ३०(६०%) टक्के तर इमारत बांधकाम क्रीडा मैदान निर्मिती १५(३०%) टक्के सहभाग दिसून येतो.

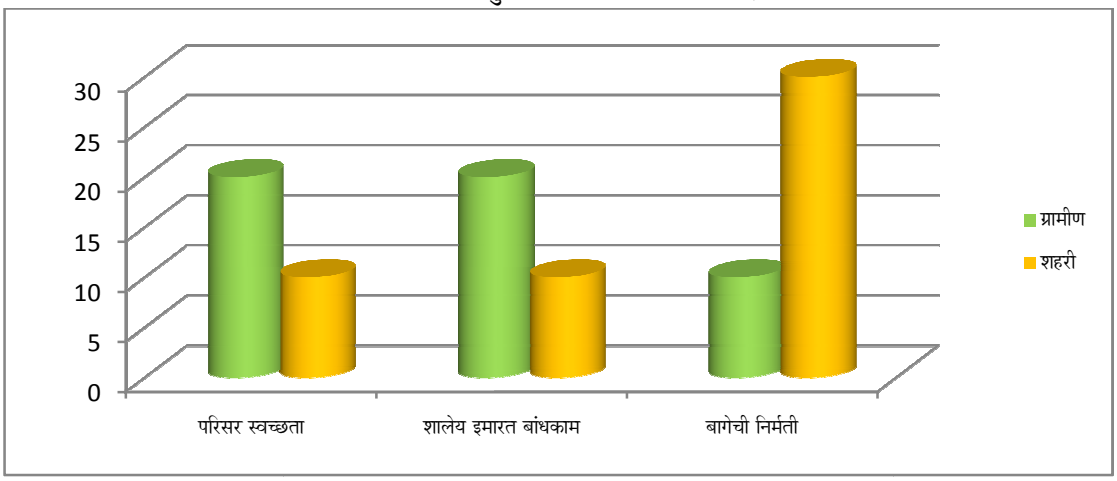
२) शहरी भागातील आर्थिक उपक्रमातील सहभागाचा अभ्यास यात शैक्षणिक साहित्य निर्मिती १५ (३०%) टक्के, विविध भेटवस्तू देणे देणगी स्वरुपात मदत करणे २५(५०%) टक्के तर इमारत बांधकाम क्रीडा मैदान निर्मिती १०(२०%) टक्के सहभाग दिसून येतो.

३) ग्रामीण भागातील आर्थिक उपक्रमातील सहभागाचा अभ्यास यात विविध भेटवस्तू देणे देणगी स्वरुपात मदत करणे या संदर्भात ग्रामीण, शहरी भागातील सर्वात जास्त सहभाग दिसून येतो.

४) शैक्षणिक साहित्य निर्मिती मध्ये ग्रामीण भागातील पालक शहरी भागाच्या तुलनेत मागे दिसून येतात त्यांचा सहभाग त्यात दिसून येत नाही.

समुदायाचा सहभागाचा		**परिसर स्वच्छता**	**शालेय इमारत बांधकाम**	**बागेची निर्मिती**
आर्थिक उपक्रमातील सहभाग	ग्रामीण	२० (४०%)	२० (४०%)	१० (२०%)
	शहरी	१० (२०%)	१०(२०%)	३० (६०%)

आलेख क्रमांक : ४ मनुष्यबळाचा उपक्रमातील सहभाग



विश्लेषण व अर्थनिर्वचण - वरील सारणी वरुन ..

१) ग्रामीण भागातील मनुष्यबळाचा उपक्रमातील सहभागाचा अभ्यास यात परिसर स्वच्छता २० (४०%) टक्के, शालेय इमारत बांधकाम २० (४०%) टक्के तर बागेची निर्मिती १०(२०%) टक्के सहभाग दिसून येतो.

२) शहरी भागातील मनुष्यबळाचा उपक्रमातील सहभागाचा अभ्यास यात परिसर स्वच्छता १०(२०%) टक्के, शालेय इमारत बांधकाम १०(२०%) टक्के तर बागेची निर्मिती ३० (६०%) टक्के सहभाग दिसून येतो.

३) ग्रामीण भागातील मनुष्यबळाचा उपक्रमातील सहभागाचा अभ्यास यात परिसर स्वच्छता, शालेय इमारत बांधकाम करणे या संदर्भात ग्रामीण भागातील सर्वाज जास्त सहभाग दिसून येतो तर बागेची निर्मिती यात शहरी भागातील पालकांपेक्षा अधिक सहभाग दिसून येतो.

४) परिसर स्वच्छता, शालेय इमारत बांधकाम यात शहरी पालक ग्रामीण पालकांच्या तुलनेत मागे अथवा कमी सहभागी होतात यावरुन सांगता येईल.

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ऑनलाईन शिक्षणातील संधी व त्यापुढील आव्हाने

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सारांश:- संस्कृतीच्या समृध्दीसाठी शिक्षणाचे महत्व अतुलनीय आहे. शिक्षणातून समजुतदारपणा येतो व समजुतदारपणातून संस्कृती जोपासली जाते आणि संस्कृतीतून देशाची समृध्दी अर्थातच विकास साधला जातो. त्यासाठी शिक्षण सर्वसामान्यांपर्यंत पोहचणे ही काळाची गरज आहे. देशाच्या विविध प्रदेशात प्रचंड विषमता असल्याचे आपल्याला दिसते. अशा वेळेस आताच्या धकाधकीच्या परिस्थितीत पारंपारिक शिक्षण समाजाच्या प्रत्येक स्तरापर्यंत पोहचवणे जिकरीचे झाले आहे. त्यामुळे त्यामध्ये आधुनिकता व लवचिकता आणणे गरजेचे झाले आहे. सध्याच्या तंत्रज्ञानाच्या युगात तेशक्य ही आहे. डिजीटल तंत्रज्ञानाचा उपयोग करुन ऑनलाईन शिक्षणाची सोय झाल्यास विद्यार्थ्यांच्या वैयक्तिक अडचणींवर मात करता येऊन विद्यार्थी शिक्षणात सातत्य ठेऊ शकतात. तसेच जे विद्यार्थी माध्यमिक स्तरानंतर शाळा सोडून देतात तसेच उच्च शिक्षण घेऊ शकत नाहीत त्यांना ऑनलाईनच्या माध्यमातून शिक्षणाची संधी मिळू शकते. आपल्या देशात असे अनेक विद्यार्थी आहेत की, जे आर्थिक परिस्थितीमुळे किंवा घरगुती अडचणींमुळे इच्छा असूनही वेळेअभावी शिकू शकत नाहीत अशा विद्यार्थ्यांसाठी ऑनलाईन शिक्षण ही त्यांच्या प्रगतीसाठी संधी होऊ शकते आणि समाजाच्या जडणघडणीत त्यांचा हातभार लागू शकतो. ऑनलाईन शिक्षणाच्या जरी मर्यादा असल्या तरी त्यातील संधी ओळखून त्याचा फायदा सर्व सामान्यांना होईल अशा सकारत्मकतेची आज आवश्यकता आहे.

प्रस्तावना :-"नहि ज्ञानेन सदृशं पवित्रमिह विद्यते।" म्हणजेच या भूतलावर ज्ञानासारखे पवित्र असे काही नाही. शिक्षणाचे ध्येय अनेकांनी विविध पध्दतीने वर्णिले आहे. "माणसामध्ये आधीच असलेल्या पूर्णत्वाचे प्रकटीकरण करणे म्हणजे शिक्षण" असे शिक्षणाचे वर्णन स्वामी विवेकानंद यांनी केले आहे. २१व्या शतकात वावरत असतांना आधुनिक भारताने आत्मनिर्भरतेकडे झेप घ्यायला सुरूवात केलीय. या काळात इलेक्ट्रॉनिक्समध्ये अनेक नवनविन शोध लागल्याने मानवी जीवन सुकर होण्यासाठी मोठ्या प्रमाणावर मदत झाली त्यायोगे औद्योगिक क्षेत्र, वैद्यकिय क्षेत्र, संशोधन क्षेत्र इ. क्षेत्रात परिवर्तनाला सुरुवात झाली. यादरम्यान शैक्षणिक क्षेत्रात ही परिवर्तनाची नांदी आली. आताच्या काळात अन्न, वस्त्र, निवारा या माणसाच्या मुलभूत गरजेबरोबरच शिक्षण हे ही तेवढेच आवश्यक असल्याचे लक्षात येते. कारणशिक्षणा मुळेच माणूस अन्न, वस्त्र, निवारा या मुलभूत गरजा पूर्ण करण्यासाठी स्वयंपूर्ण बनू शकतो व त्यासाठी त्याला कोणावर अवलंबून रहावे लागणार नाही, फक्त शिक्षण त्या दर्जाचे मिळणे आवश्यक आहे त्यासाठी शिक्षण प्रक्रियेत काळानुसार योग्य ते बदल घडून येणे आवश्यक असते.

शिक्षण ही अखंडपणे बदलत जाणारी प्रक्रिया आहे. परिवर्तन ही काळाची गरज असते आणि गरज ही शोधाची जननी आहे. अशाच गरजेतून ऑनलाईन शिक्षणाची सुरूवात झाली. डिसेंबर २०१९ मध्ये चीनमध्ये कोव्हिड १९ या घातक विषाणूने प्रचंड धुमाकूळ घातला. कोरोना या संसर्गजन्य रोगाने लवकरच सबंध जगाला काबीज करून हाहाकार उडवून दिला कोरोनाचा (कोव्हिड-१९) मार्च २०२० मध्ये भारतात प्रवेश होऊन कोरोनाचा प्रादुर्भाव वाढण्यास सुरूवात झाली. आणि जागतिक आरोग्य संघटनेने दिलेल्या दिशा निर्देशाप्रमाणे भारतात २२ मार्च २०२० पासून संपूर्ण लॉकडाऊन करण्यात आला. या पूर्वी कधीही हा अनुभव जगाने अनुभवलेला नव्हता. अचानक सर्व बंद झाल्याने देशातील सर्वच क्षेत्रात या कठीण प्रसंगी काय उपाय योजना करता येतील याचा शोध घंण्यास सुरूवात झाली. सुरूवातीच्या एकदोन महिने गेल्यानंतर प्रत्येक क्षेत्रात आधुनिक नवनविन यंत्रणांचा वापर सुरू झाला. शिक्षण क्षेत्र जरी अत्यावश्यक सेवेत मोडत नसले तरी जास्त काळ शिक्षण बंद ठेवणे देशाला परवडणारे नव्हते. त्याचप्रमाणे विद्यार्थ्यांचे शैक्षणिक वर्ष वाया जाऊ नये यासाठी शिक्षण विभागातील सर्वांचा खटाटोप सुरू झाला आणि अध्यापनात नविन प्रयोगांचा, तंत्रांचा, कौशल्यांचा प्रभावीपणे वापर करून शिक्षकांनी ऑनलाईन शिक्षणाची सुरूवात केली. शिक्षणात डिजीटल तंत्रज्ञानाचा वापर हा यापूर्वी खूप काळापासून सुरू होता मात्र झुम, गुगल मीट, वेबेक्स यासारख्या ऑनलाईन ॲपच्या मदतीने एकमेकांपासून दूर असूनही शिक्षण देणे, तसेच विविध शैक्षणिक वेबसाईटसच्या, यूट्यबच्या लिंक्स विद्यार्थ्यांना देऊन त्यामाध्यमातून विद्यार्थ्यांना शिक्षणाच्या प्रवाहात टिकवून ठेवणे याला ऑनलाईन शिक्षण म्हणतात. डिजीटल युगात ई-लर्निंगची व्याख्या करतांना असे म्हटले जाते की, लर्निंग

इलेक्ट्रॉनिकली, लर्निंग इफेक्टिव्हली, लर्निंग इझिली. इलेक्ट्रॉनिक माध्यमांचा उपयोग करून इलेक्ट्रॉनिक संवादांद्वारे प्रभावशाली, सुलभपणे आणि गतिमान शिक्षण दिले जाते, त्याला ऑनलाईन लर्निंग म्हटले जाते.

सुरूवातीला उच्च शिक्षणात व नंतर माध्यमिक स्तरावरील शिक्षणात या प्रयोगाला सुरूवात झाली. ऑनलाईन शिक्षण हे प्राथमिक शाळेसाठी पाहिजे तेवढे प्राभावीपणे देणे शक्य नसल्याचे या दरम्यान दिसले. कोरोना सारख्या महामारीच्या काळात ऑनलाईन शिक्षण हे भारतात पूर्णपणे नविन असल्याने त्यासाठी शिक्षकांना आवश्यक ते प्रशिक्षण देणे, किंवा त्यासाठी आवश्यक योग्य ती यंत्रणा उभारणे हे शासनाच्या आवाक्याबाहेरचे होते. शिक्षकांच्या आणि विद्यार्थ्यांच्या त्यासाठी अथक परिश्रमानंतर काही प्रमाणात ते शक्य करता आले. कारण या प्रक्रियेत ग्रामीण भागातील विद्यर्थ्यांना मोबाईलची उपलब्धता, विजेची उपलब्धता, इंटरनेट, कनेक्टिव्हिटी , रिचार्जची समस्या या सारख्या अनेक अडचणींचा सामना करावा लागला. या सर्व अनुभवाने कोरोना काळानंतर मात्र ऑनलाईन शिक्षण हे ऑफलाईन शिक्षणाला म्हणजेच प्रत्यक्ष समोरसमोर बसून शिकवणे या पारंपारिक शिक्षणाला पर्याय असूच शकत नाही हे या प्रयोगातून सिध्द झाले मात्र असे असले तरी काळानुरुप बदल स्विकारणे अपरिहार्य आहे. व त्यासाठी नविन संशोधने होणे क्रमप्राप्त आहे. म्हणजेच ऑनलाईन शिक्षणाच्या अनेक अडचणी असल्या तरी कोरोना सारख्या महामारीच्या धोक्यांचा विचार करुन ते पुढच्या काळात आवश्यक त्या बदलांसह स्विकारावेच लागेल.

ऑनलाईन शिक्षणातील संधी :-

गेल्या काही वर्षात पारंपारिक शिक्षणाची संकल्पना मोठ्या प्रमाणात बदलली आहे. आपण आता डिजीटल आणि ऑनलाईन युगात प्रवेश करत आहोत. दैनंदिन जीवनात आता प्रत्येक क्षेत्रात ऑनलाईन हा शब्द परवलीचा शब्द झालेला आहे. कारण सकाळी उठल्यापासून वर्तमान पत्र हे ऑनलाईन आपल्याला मोबाईलवर वाचता येते, घरामध्ये स्वयंपाकासाठी लागणारी सामग्री आपण ऑनलाईन घरबसल्या मागवू शकतो, ऑफिसला जाण्यासाठी वाहनांचे बुकिंग आपण ऑनलाईन केले तर आपल्या वेळेत आपल्याला ती सुविधा मिळू शकते, प्रत्येक ऑफिसातील प्रशासकिय कामामंध्ये संगणकाद्वारे ऑनलाईन कामे करण्याचा प्रयत्न सुरु आहे, भाजीपाला घेण्यापासून , पाणीपुरीच्या गाडीवरचे खाद्यपदार्थ घेण्यापासून ते मोठमोठ्या खरेदी-विक्रीच्या व्यवहारामध्ये ऑनलाईन पेमंटची लोकांना आता सवय झालेली आहे. त्याचप्रमाणे जगातील कोणत्याही देशातून आपण ऑनलाईन पेमंटच्या माध्यमातून वस्तु खरेदी करु शकतो. शैक्षणिक क्षेत्रातील प्रशासकिय कामांबरोबरच मूल्यमापन प्रक्रिया, निकाल लावणे ॲडमिशन प्रक्रिया या सर्व गोष्टी ऑनलाईन सुरु झालेल्या आहेत कारण त्याचे फायदे सर्वांना अनुभवास मिळत आहेत. अशाप्रकारे आपल्या दैनंदिन जीवनातील एवढ्या सर्व गोष्टींसाठी डिजीटल साधनांचा ऊपयोग होतो तर शिक्षणातील अध्ययन-अध्यापन प्रक्रिया ऑनलाईन करणेही आवश्यक आहे. शालेय शिक्षणाबरोबर महाविद्यालयीन शिक्षण प्रक्रियेत ऑनलाइन साधनांचा उपयोग केल्यास ते खालील प्रमाणे फायद्याचे ठरेल.

१) ऑनलाईन शिक्षण हे जगाच्या कोणत्याही कानाकोप-यात आपण असलो तरी तेथे ते अभ्यासणे शक्य आहे तसेच जगाच्या कोणत्याही देशातील ज्ञान आपण घरबसल्या मिळवू शकतो. इंटरनेट सुविधा असल्याने शैक्षणिक तसेच इतर ही सामान्य ज्ञान मुबलक स्वरुपात संगणकावर आपण वाचू शकतो.

२) अनेक ऑनलाईन सॉफ्टवेअर्स उपलब्ध असल्याने शिक्षकांना घरी बसून आपापल्या विषयांवर अधिक अद्ययावत माहिती मिळवता येते आणि त्याचा लाभ आपल्या विद्यार्थ्यांना करुन देता येतो.

३) ऑनलाइन शिक्षण जसे मोबाईल किंवा संगणकाद्वारे देता येते तसेच परीक्षा देखील ऑनलाइन घेता येते, त्यामुळे वेळेची बचत होते, पैशांची बचत होते, तसेच अधिकच्या श्रमाची बचत होते.

४) ऑनलाइन अध्यापनात प्रत्येक घटकावर आधारीत अनेक चलचित्र तसेच ३-डी ॲनिमेशन, यु-ट्युब व्हिडीओ आपण मिळवून त्याच्या लिंक विद्यार्थ्यांना उपलब्ध करुन दिल्यास विद्यार्थ्यांना त्या संज्ञा, संकल्पना आकलन होण्यास सोपे होते.

५) शिक्षण व्यवस्थेत अनिवार्यपणे परिवर्तन घडवणा-या उदयोन्मुख क्रांतीकारी तंत्रज्ञानाकडे विशेष लक्ष देणे आवश्यक आहे कारण भविष्यातील शिक्षण व्यवस्थेचे प्रतिबिंब त्यात सामावलेले आहे. या पूर्वीच्या शैक्षणिक धोरणात इंटरनेटमुळेघडू शकणा-या क्रांतीकारी बदलांच्या परिणामांचा अंदाज बांधणे कठीण होते. या जलद आणि क्रांतीकारी बदलांना तोंड देण्याची आपल्या सध्याच्या शिक्षण व्यवस्थेची असमर्थता, वाढत्या स्पर्धात्मक जगात वैयक्तिकरित्या आणि राष्ट्रीय पातळीवर आपल्यासाठी प्रतिकुल परिस्थिती निर्माण करते. म्हणून आधुनिक जगात तंत्रज्ञानाचा उपयोग अपरिहार्य झालेला आहे.

६) ऑनलाईन शिक्षणात कृत्रिम बुध्दिमत्ता, आभासी वास्तविकता हे नविन तंत्रज्ञान म्हणून उदयास आले आहे. त्याच्या साहाय्याने भाषेसारख्या विषयातील कथा, कविता, संवाद मूळ स्वरुपात सादर करता येतात. कवितांना चाल लावून शिकवता येतात. गणितासारख्या विषयातील अमूर्त संकल्पनांना मूर्त स्वरुप देऊन शिकवता येते. इतिहासातील एतिहासिक घटना चलचित्रांच्या साहाय्याने किंवा ॲनिमेशनच्या रुपाने हुबेहुब दर्शवता येतात व ते विद्यार्थ्यांच्या चिरकाल लक्षात रहाते. भूगोलातील सूर्यमाला जगभरातील देशांचे स्थान व हवामान इ. गोष्टी गुगल मॅप, वर्ल्ड क्लॉकच्या मदतीने अधायपनास सुलभ होते.

७) ऑफलाइन शिक्षणात वर्ग संख्या मर्यादित असू शकते मात्र ऑनलाइन शिक्षणात एक शिक्षक एकाच वेळी विविध स्थळी अनेक बसलेल्या विद्यार्थ्यांना अध्यापन करु शकतो. त्या साठी तो वेगवेगळ्या साधनांचा परिणामकारकरीत्या उपयोग करु शकतो.

८) ऑनलाइन शिक्षण हे सतत नविन बदल स्विकारणारे असल्याने विद्यार्थ्यांना अद्ययावत ज्ञान मिळण्यास मदत होते.

९) ऑनलाइन शिक्षण व्यवस्थेत एकदा अध्यापन केल्यानंतर ते रेकॉर्डेड शैक्षणिक साहित्य नंतर अनेकदा वापरता येऊ शकते. विद्यार्थी देखील ऑफलाइन किंवा ऑनलाइन सत्रात जो घटक नीट समजला नसेल तो घटक पुन्हा पाहिजे तेव्हा पाहू शकतो व पुनरावृत्तीमुळेआकलन सोपे होते.

१०) ऑनलाइन शिक्षण देत असतांना एखाद्या विषयातील तज्ञ आपल्याला मार्गदर्शन करण्यासाठी आपण उपलब्ध करु शकतो व तो त्या संबंधित विषयावर चांगली माहिती विद्यार्थ्यां पर्यंत पोहचवू शकतो. त्यामुळे ग्रामीण भागातील मुलांनाहीतज्ञ व्यक्तीचे मार्गदर्शन मिळाल्याने त्याच्या ज्ञानात भर पडण्यास मदत होईल. म्हणजेच शिक्षणासाठी काही काळ तरी भौगोलिक अंतर संपले आहे.

११) ऑनलाइन शिक्षणामुळे कोरोना सारख्या महामारीच्या काळात घरी राहून शिक्षण सुरु ठेवता येईल आणि शिक्षणात खंड पडण्याची भिती नाहिशी होईल. म्हणूनच नविन राष्ट्रीय शैक्षिणिक धोरणात शिक्षणात तंत्र ज्ञानाच्या वापराला प्राधान्य दिले असून नवनविन तंत्रज्ञान शोधण्यासाठी प्रवृत्त करण्यासाठी ठोस उपाययोजना करण्याचे सुचविले आहे.

१२) ऑनलाईन पध्दतीमुळे संशोधक आपल्या माहितीचे संकलन करण्यासाठी कमीतकमी वेळात माहिती ऑनलाईन स्वरुपात विस्वासार्ह रुपात जमा करु शकतो, त्यावर संख्या शास्त्रीय विश्लेषण करु शकतो तसेच अनुमान काढू शकतो. म्हणजेच संशोधन कर्त्यासाठी ऑनलाइन पध्दती फायद्याची आहे त्यामुळे वेळेची व पैशांची बचत होते.

१३) ऑनलाइन शिक्षणात तोच तो पणा किंवा रटाळपणा नसल्याने व विविध रंगबिरंगी आकर्षक चित्रे, फिल्मस् , ॲनिमेशन असल्याने मनोरंजनातूनशिक्षण हे उद्दिष्ट सफल होते. परिणामी मुलांनाअभ्यासात आवड निर्माण होण्यास मदत होते.

ऑनलाईन शिक्षणापुढील आव्हाने :-

गेल्या काही वर्षात पारंपारिक शिक्षणाची संकल्पना मोठ्या प्रमाणात बदलली आहे. आपण आता डिजीटल आणि ऑनलाईन युगात प्रवेश करत आहोत. जागतिकीकरणामुळे शिक्षण व्यवस्थेत बदल होणे देखील महत्वाचे आहे. काळानुसार पारंपारिक शिक्षण पध्दतीत सुधारणा घडवून आणणे व नविन तंत्रज्ञानाचा अध्यापनात वापर करणे आवश्यक आहे. म्हणूनच ऑनलाईन शिक्षणाचा पुरस्कार केला जातो परंतु असे असले तरी भारतासारख्या विविधतेने नटलेल्या देशात गरिबी, अशिक्षितपणा, अंधश्रध्दा, शिक्षणाबद्दल अनास्थायातून ऑनलाईन शिक्षणाच्या अनेक मर्यादा आहेत. त्या खालील प्रमाणे

१) शिक्षण म्हणजे फक्त पुस्तकी ज्ञान नसून शाळेत कला, क्रिडा, तसेच अनेक सांस्कृतिक कार्यक्रमांचे उपक्रमांचे आयोजन केले जाते त्या मधून विद्यार्थ्यांचा सर्वांगीण विकास होत असतो. ऑनलाईन शिक्षणात अशा उपक्रमांची उणीव भासते.

२) मोबाईल आणि इंटरनेट सुविधा सतत वापरल्याने विद्यार्थ्यांना त्याचे व्यसन जडू शकते विद्यार्थी तासनतास मोबाइल घेऊन बसतात. त्यामुळे त्यांच्या डोळ्यावर ताण पडून परिणामी मेंदूवरविपरित परिणाम होऊ शकतो.

३) शाळेत प्रत्यक्ष समोरासमोर मित्र मैत्रिणी आणि शिक्षकांमध्ये आंतरक्रिया घडत असल्याने विद्यार्थ्यांमध्ये आत्मविश्वास निर्माण होतो. ऑनलाईन शिक्षणामुळे विद्यार्थी एकलकोंडे होण्याची भिती असते. त्यामुळेऑनलाईन माध्यमांची गरजेपुरता उपयोग करणे फायदेशीर आहे.

४) ऑनलाईन शिक्षणात विद्यार्थ्यांमध्ये शिस्तीची कमतरता निर्माण होते. शिक्षक समोर असल्याने वर्गाध्यापनाच्या वेळेस विद्यार्थ्यांचे अवधान शिकवण्याकडे असते, मात्र ऑनलाईन शिक्षणात विद्यार्थी काय करतात या कडे शिक्षकांचे लक्ष नसल्याने मुले ऑनलाईन शिक्षणात गांभिर्याने सहभागी होत नाहीत.

५) भारतासारख्या विकसनशिल देशात अजूनही अनेक कुटूंबांचा आर्थिक स्तर दारिद्रय रेषेखालील असल्याने त्यांना दोन वेळच्या जेवणाची तजवीज करणे अवघड असते अशा परिस्थितीत मुलांना मोबाईल किंवा लॅपटॉप विकत घेणे परवडणारे नाही, त्यामुळे असे अनेक विद्यार्थी शिक्षणापासून वंचित राहण्याची भिती आहे.

६) ऑनलाईन शिक्षणात विद्यार्थ्यांना घरी असल्याने त्याला अनेक अडचणींचा सामना करावा लागतो. घरी येणारे-जाणारे किंवा आजूबाजूच्या गोंधळामुळे विद्यार्थ्यांना अभ्यासात अवधान टिकवून ठेवणे अवघड होते.

७) ग्रामीण भागातील विद्यार्थ्यांना विजेची समस्या, इंटरनेटची समस्या, कनेक्टिव्हटीचा प्रॉब्लेम ह्या नेहमीच्याच असतात त्यामुळे अभ्यासात सातत्य टिकवणे अशक्य होते.

८) महाविद्यालयीन विद्यार्थी मोबाइलचा उपयोग गैर मार्गासाठी करण्याची शक्यता नाकारता येत नाही.

९) ऑनलाईन शिक्षणात कोणता विद्यार्थी काय करतो आहे हे शिक्षकांना दिसत नाही कारण ते स्वतःचा व्हिडीओ बंद करु शकतात. त्यामुळे विद्यार्थी ऑनलाईन तासाला मोबाईल सुरु ठेवून इतर कामे करु शकतात. त्यामुळे ऑनलाईन शिक्षण हे प्रत्यक्ष शिक्षणाला पर्याय असू शकत नाही.

१०) ऑनलाईन शिक्षणात सतत स्क्रिनचा वापर केल्यामुळे विद्यार्थ्यांमध्ये अवधान केंद्रित करण्याची क्षमता कमी होऊ शकते. चिडचिडेपणा वाढू शकतो व या सारख्या अनेक शारिरीक व्याधींची समस्या निर्माण होण्याची भिती आहे.

समारोप :- मार्शल मॅकेलोने म्हटल्याप्रमाणे संवाद आणि संज्ञापन क्रांतीमुळे जग जवळ आले आहे. त्यामुळे २१ व्या शतकात शिक्षणावर ही प्रसार माध्यमे आणि सोशल मिडीया यांचा प्रभाव पडलेला आहे. डिजीटल तंत्रज्ञानाचा उपयोग शिक्षण क्षेत्रात मोठ्या प्रमाणात केला जात असल्याने विद्यार्थ्यांना नविन ज्ञान, पाठ्यक्रम माहिती ही अकर्षक व सोप्या रुपात ऑनलाईन उपलब्ध झालेली आहे. या माहितीचा उपयोग जास्तीत जास्त विद्यार्थ्यांना कसा होईल यासाठी शिक्षकांना कटिबध्द रहावे लागेल. "Knowledge is at one's tip of Finger" संगणकामुळेव मोबाईलमुळे आपल्या बोटांवर ज्ञानाचे भांडार उपलब्ध आहे. व त्याचा सुयोग्य वापर करणे आपल्या हातात आहे. परंतू त्याचा अतिरेक हा मानव जातीसाठी हानिकारकही आहे. म्हणून तंत्रज्ञानाचा वापर ही शिक्षणासाठी भविष्यात जरी संधी असली तिचा अतिरेक किंवा गैरवापर ह्या त्याच्या वापरातील मर्यादा आहे. म्हणजेच ऑनलाईन शिक्षण ही काळाची गरज आहे. परंतू ऑनलाईन शिक्षण हे प्रत्यक्ष शिक्षणाला पर्याय असू शकत नाही पण पूरक असू शकते.

संदर्भसूची

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३) ब्रिजवासी हितेश, खिराडे संतोष. (२०२०) डिजीटल शिक्षण संसाधने व तंत्रे, प्रशांत पब्लिकेशन, पुणे.

४) शिक्षण मंत्रालय भारत सरकार, राष्ट्रीय शैक्षणिक धोरण २०२० शिक्षण विभाग, भारत सरकार, २०२०

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