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INSIDE

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Editorial Message

There is a questioning today of the basic postulate of the educational structure and its various system in india and in the rest of the world .The present system of education has its origin in the industrial age in Europe 200 years ago its industrial mindset design school to be mass processing factories that takes students as their raw materials and churn out certified professional to fit the needs of a mechanistic society, it ignores the learner as individuality, suppress creativity and discourage independent thought.. it's dehumanizing values have suffused modern pedagogy, wrapped it's priorities and brought about conditions of ecological crises and increasing poverty, hunger and violence.. Which are forcing man inevitably to face the realities of the modern society. At a time like this, a completely new approach to the postulates of education is necessary all over the world and there is urgent and growing need on new lines; but bold experiment and working models are few so the new road map is atmost important to guide the way to the new educational paradigm.. So the articles in this journal inspires and rekindles the new thoughts So i feel deeply previleged for being able to offer this book/ journal to students and educators

- **Dr. S.B. Yadawad**
Editor

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"A FRINGE OF LEAVES" BY PATRICK WHITE : A JOURNEY THROUGH THE FRINGES OF IDENTITY AND SOCIETY

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ABSTRACT

Patrick White's novel "A Fringe of Leaves" intricately weaves together themes of identity, society, and colonialism within the historical context of 19th-century Australia. Through the transformative journey of protagonist Ellen Roxburgh, the narrative explores the fluidity of identity in the face of adversity, challenging preconceived notions and exposing societal hierarchies. The collision of cultures and the harsh realities of colonial life underscore the novel's critique of power dynamics and moral dilemmas inherent in colonial expansion. The Australian landscape serves as both a physical and metaphorical backdrop, reflecting the characters' internal struggles. "A Fringe of Leaves" stands as a profound exploration of the human psyche, urging readers to contemplate the complexities of history, culture, and the ever-evolving self.This abstract delves into the thematic elements that define the novel's narrative tapestry.

Keywords : Indigenous, Exploration, Brutality, Adaptability, Desolation,

INTRODUCTION

In the realm of literature, certain works transcend their narratives to become mirrors that reflect the intricate tapestry of the human experience. Patrick White's novel "A Fringe of Leaves" is undoubtedly one such masterpiece. Published in 1976, this compelling literary work unfolds against the historical backdrop of 19th-century Australia, immersing readers in a world of identity exploration, societal upheaval, and the multifaceted complexities of colonialism. With a narrative that traverses the boundaries of culture, power, and self-discovery, White's novel invites us to journey through the fringes of both physical landscapes and the depths of the human psyche. Through the lens of historical fiction, "A Fringe of Leaves" challenges our perceptions of identity and offers a profound critique of colonial dynamics, all while weaving a captivating tale of transformation and exploration. As we delve into the heart of this remarkable novel, we peel back the layers of its themes to uncover a rich tapestry that continues to resonate with readers, transcending time and bridging the gaps between past and present.

EXPLORING IDENTITY

At the heart of "A Fringe of Leaves" lies a poignant exploration of identity-one that resonates with readers across time and space. The novel's protagonist, Ellen Roxburgh, embarks on a transformative journey that catapults her from the confines of her privileged English existence into the untamed wilderness of Australia. This upheaval thrusts Ellen into a profound confrontation with herself, forcing her to navigate the uncharted territories of her own identity.As Ellen navigates her unfamiliar surroundings, she encounters the indigenous inhabitants of the land, whose existence stands as a testament to the complexities of cultural identity. Through her interactions with these indigenous individuals, Ellen's preconceived notions are challenged, and the boundaries of her identity begin to blur. White masterfully captures the tension between the known and the unknown, the comfortable and the unfamiliar, inviting readers to contemplate the malleability of identity in the face of cultural collision.

As the narrative unfolds, Ellen's identity becomes a mirror for the broader human experience, an exploration of the myriad ways in which our sense of self can be moulded by circumstances, experiences, and encounters with others. Her transformation is a reminder that the journey of self-discovery often involves peeling back layers, confronting biases, and embracing the complexities that lie beneath the surface. As we embark on our exploration of "A Fringe of Leaves," we find ourselves drawn into a world where identity is not fixed, but rather a living, breathing entity shaped by the forces of history, society, and personal encounters. Patrick White's novel invites us to question our own assumptions, to venture beyond the borders of our comfort zones, and to embrace the transformative power of self-discovery. Through Ellen's journey, we are reminded that the fringes of identity are not just places of uncertainty, but fertile grounds for growth, understanding, and ultimately, a deeper connection to the diverse fabric of humanity.

At the heart of "A Fringe of Leaves," the theme of identity transformation serves as a driving force for the

narrative. Ellen Roxburgh's journey from her sheltered existence as an Englishwoman to her emergence as a survivor intimately acquainted with the challenges of the Australian wilderness showcases the malleability of identity under the pressures of adversity. White skilfully portrays how Ellen's encounters with indigenous cultures and convicts provoke a gradual shift in her perspectives, dismantling preconceived notions and encouraging a deeper exploration of her own beliefs.As Ellen navigates the cultural boundaries that separate her from the indigenous people, readers witness her gradual awakening to the complexities of race, privilege, and power. Her internal struggle to reconcile her upbringing with the stark realities of colonial society mirrors the broader human endeavour to understand one's place within a multifaceted world. White's portrayal of Ellen's evolution serves as a poignant reminder that identity is not static but rather a continuous journey shaped by experiences, introspection, and the willingness to engage with the unknown.

SOCIETY AND COLONIALISM

White's exploration of identity is inseparable from his critique of colonialism. The novel delves into the social hierarchies and racial tensions inherent in colonial societies. As Ellen navigates her new reality, she becomes a witness to the brutality inflicted upon both the indigenous people and the convicts by the colonial powers. This violence serves as a stark reminder of the destructive force that can arise from the pursuit of power and domination.Through characters like Ellen's husband Austin, a self-absorbed and power-hungry colonialist, and the escaped convict Sinner, who becomes a complex emblem of both villainy and redemption, White skilfully unveils the moral and ethical dilemmas posed by colonial expansion."A Fringe of Leaves" also serves as a searing commentary on the societal dynamics and colonialism of the 19th century. The novel lays bare the power imbalances, racial tensions, and moral dilemmas inherent in colonial societies. Ellen's captivity among escaped convicts and her subsequent interactions with indigenous people provide a stark depiction of the brutality inflicted by those in power upon the marginalized.

The character of Austin Roxburgh, Ellen's husband, embodies the self-absorbed colonialist mindset that seeks to exert dominance and control over both land and people. His actions and attitudes reveal the darker aspects of colonial expansion-a theme that White uses to challenge readers to critically examine the motivations and consequences of imperialism.Through the character of Sinner, an escaped convict, White skilfully navigates the grey areas of morality and redemption. Sinner's transformation from a figure of fear to one of understanding exemplifies the potential for growth and change, even in the most challenging of circumstances.Within the context of colonialism, "A Fringe of Leaves" explores the interplay between power, identity, and empathy. The colonialists' quest for dominance clashes with the indigenous people's struggle for survival and autonomy. This collision underscores the novel's broader exploration of identity as a multifaceted entity influenced by historical forces and societal power structures. As we witness the characters' grappling with their roles in the colonial project, we are confronted with the complexities of privilege, responsibility, and the ethical dimensions of power.

As we delve into the intricate layers of "A Fringe of Leaves," we are not only transported to a time long past, but also invited to engage with themes that resonate with our contemporary world. Patrick White's narrative reminds us that the legacies of colonialism continue to shape our societies and identities, urging us to confront our biases and question power dynamics that persist to this day. Through its exploration of identity and its critique of colonialism, "A Fringe of Leaves" serves as a timeless work that challenges us to embrace complexity, foster empathy, and journey to the fringes of both history and our own understanding of humanity.

Furthermore, the novel portrays the harsh realities faced by the convicts, who were often treated as expendable labour by the colonial establishment. The convicts, like the indigenous people, were victims of a system that exploited and oppressed them in the pursuit of economic gain. This depiction sheds light on the systemic injustices perpetuated by colonial societies and the lasting scars they left on both individuals and communities.White's narrative underscores the complexities of colonialism, challenging readers to question their assumptions about history and power. By interweaving the personal struggles of the characters with the broader societal forces at play, "A Fringe of Leaves" encourages readers to examine how colonialism shapes not only external landscapes but also internal landscapes of the mind and heart.

NATURE AND THE HUMAN PSYCHE

The Australian landscape in "A Fringe of Leaves" serves as both a backdrop and a reflection of the characters' internal struggles. The untamed wilderness becomes a metaphor for the unexplored regions of the human psyche. White's lyrical prose captures the vastness and unpredictability of the landscape, drawing parallels

between the external environment and the internal emotional terrain of the characters.In "A Fringe of Leaves," the intricate relationship between the natural world and the human psyche unfolds as a central motif, weaving together themes of transformation, resilience, and introspection. The Australian landscape, with its lush rainforests, rugged coastlines, and expansive desolation, emerges as a character in its own right, shaping the characters' psychological journeys and reflecting their emotional states.

As Ellen Roxburgh navigates the harsh terrain following the shipwreck, her physical challenges become symbolic of her internal struggles. The relentless environment mirrors her own internal battles, from the initial shock of the shipwreck to her evolving perceptions of self and society. The dense forests and vast oceans embody the uncharted territories of her consciousness, inviting readers to witness her gradual metamorphosis from an ethereal and sheltered woman to a person marked by strength and adaptability.The Australian wilderness also serves as a space for introspection and self-discovery. As Ellen grapples with the isolation and uncertainty of her circumstances, she finds solace in the raw beauty of the landscape. White's vivid descriptions of the flora and fauna evoke a sense of wonder and connection, emphasizing the healing power of nature on the human psyche. Ellen's moments of contemplation amidst the wilderness illustrate the therapeutic quality of nature, where the external world intertwines with her inner thoughts, leading to revelations and personal growth.

Moreover, the novel's portrayal of the natural world goes beyond its picturesque aspects. White captures the primal, untamed aspects of nature, highlighting its capacity for both creation and destruction. This duality reflects the complexity of the human psyche itself, capable of beauty and darkness, vulnerability and resilience. Through Ellen's experiences, readers witness the interplay between the serene serenity of the landscape and the depths of human emotion, showcasing how nature's ever-changing moods mirror the complexities within.In conclusion, "A Fringe of Leaves" masterfully entwines the Australian landscape with the intricate tapestry of human consciousness. The natural world acts as a mirror that reflects the characters' internal landscapes, guiding them through tumultuous emotional journeys and prompting self-reflection. Patrick White's narrative prowess lies not only in his portrayal of historical events and societal dynamics but also in his ability to illuminate the profound connection between the external environment and the depths of the human psyche, underscoring the novel's enduring relevance and impact.

CONCLUSION

"A Fringe of Leaves" by Patrick White stands as a testament to the author's prowess in delving into the intricacies of human nature, societal dynamics, and the fluidity of identity. Through the lens of historical fiction, White crafts a narrative that transcends time, inviting readers to contemplate the intersections of culture, power, and the human experience. As we journey through the fringes of Ellen Roxburgh's world, we are reminded that the exploration of identity is a perpetual endeavour-one that requires confronting the complexities of history, society, and self.In a world where cultural clashes, colonial legacies, and questions of identity continue to reverberate, White's novel serves as a poignant reminder of the importance of understanding the past in order to navigate the present. "A Fringe of Leaves" encourages us to question our own assumptions, challenge the boundaries we impose on ourselves and others, and strive for a deeper empathy that transcends societal fringes. Just as Ellen Roxburgh finds herself transformed by her harrowing journey, so too can we be transformed by engaging with the narratives that reveal the fringes of human experience, ultimately weaving a more compassionate and inclusive tapestry for the future.

REFERENCES

- **Anderson, Don :** 'A Severed Leg: Anthropophagy and Communion in Patrick White's Fiction', Southerly, 40.4 (1980): 339-417.
- **Bill Ashcroft :** Gareth Griffiths and Helen Tiffin, Key Concepts in Post-colonial Studies (London, Routledge, London, 2001).
- **Brady, Veronica :** 'A Properly Appointed Humanism: Australian Culture and the Aborigines in Patrick White's A Fringe of Leaves', Westerly, 28.2 (1983): 61-65.
- **David, Richards, Masks of Difference :** Cultural Representations in Literature, Anthropology and Art (Cambridge, Cambridge University Press, 1994).
- **Ghose, Zulfikar :** The One Comprehensive Vision', Texas Studies in Language and Literature, 21.2 (1979): 260-79.
- **Johnson, Manly :** 'A Fringe of Leaves: White's Genethlicon', Texas Studies in Language and Literature, 21.2 (1979): 226-39.
- **Maes-Jelinek, Hena :** 'Fictional Breakthrough and the Unveiling of "Unspeakable Rites" in Patrick White's A Fringe of Leaves and Wilson Harris's Yurokon', Kunapipi, 11.2 (1980): 33-43.

- *Continued on Page No. 18*

ISSN : 2249-2437 ARTICAL RNI REG.NO.KARENG/2011/42071

INTENSITY QUENCHING OF FLORESCENCE AND ABSORBANCE IN LASER DYE MOLECULE WITH GREEN SILVER NANOPARTICLES

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ABSTRACT

Optical absorption and fluorescence of ADS680HO in various solvents with the attachment of green, silver nanoparticles (AgNP's) shows quenching of absorption and fluorescence intensities. This is due to the size, shape, and coupling between the AgNP's and the dye, and energy transfer between the dye and the AgNP's. Fluorescence quenching of ADS680HO leads to many applications, notably for advancement in biomolecular labelling and fluorescence patterning and chemotherapy in cancer treatment.

Key words : dipole, ADS680HO, quenching, fluorescence, AgNP's.

INTRODUCTION

The present investigation is related to organized studies of extensively fluorescent American colorant ADS680HO(1- 7). Photo dye studies of ADS680HO is largely fluorescent, and new kind of highly ray colour patch has been a constant field of our interest because of a better understanding of the agitated state properties helps not only to design a new patch but also to see the performances for specific operations(3) like laser dye colourings, lithography, natural systems and molecular bias, biosensors, publishing technology, chemotherapy in cancer treatment, decreasingly used in energy transfer processes, it's extensively used to label the proteins in biochemistry, to understand the luminescence quenching process and to design multicolour ways etc. Considering the wide operations of ADS680HO, a detailed understanding of their photo physicalexplanation inspires us to take a detailed scientific disquisition in our present studies.

Metallic nanoparticles retain unique optic, electronic, chemical and glamorous photo physics that are strikingly different from those of the individual particles as well as their bulk counterparts. Colloidal results of noble metals, like silver and gold show innumerous operations that have entered considerable attention from experimenters. Quenching of the luminescence effectiveness when a laser dyer ADS680HO is in contact with silver nanoparticles(AgNP's) depends on electronic coupling between the electronic transition dipole moment and Plasmon resonance

Then we report quenching of optical abosorption and flourescence of ADS680HO dye laser with AgNP's. The effect of AgNP's on emulsion ADS680HO has important operations, similar as in chemotherapy for cancer treatment. still, so far, no methodical study related to the effect of optical absorption and fluorescence quenching of ADS680HO colour dye in different solvents in the presence of AgNP's has been carried out. We reveal new and unique optical studies with respect to optical absorption and fluorescence quenching of ADS680HO highly colourful laser dye with AgNP's.

2. EXPERIMENTAL

2.1. CHEMICALS USED

The laser dye ADS680HO was obtained from American Dye Source, Inc. Canada. The molecular formula and chemical structure of ADS680HO is given in Figure 1. The solvents used in our present study are methanol, ethanol, propanol, butanol, octanol, nonanol, DMSO, acetonitrile, ethyl acetate, benzene, toluene and glycerol. These solvents are of spectroscopic grade and were purchased from Sigma Aldrich, USA. The required solutions are prepared in the order of 10^{-5} mol/L concentration. Silver nitrate was purchased from Himedia Laboratories Pvt. Ltd. India. Ultra-deionised water was used for all solution preparations.

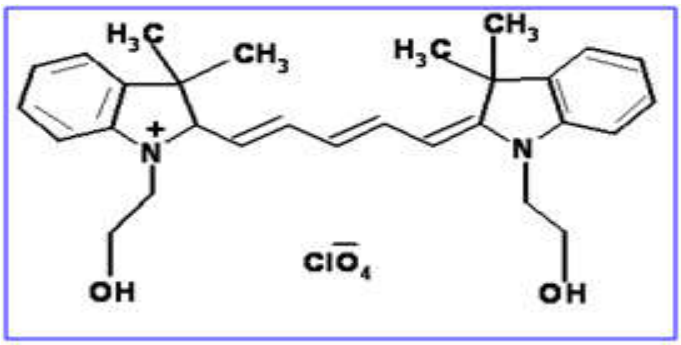

Figure 1. Molecular Structure and IUPAC name of ADS680HO

Molecular formula : C_{37} H_{39} N_2 O_6 Cl (ADS680HO)

IUPAC Name : 2-[5-(1,3-Dihydro-3,3-dimethyl-(2-hydroxyethyl)-2H-benz[e]indol-2-ylidene)-1,3-pentadienyl]-3,3-dimethyl-1-(2-hydroxyethyl)-3Hbenz[e]indolium perchlorate

2.2. GREEN NANOTECHNOLOGY:SYNTHESIS OF SILVER NANOPARTICLES USING OCIMUM SANCTUM (KRISHNA TULASI) LEAF EXTRACT

Fresh Ocimum Sanctum (Krishna Tulasi) leaves were collected and washed with doubly deionised water for several times. 20g of the leaves were dried at room temperature, cut and mixed with 200 ml of distilled water. Extraction was prepared on a magnetic stirrer with the heater at 1000C for 60 minutes. The solution was cooled to room temperature, filtered and stored the extract at 40C for further experiments. This extract was used as a reducing and stabilizing agent for the synthesis of silver nanoparticles. 2.5ml of the Krishna Tulasi leaf extract was added to 40ml (concentration of 0.1mM) of silver nitrate ($AgNO_3$) colour changed to yellow in 5-6 minutes [5]. This indicates the formation of silver nanoparticles. In the plant extract of Krishna Tulasi, phytochemicals eugenol, euginal, urosolic acid, carvacrol, linalool, limatrol, caryophyllene, methyl caricol, sitosterol, anthocyans are present, which are responsible to reduce the silver salt into silver nanoparticles. All chemical reactions especially reduction process of silver salt into silver nanoparticles are taking place on a magnetic stirrer at room temperature.

2.3. SPECTROSCOPIC MEASUREMENTS

Optical absorption and fluorescencemeasurements of ADS680HO laser dye with and without AgNP's in various solvents were recorded on Ocean Optics Spectrophotometer (HR 4000 high resolution model).

3. EFFECT OF AGNP'S ON ADS680HO LASER DYE

Optical properties of isolated colloidal particles have been intensively investigated through Mie's scattering theory with respect to their dependence on particle size, environment, and effect on a chosen dye in the presence of alcoholic solvents. Mie theory [8-13] is a mathematical and physical description of the scattering of electromagnetic radiation by spherical particles immersed in a continuous medium. The Mie scattering explanation begins with the macroscopic Maxwell's equations. The effect of the particular size of the nanoparticles on the peak resonant wavelength results from two different mechanisms depending on the particle size range. In the limit of $2R << \lambda$, (R is the radius of the particles and λ is the wave length of the light in the medium), only the electric dipole term contributes significantly [8] to the extinction cross section (σext).

$$Cext = \frac{24\,\pi R^3 \varepsilon_m^{\frac{3}{2}}}{\lambda} = \frac{\varepsilon''}{(\varepsilon' + 2\varepsilon_m)^2 + \varepsilon''}$$

Where ε' and $\varepsilon''$are the real and imaginary parts of the complex dielectric function of the particle and ε_m be the dielectric constant of the medium ($\varepsilon_m = \varepsilon' + \tau\varepsilon''$)

The origin of the SPR displayed by small particles is due to the condition in equation 25 is,

$$\varepsilon' = -2\,\varepsilon_m$$

In small metal particles, the dipole created by the electric field of light induces surface polarization charge which effectively acts as a restoring force for the free electrons. The net result is, the long wavelength absorption by the bulk metal is condensed to a small surface plasmon band, when condition (8) is fulfilled.

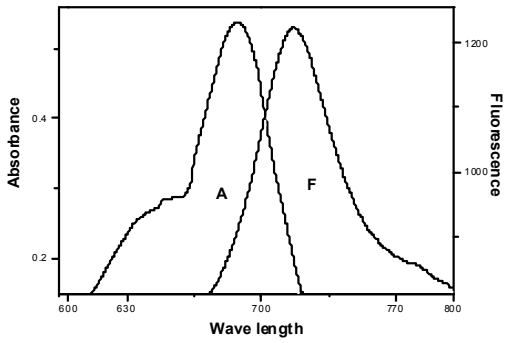

Figure 2. Absorption and emission spectra of ADS680HO in decanol.

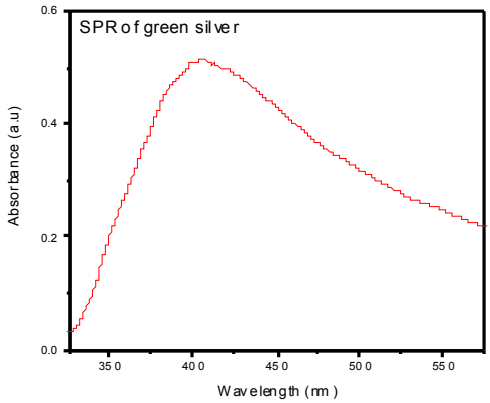

Figure 3. Surface Plasmon Resonance (SPR) of Silver Nanoparticles Synthesized by Ocimum sanctum (Krishna Tulasi) with SEM image.

4. ABSORPTION AND FLUORESCENCE QUENCHING OF LASER DYES WITH SILVER NANOPARTICLES

In the present case quenching of absorption and fluorescence was observed for ADS680HO dye molecule in alcohols attached with AgNP's via hydrogen bonding. Quenching is due to energy transfer rate from dye to the NP's is governed by [14] three factors. Absorption and emission spectra of ADS680HO before influence with silver nanoparticle is shown in Figure 2.

1. Coulombic overlap integral.
2. Position (surface plasmon frequency)
3. Width (inverse surface plasmon life time) of the absorption spectrum Of AgNP's relative to the dye.

The influence of coulombic interactions on the energy transfer has been studied with two factors.

1. Interaction between dye and AgNP's depends upon respective charge densities
2. The interaction within the dipole approximation

The charge densities of a dye, dipole moments of a dye and AgNP's are responsible for the energy transfer betweendye to AgNP's which leads to quenching in optical absorption UV-Vis spectra, exhibits a band between 670-700nm (in ADS680HO), is due to π - π^* transitions.

The attachment of AgNP's with a dye, induces a strong enhancement / quenching [9-19] of fluorescence is observed depending on the nature of the chosen dye.

Due to broadening of a plasmon explains the changes of molecular fluorescence near a AgNP's in the close proximity of a metal, the fluorescence rate of the molecules is a function of the distance between the probe molecule and the AgNP's metal surface. When fluorescent dye is in direct contact with the nano metal, the fluorescence of a molecule is completely quenched. So, in our case AgNP's and a dye attachment is little longer.

The size effect on the position of the surface plasmon band of alcoholic functionalized gold nanoparticles was investigated by measuring the UV-Vis absorbance spectra in the range 450-800nm with dye molecule (Figure 3). Alcohols were chosen as solvent for specific interactions with the -OH group, thiol group and ester group of ADS680HO dye chain, could lead marked effects on the optical properties of gold and silver nanoparticles.

When the dimensions of nanoparticles become smaller than the wavelength of the exciting light ($2R << \lambda$), energy can be confined in small spatial regions through the local excitation of surface plasmon resonance. The optical properties of metal nanoparticles are strongly influenced by their size, shape and surrounding environment, in addition to resonant energy transfer between closely spaced metal nanoparticles with the surrounding molecule also accounts.

A resonance energy transfer model [9-19] based on nonradiative decay provides a theoretical understanding of these observations of fluorescence quenching. The optical properties of molecules adsorbed on or enclosed in metallic and dielectric particles have been investigates both experimentally and theoretically in recent years. When a particle has been excited and is oscillating in the incident electromagnetic field, the exciting system may have a fluctuating electric dipole moment and causes the radiation. This light radiation from dipole moment provides the channel for radiative decay. On the other hand, the joule heating and plasmon absorption caused by these fields open the non-radiative decay channels. The competitions between radiative and nonradiative decay energy affects the fluorescence emission of the molecules located near the particles. If the nonradiative decay takes the dominating effect, fluorescence quenching occurs. The different distance behaviour of the radiative and nonradiative rates explains why the apparent quantum yield always vanishes at short distance from a metallic nanoparticle.

The observed fluorescence quenching (Figure 4) is attributed to the resonance energy transfer from ADS680HO to silver nanoparticles. This nonradiative decay can be theoretically studied using the Forster resonance energy transfer (FRET) theory [19]. When some amounts of silver colloidal nanoparticles are dropped in to the solution of ADS680HO dye molecule in various alcohols, molecules would tend to cluster around silver particles due to physical adsorption. Increasing the concentration of ADS680HO leads to more and more molecules adsorb on the silver nanoparticles. Quantum efficiency of silver nanoparticles is

$$Q = \frac{\Gamma^R}{\Gamma^R + \Gamma^{NR}}$$

Γ^R - radiative decay rate; Γ^{NR}- non radiative decay rate

Here, adsorption of AgNP's with the dye causes more and more nonradiative decay rate, as a result quantum efficiency decrease or fluorescence quenching is observed (Figure 4 & 5).

Static quenching could also may ascribed to an association of the dye with the silver nanoparticles through complexes of the nano metal with -OH group, thiol and ester group (Figure 6).

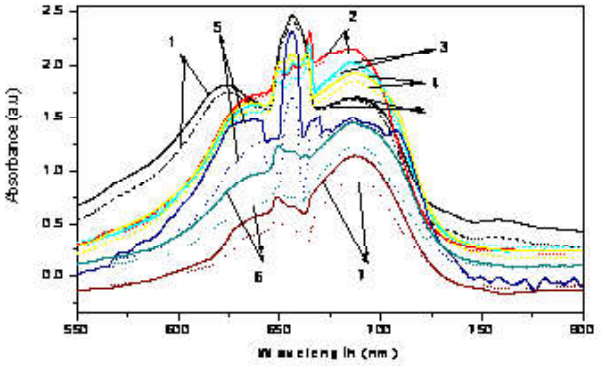

Figure 4. Absorption spectra of ADS680HO laser dye attached with (dotted)/ without (lined) AgNP's in alcohol solvents (1- methanol, 2 ethanol, 3-propanol, 4-butanol, 5-octanol, 6-decanol, 7-nonanol).

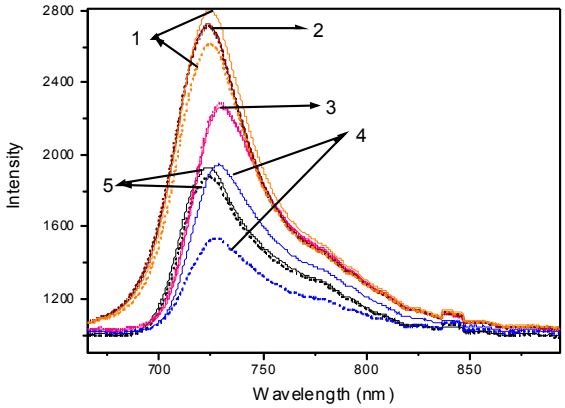

Figure 5. Fluorescence spectra of ADS680HO laser dye attached with (dotted)/ without (lined) AgNP's in alcohol solvents (1- decanol, 2- ethanol, 3-octanol, 4-butanol, 5-ethanol).

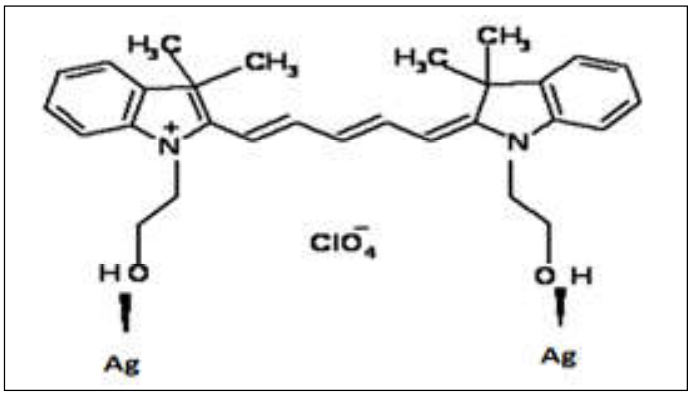

Figure 6. Attatchment of AgNP's with ADS680HO

4. CONCLUSIONS

Optical absorption and fluorescence of ADS680HO in alcohol solvents with and without attachment of AgNP's shows quenching in absorption and fluorescence intensities. This is because of size, shape, coupling between the AgNP's and the dye, and energy transfer between AgNP's and the dye. Quenching of fluorescence using AgNP's with ADS680HO leads to many applications, especially for advancement in biomolecular labeling, fluorescence patterning, and chemotherapy in cancer treatment.

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REFERENCES

- **U.S. Raikar, V.B. Tangod, S.R. Mannopantar, and B.M. Mastiholi :** Opt.Commun. 283(21), 4289 (2010).
- **U.S. Raikar, V.B. Tangod, C.G. Renuka, and B.M. Mastiholi. Afr. J. Pure Appl :** Chem. 4(4), 51 (2010).
- **U.S. Raikar, V.B. Tangod, B.M. Mastiholi, and S. Srinivas. Afr. J. Pure Appl :** Chem. 4(9), 188 (2010).
- **U.S. Raikar,V.B. Tangod and B.M. Mastiholi :** Opt. Commun. 284(19), 4761 (2011).
- **V.B. Tangod :** Conference Proceedings of one day online International Conference on Advanced Materials.2020
- **V. B.Tangod, P. U.Raikar, B. M. Mastiholi and U.S. Raikar :** Canadian Journal of Physics. 92 (2),116-123.
- **B.M.Mastiholi, P.U.Raikar, V.B.Tangod, S.G.Kulkarni and U.S.Raikar :** IOSR Journal of Applied Physics (IOSR-JAP), 6 (6) Ver. III (Nov.-Dec. 2014), 43-47.
- **C.F. Bohren and D.F. Huffman:** Absorption and Scattering of Light by Small Particles. Wiley, New York. 1983.
- **J. Perez-Juste, P.Mulvaney, L.M. Liz-Marzan:** Int. J.Nanotechnol. 4(3),215 (2007).
- **I.-I.S. Lim and C.-J. Zhong. Gold Bull :** 40(1), 59 (2007).
- **G. Zoriniants and W.L. Barnes :** New J. Phys. 10, 105002 (2008).
- **M.Eichelbaum, B.E.Schmidt, H.I.Rademann :** Nanotechnology,18,355702 (2008).
- **B.M. Mastiholi, V.B. Tangod, and U.S. Raikar :** Optik, Int. J. Light Electron Opt.124, 261 (2013).
- **A. Kawski, P. Bojarski, B. Kuklinski :** Chem. Phys. Lett. 463 (2008) 410.
- **A. Kawski, B. Kuklinski, P. Bojarski :** Chem. Phys. 359 (2009) 58.
- **M.Umadevi, N.A.Sridevi, A.S.Sharmila, B.J.M. Rajkumar, B.Mary, P.Vanelle,T. Terme, and O. Khoumeri. J.** Fluoresc. 20, 153 (2010)
- **T. Forster :** Zwischenmolekulare Energiewanderung und Fluoreszenz. Ann. Physik. 2, 55 (1948).
- **J. Zhu, J. Li, A. Wang, Y. Chen, and J. Zhao :** Nanoscale Res. Lett. 5, 1496 (2010).
- **H. Xu and K.S. Suslick :** Adv. Mater. 22, 1078 (2010).

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ARTIFICIAL INTELLIGENCE AND ITS IMPACT ON EDUCATION

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ABSTRACT

In recent years, there has been a growing trend to adopt modern technologies and practices in education to improve the overall educational experience. Learning management systems, gamification, video assisted learning, virtual and augmented reality are just a few examples of how technology has improved student engagement and educational planning. This paper deals with the topic of artificial intelligence and its impacts on education. A classroom feedback system allowed immediate engagement in real-time discussions to answer multiple-choice questions. Although technology has brought man benefits to education, there are concerns about its impact on education institutions. With the rise of online education and the increasing availability of educational resources on the internet, many traditional universities and colleges are worried about the future of their institutions. As a result, many higher education institutions need help keeping pace with rapid technological changes and are looking for ways to be flexible and relevant in the digital age. By now, you've probably heard about ChatGPT, an artificial intelligence chatbot founded by OpenAI that's taking social media by storm.

Key Words : Artificial Intelligence, Education, Technology, ChatGPT, Chatbot.

INTRODUCTION

In the digital age, artificial intelligence has evolved from a mere experimental fantasy to a tangible reality that is revolutionizing various components of our lives. In the education sector, artificial intelligence is playing a fundamental role in engaging students in learning and preparing for the future. But how is artificial intelligence changing the education landscape? And what benefits does it offer to students? From personalized learning to instant feedback and access to advanced resources, artificial intelligence is opening new doors and possibilities in education. And we, at Schiller International University, can (always) embrace these innovative technologies to provide our state of the art educational experience. Artificial intelligence is a wide ranging branch of computer science concerned with building smart machines capable of performing tasks that typically require human intelligence.

Today everyone talking about ChatGPT, but what exactly is it? ChatGPT is a computer program that is designed to understand and respond to human language in a natural and human-like way. Think of it like a virtual assistant or a chatbot that can understand and respond to written or spoken language. It's been trained on a large dataset of text from the internet and it can be used for a variety of tasks such as answering questions, translating languages and even writing creative text. For example, it could be used in education to create an intelligent tutoring system that can understand and respond to student inquiries, or in customer service to help people with their questions. Artificial Intelligence and ChatGPT can conduct academic research through faster processing and research, uncover new discoveries, generate hypotheses, and conduct literature reviews faster than traditional methods. ChatGPT helps researchers in writing papers by giving feedback and suggestions and even creating parts of the text. Additionally, it can be used in natural processes such as unstructured language analysis, text summarization, and sentiment and language translation. However, Artificial Intelligence and ChatGPT can only provide suggestions and support and the final decision and responsibility for the results rests with the researcher with these capabilities.

MEANING AND DEFINITION

Artificial Intelligence refers to computer software that engages in humanlike activities, such as learning, planning and problem-solving. It underpins most of what is going to happen in our new world. Intelligent machines are influencing nearly facet of our lives to help improve efficiencies and augment our human capabilities. A working understanding of Artificial Intelligence is critical for just about every career, because machines can learn and make decisions much quicker and more accurately than humans. There are many types of artificial intelligence, where instead of being programmed what to think, machines can observe, analyses and learn from data and mistakes just like our human brains do. Artificial intelligence makes every process better, faster and more accurate. It has some very crucial applications too such as identifying and predicting fraudulent transactions, faster and accurate credit scoring and automating manually intense data management practices. It improves the existing

process across industries and applications and also helps in developing new solutions to problems that are overwhelming to deal with manually.

According to Minsky and McCarthy(1950), Artificial intelligence means "Any task performed by a machine that would have previously been considered to require human intelligence".

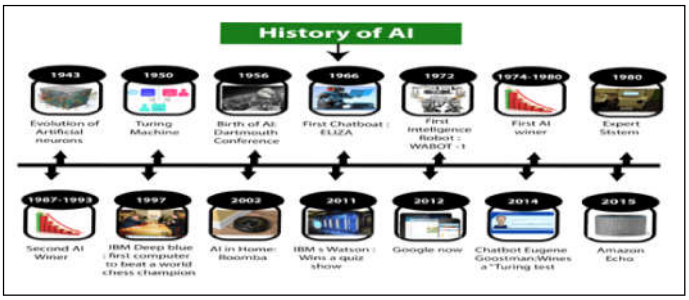
According to a report by McKinsey Global Institute, artificial intelligence is giving us the chance to create an additional $13 trillion in global economic activity by 2030. And can you imagine how this can affect humanity, the people and the students? Our acclaimed professor Jose B. Pinto offered some clues in this regard in the TRIPPERS prod cast.

CONCEPT OF ARTIFICIAL INTELLIGENCE

- **Algorithms :** Algorithms are central to Artificial Intelligence. An algorithm is a process or set of rules to be followed by a computer when doing calculations or solving problems. It's pretty much the equipment of a recipe to bake a cake. Except that the computer follows the exact set of rules every single time, without mistake. It is the set of instructions a computer will follow in order to complete a task. It can be used to enable a machine to learn in other words, solve problems and not just execute instructions.
- **Machine Learning :** Machine learning is one of the most common types of artificial intelligence in development for business purpose today. Machine learning is primarily used to process large amounts of data quickly. These types of artificial intelligence are algorithms that appear to "learn" over time, getting better at what they do the more often they do it. Feed a machine learning algorithm more data and its modelling should improve. Machine learning is useful for putting vast troves of data increasingly captured by connected devices and the internet of things-into a digestible context for humans.
- **Deep Learning :** Deep learning is an even more specific version of machine learning that relies on neural networking to engage in nonlinear reasoning. Deep learning is critical to performing more advanced functions, such as fraud detection. It can do this by analyzing a wide range of factors at once. For example, for self-driving cars to work, several factors must be identified, analyzed and responded to at once. Deep learning algorithms are used to help self-driving cars contextualize information picked up by their sensors, like the distance of other objects, the speed at which they are moving and a prediction of where they will be in 5-10 seconds. All this information is calculated side by side to help a self-driving car make decisions like when to change lanes.

HISTORY OF ARTIFICIAL INTELLIGENCE

Artificial learning is not a new word and not a new technology for researchers. This technology is much older than you would imagine. Even there are the myths of Mechanical men in Ancient Greek and Egyptian Myths. Following are some milestones in the history of artificial intelligence which defines the journey from the artificial intelligence generation to till date development.



MATURATION OF ARTIFICIAL INTELLIGENCE (1943-1952)

- **Year 1943 :** The first work which is now recognized as artificial intelligence was done by Warren McCulloch and Walter Pitts in 1943. They proposed a model of artificial neurons.
- **Year 1949 :** Donald Hebb demonstrated an updating rule for modifying the connection strength between neurons. His rule is now called Hebbian learning.
- **Year 1950 :** The Alan Tuning who was an English mathematician and pioneered Machine learning in 1950. Alan Turing publishes "Computing Machinery and Intelligence" in which he proposed a test. The test can check the machine's ability to exhibit intelligent behaviour equivalent to human intelligence, called a Turning test.

THE BIRTH OF ARTIFICIAL INTELLIGENCE (1952-1956)

- **Year 1955 :** An Allen Newell and Herbert A. Simon created the "first artificial intelligence program "Which was named as "Logic Theorist". This program had proved 38 of 52 Mathematics theorems and find new and more elegant proofs for some theorems.

- **Year 1956 :** The word "Artificial Intelligence" first adopted by American Computer Scientist John McCarthy at the Dartmouth Conference. For the first time, artificial intelligence coined as an academic field. At that time high-level computer languages such as FORTRAN, LISP or COBOL were invented. And the enthusiasm for artificial intelligence was very high at that time.

THE GOLDEN YEARS-EARLY ENTHUSIASM (1956-1974)

- **Year 1966 :** The researchers emphasized developing algorithms which can solve mathematical problems. Joseph Weizenbaum created the first chatbot in 1966, which was named as ELIZA.
- **Year 1972 :** The first intelligent humanoid robot was built in Japan which was named as WABOT-1.

THE FIRST ARTIFICIAL INTELLIGENCE WINTER (1974-1980)

- The duration between years 1974 to 1980 was the first artificial intelligence winter duration. Artificial Intelligence winter refers to the time period where computer scientist dealt with a severe shortage of funding from government for its researchers.
- During Artificial Intelligence winters, an interest of publicity on artificial intelligence was decreased.

A BOOM OF ARTIFICIAL INTELLIGENCE (1980-1987)

- **Year 1980 :** After Artificial Intelligence winter duration, it came back with "Expert System". Expert systems were programmed that emulate the decision-making ability of a human expert.
- In the Year 1980, the first national conference of the American Association of Artificial Intelligence was held at Stanford University.

THE SECOND ARTIFICIAL INTELLIGENCE WINTER (1987-1993)

- The duration between the years 1987 to 1993 was the second Artificial Intelligence Winter duration.
- Again investors and government stopped in funding for artificial intelligence research as due to high cost but not efficient result. The expert system such as XCON was very cost effective.

THE EMERGENCE OF INTELLIGENT AGENTS (1993-2011)

- **Year 1997 :** In the year 1997, IBM Deep Blue beats world chess champion, Gary Kasparov, and became the first computer to beat a world chess champion.
- **Year 2002 :** For the first time, Artificial Intelligence entered the home in the form of Roomba, a vacuum cleaner.
- **Year 2006 :** Artificial Intelligence came in the business world till the year 2006. Companies like Face book, Twitter and Netflix also started using Artificial Intelligence.

DEEP LEARNING, BIG DATA AND ARTIFICIAL GENERAL INTELLIGENCE (2011-PRESESNT)

- **Year 2011 :** In the year 2011, IBM's Watson won Jeopardy, a quiz show, where it had to solve the complex questions as well as riddles. Watson had proved that it could understand natural language and can solve tricky questions quickly.
- **Year 2012 :** Google has launched an Android app feature "Google now", which was able to provide information to the user as a prediction.
- **Year 2014 :** In the year 2014, Chatbot "Eugene Goostman" won a competition in the infamous "Turing Test".
- **Year 2018 :** The "Project Debater" from IBM debated on complex topics with two master debaters and also performed extremely well.
- Google has demonstrated an artificial intelligence program "Duplex" which was a virtual assistant and which had taken hairdresser appointment on call and lady on other side didn't notice that she was talking with the machine.

Now artificial intelligence has developed to a remarkable level. The concept of deep learning, big data and data science are now trending like a boom. Now a day's companies like Google, Face book, IBM and Amazon are working with artificial intelligence and creating amazing devices.

GOALS OF ARTIFICIAL INTELLIGENCE

Artificial Intelligence has many goal, following are the important goals of its.

a. Replicate human intelligence.

b. Solve knowledge intensive tasks.

c. An intelligent connection of perception and action.

d. Building a machine which can perform tasks that requires human intelligence such as:

- Providing a theorem.
- Playing chess.
- Plan some surgical operation.
- Driving a car in traffic.

e. Creating some system which can exhibit intelligent behaviour, learn new things by it, demonstrate, explain and can advise to its user.

SCOPE OF ARTIFICIAL INTELLIGENCE

Artificial Intelligence is a copy of human intelligence by machines. In other words, we can say that it is the only way by which machines demonstrate certain aspects of human intelligence like reasoning, learning and self-correction. There is various scope of artificial intelligence in the modern day scenario; some of them are as follows-

1. Artificial Intelligence in Data Analysis
2. Artificial Intelligence in Cyber Security
3. Artificial Intelligence in Science and Research
4. Artificial Intelligence in Home
5. Artificial Intelligence in Advertising
6. Artificial Intelligence in Marketing
7. Artificial Intelligence in Transport
8. Artificial Intelligence in Agriculture
9. Artificial Intelligence in Healthcare
10. Artificial Intelligence in Customer Relationship Management(CRMs)

Artificial intelligence can act as a catalyst for Students. While artificial intelligence may seem staid or intimidating, its main goal is to greatly facilitate and enhance our lives. When used correctly, artificial intelligence has potential to become a powerful tool in the field of education, enabling more personalized, effective and interactive learning opportunities. It's true that artificial intelligence in education is often surrounded by myths and concerns about replacing teachers or losing the human touch. However, artificial intelligence is not intended to replace educators but is perceived to complement and enhance their capabilities. By automating routine tasks and offering real-time data analysis, artificial intelligence systems help teachers focus on what they do best: provide guidance, emotional support, foster learning and critical thinking in students. But artificial intelligence can be a powerful tool that, when used appropriately, has given a valuable boost in education. Instead of fearing it or embellishing it with myths, we should embrace its potential and how we learn and teach education.

"Technology can help everyone learn in brand new and better ways.
But we should remember that some Artificial Intelligence can also replace old and ineffective teaching methods.
So, we should use it to make new and improved ways of teaching."

- Daniel Schwartz

POSITIVE IMPACT OF ARTIFICIAL INTELLIGENCE ON EDUCATION

Technology has always played an important role in education, but its current use is more prevalent than ever thanks to the increased availability of smart devices and web based curriculum. With the rise of Artificial Intelligence in education, there are many different ways it is being used to help students learn. Here are a few technologies with Artificial Intelligence that are already affecting and will affect education in every way.

• Personalized Learning

One of the biggest benefits of artificial intelligence in education is its ability to personalize learning for each student's individual needs. Artificial intelligence systems can study student's data, for example, the strengths, weaknesses and learning preferences of appropriate academic subjects. It allows students to learn at their own pace and to get extra support in areas that enhance their learning experience.

• Instant Feedback

It provides quick and accurate feedback about students. Its systems can evaluate responses and provide detailed feedback quickly and objectively. This helps students identify areas for improvement and correct mistakes quickly, speeding up their learning time.

• Access to Advanced Educational Resources

This facilitates access to high-quality, up-to-date educational resources. Virtual assistants and chatbots can provide accurate information on any topic, with posts available to access updated information in real time. To create interactive and personalized learning materials, artificial intelligence can learning to enrich the educational experience.

• The Power of Organized Information

It provides the advantage of organized information, allowing students to access knowledge from various sources effortlessly. With artificial intelligence-powered systems, educational platforms can efficiently categorize and present information, allowing students to quickly find relevant resources and enhance their learning experiences. In education, organizing course materials and resources enhances learning outcomes.

• Empowering Students with Special Needs

It offers unparalleled adaptability in catering to the unique needs of students. By leveraging artificial intelligence, individualized learning experiences are tailored to each student's pace, providing invaluable one-on-one attention. Some of the artificial intelligence powered devices that help people with special needs include Microsoft Translator, an artificial intelligence assistive device for deaf learners; lookout by Google a tool for the visually impaired the Speechify Text reader designed for people with dyslexia, ADHD(Attention Deficit Hyperactivity Disorder) and low vision and IFTTT(If This Then That) an automation app.

• Advanced Educational Quality and Academic Standards

It offers a cutting-edge approach to increasing student engagement at all educational levels. Through interactive learning methods that go beyond traditional institutions, it can dynamically change course content, provide instant feedback and measure student engagement. It enriches teaching methods by providing students with a unique educational experience. Students can access resources beyond the classroom and receive real time feedback through its interactions, unlocking new possibilities for learning and growth.

• Enhanced Learning Experience

To make learning more engaging, artificial intelligence technology offers immersive and interactive learning experiences such as virtual reality and augmented reality. In a safe and controlled environment, students can participate in simulations and real-world situations that help them learn and remember things better. For example, kids studying biology can explore the inside of a cell or watch the process of photosynthesis in a virtual lab, making for a more engaging and memorable learning experience.

• Increased Accessibility

Artificial intelligence technology is the equalizer as it removes barriers like socioeconomic status, geographic location and disability. Young learners, regardless of their background or locations can access all educational opportunities thanks to artificial intelligence-powered learning tools. For example, students can study a new language without the help of a tutor with the speed and artificial intelligence-powered language learning apps available.

• Cost Savings

Another benefit of it is cost effectiveness. Yes, technology can reduce the cost of education by automating difficult tasks and facilitating customized instruction for each student. This can reduce the need for tutors and teachers, saving time and money for students and educational institutions.

FEW TECHNIQUES WITH ARTIFICIAL INTELLIGENCE AFFECTING EDUCATION

• Chatbots

Chatbots are one example of artificial intelligence educational apps that students might use soon. There are being increasingly implemented into classrooms where kids use iPads or laptops to chat with bots designed to help them understand specific topics such as math or reading comprehension.

• Virtual Reality (VR)

One recent innovation in education is virtual reality, which is being used for everything from teaching history to helping students with math skills. Virtual Reality is a three-dimensional computer-generated environment that people can explore and interact with. Virtual Reality is a great way to help students feel connected to each other. Increased engagement and deep understanding are just two benefits for students and teachers.

• Learning Management System (LMS)

In this age of technology, one of the most important things is to stay up-to-date with advancements in education. One of these advancements is the use of Learning Management System. A learning management system

provides a centralised, intuitive system for managing all of a school's online activities. These tools can be used for a variety of purposes, but they are often utilised to achieve the assign coursework, communicate with students and parents, track student progress, generate reports on students and performance.

• Robotics

Robotics with artificial intelligence in education has increased over the last few years. It is now being used for both teachers and students to help in education, which can be seen to improve student engagement and safety. With artificial intelligence's current development, robotics in education is inevitable. Robots can be an excellent resource for learning for both students and teachers - a way to explore a topic in-depth without getting bored. Teachers can also use robotics as an instructional tool to teach lessons about current events or even math concepts like fractions. As technology evolves, it will undoubtedly play an essential role in people's lives.

NEGATIVE IMPACT OF ARTIFICIAL INTELLIGENCE ON EDUCATION

However, there are some negative aspects to artificial intelligence in education. A robot may not be as good a teacher as a human. A disadvantage of artificial intelligence in education is that the technology is not always successful in teaching. Artificial intelligence does not feel emotions. Students don't feel cared for by the artificial intelligence when they are being lectured or have a question and don't get a response from the artificial intelligence. This is an emerging field and is being studied in universities where professors are working on developing its technologies that improve our lives. It can also be used to provide adaptive learning, adjusting the pace of instruction based on how the student copy is performing. On the flip side, some people worry about the impact of artificial intelligence where human interaction is diminishing.

• Job Displacement

A big concern about the involvement of artificial intelligence in education is the potential job displacement of teachers and educators. Artificial intelligence-powered tools can replace important tasks performed by teachers, such as grading and providing feedback. This may affect the demand for teachers and lead to job losses.

• Emotional Intelligence Limitations

Lack of emotional intelligence plays a critical role in learning and studying for many individuals. While artificial intelligence technology has its merits, it should partially replace teachers, as they provide more than just information. While artificial intelligence is still in the early stages of developing human interaction and personal connections, it is essential that it plays the valuable role of human teacher.

• Bias and Inequality

Biased artificial intelligence algorithms can lead to inequality and discrimination. For example, artificial intelligence-powered admissions processes may be biased against certain student groups based on their socioeconomic situation or family background. Likewise, artificial intelligence based grading algorithms may be biased against certain types of responses or writing styles.

• Privacy and Security

Artificial Intelligence-powered learning systems collect a wide range of information, including student behaviour, learning progress and personal data. Cyber attacks and data breaches can threaten student safety and privacy if this information is disclosed. Unauthorized access to artificial intelligence systems can cause serious security issues that affect students.

• Dependence on Technology

The use of artificial intelligence-powered learning tools requires access to modern technology, including computers, smart phones and the internet. This allows for greater reliance on technology, potentially diminishing critical thinking and problem-solving skills.

• Maintenance Challenges

Regarding artificial intelligence in education, there are several drawbacks related to management. It is critical for authorities to closely monitor artificial intelligence

systems, as they operate on the basis of limited knowledge and can have unintended consequences if pushed beyond their capabilities. Different artificial intelligence machines may also have incompatible languages, leading to coordination problems and rendering them inoperable at critical times. Despite these challenges, we have explored the broad benefits of artificial intelligence in education and its potential to transform the educational landscape.

CONCLUSION

Artificial Intelligence will benefit parents who are always concerned about their children's social life. Its technology allows them to monitor their child's interactions online more closely than ever before. Schools use software that analyses data points such as how well different students grasp content; then they group the children based on need. It brings the ability to have 24 hours access to teachers and lessons anytime, anywhere. This can be used as an educational tool to guide students towards their goals by providing personalized feedback on homework, quizzes etc., based on artificial intelligence's algorithms. It has the potential to make everyone's life easier through automation as it can perform menial tasks, so you don't need to spend time doing mundane activities like organizing emails or searching for files. The future of education is here. It is a crucial driver of change in education.

It has many benefits as well as limitations also. Every student has equal access regardless of their learning ability or disability; this makes a huge difference as not all children learn at the same pace or have the same skill sets. Students can brighten their future with the help of artificial intelligence. Although it has revolutionized the way we think about education, there are still many challenges and concerns that need to be addressed. It is important that researchers and developers continue to explore the potential of artificial intelligence in education and work to address the challenges and concerns that this type of technology appears to be improving and implementing in the current education system.

REFERENCES

- **Amit Konar (2000) :** Artificial Intelligence and Soft Computing Behavioral and Cognitive Modeling of the Human Brain. Boca Raton, London, New York, Washington, D. C.: CRC Press.
- **David W. Rolston (1988) :** Principles of Artificial Intelligence and Expert Systems Development. Singapore: McGraw-Hill Book Company.
- **George F Luger (2009) :** Artificial Intelligence Structures and Strategies for Complex Problem Solving. South Asia: Dorling Kindersley (India) Pvt. Ltd., licensees of Pearson Education.
- **https:**//moonpreneur.com/blog/ai-negative-and-positive-impact-on-education-industry/
- **https:**//schiller.edu/blog/the-impact-of-artificial-intelligence-on-higher-education-how-it-is-transforming-learning
- **https:**//timesofindia.indiatimes.com/readersblog/newtech/artificial-intelligence-in-education-39512/
- **https:**//www.questionpro.com/blog/ai-in-education/#:~:text=With%20the%20ability%20to%20 analyze, lead%20to%20better%20academic%20outcomes.
- **Krishnamoorthy C.S., S. Rajeev (1996) :** Artificial Intelligence and Expert Systems for Engineers. Boca Raton, New York, London, Tokyo: CRC Press.
- **Parag Kulkarni, Prachi Joshi (2015):** Artificial Intelligence Building Intelligence Systems. Delhi: PHI Learning Private Limited.
- **Saha R.G., Kantesha S., Niha Asif (2021):** Digital Fluency. Mumbai: Himalaya Publishing House.
- **Stuart J. Russell and Peter Norvig (2006) :** Artificial Intelligence A Modern Approach. South Asia: Dorling Kindersley (India) Pvt. Ltd., licensees of Pearson Education.
- **Upinder Singh (2018) :** A Classical Approach to Artificial Intelligence. New Delhi: Random Publications.

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- **Morley, Patricia :** 'Patrick White's A Fringe of Leaves: Journey to Tintagel', World Literature Written in English, 21.2 (1982): 303-15. White, Patrick: A Fringe of Leaves (Harmondsworth, England: Penguin, 1977).
- **Stephen Brock :** A Travelling Colonial Architecture, doctoral diss., The Flinders University of South Australia, Australia, 2003.
- **Sue Rowley :** The Journey's End: Women's Mobility and Confinement? Australian Cultural History, 10, 1991, 69.
- **Terry Goldie :** Fear and Temptation: The Image of the Indigene in Canada, Australia, and New Zealand Literature (McGill-Queen's University Press, London, 1989) p. 210.

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PROGRESSIVE LEARNING AND ITS UTILITY TO ENHANCE STUDENTS' ABILITIES

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Progressive learning is an approach that can be used to improve students' abilities. In different fields of learning, various theories have a significant impact. However, sometimes, the focus of these theories is mainly exam-oriented rather than practical-oriented. In today's world, we require factual knowledge that can be implemented in real-life situations to tackle the challenges that our society faces. Without a strong foundation in various learning domains, we cannot hope to achieve progress in the future. Progressive learning implies that the learned areas should be implemented according to the situation. Students learn in schools and colleges according to their standards with an advanced curriculum, and they should apply the same knowledge in their daily lives without any compromise. This way, they can achieve the expected results that align with our aims and objectives. Progressive learning emphasizes critical thinking over rote memorization and encourages hands-on, self-directed learning to effectively apply knowledge and talent.

The progressive education philosophy emphasizes the development of the whole child; physical, emotional, and intellectual. Learning is based on the individual needs, abilities, and interests of the student. This leads to students being motivated and enthusiastic about learning.

PEDAGOGICAL STARTAGIES

Important pedagogical strategies are as follows -

1. Project-based learning
2. Problem -based learning
3. Inquiry-based learning
4. Service Learning
5. Student-centered learning
6. Self-directed learning

John Dewey was one of the most influential thinkers in the field of education. He believed that education should be a process of active inquiry and problem-solving, rather than passive transmission of facts and rules. He also argued that education should prepare students for life in a democratic society, where they can participate in social change and innovation.Dewey;s educational philosophy was based on four core principles;

1. Utility
2. Interest
3. Experience
4. Integration

Utility : Dewey believed that all learning should be useful and relevant to students' lives. He criticized traditional education for being too abstract and disconnected from reality. Instead, he advocated for a curriculum that reflects the needs and interests of students and society.

For instance, instead of teaching mathematics as a set of formulas and procedures, Dewey suggested teaching it as a tool for solving real-world problems, such as calculating budgets, measuring distances, or designing structures. By making learning more practical and meaningful, Dewey hoped to increase student motivation and engagement.

Interest : Dewey also believed that curriculum content should include the students' interests, as they are the natural sources of curiosity and inquiry. He identified four main interests that students have; conversation, investigation, construction, and creative expression. He recommended that teachers design lessons that involve these activities, as they foster communication, exploration, creativity, and collaboration among students. For example, instead of lecturing history, Dewey proposed that teachers facilitate discussions among students about historical events and their implications for the present. By appealing to the student's interests, Dewey aimed to stimulate their enthusiasm and passion for learning.

Experience : Dewey valued experience over all else, as he considered it the primary source of knowledge and learning. He claimed that students can learn abstract concepts all day, but unless they experience them in action, they may never truly understand them. He advocated or pedagogy with emphasizes experiential learning, which

involves learning by doing, rather than listening or reading. He suggested that teachers create opportunities for students to engage in project-based learning, experimentation, and hands-on activities that allow them to apply their knowledge and skills to real situations. By providing students with rich and varied experiences, Dewey hoped to enhance their comprehension and retention.

Integration : curriculum content should not be separated into discrete subjects or disciplines, but rather integrated into a holistic and coherent whole. He argued that knowledge is not fragmented or isolated, but interconnected and interrelated. He encouraged teachers to show students how concepts from different subjects are related to each other and to the world at large. He proposed that teachers use interdisciplinary approaches, such as thematic units or cross-circular projects, that enable students to explore a topic from multiple perspectives and domains. By promoting the integration of knowledge, Dewey aimed to foster critical thinking and problem-solving skills.

DEWEY'S PRICE OF EDUCATION

Dewey believed that when societies calculate the price of education, they shouldn't only look at the cost of school buildings, teachers' salaries, and other resources. They should also consider the costs of all the hours input by the children. Because the children are the future of our society and progress, their time in class ought not be wasted. It is thus the school's responsibility to be a playground to practice a future we wish to see so that when the kids grow up, they can go and create it. About education,Dewey famously said, it's not a preparation for life, education is life itself.

BENEFITS OF PROGRESSIVE TEACHING

1. **Enhanced communication skills :** When students are encouraged to share their thoughts and opinions in a progressive classroom, they develop better communication skills. They learn how to express themselves clearly and respectfully and learn how to listen to others.
2. **Improved critical thinking skills:** In a progressive classroom, students are encouraged to think critically about the material they are learning, This can help them develop better reasoning skills and analytical abilities that will serve them well throughout their education and into adulthood.
3. **Greater creativity and innovation :** By encouraging students to explore new ideas and ways of thinking, progressive teaching for students helps them develop greater creativity and innovation. This can prepare students for careers requiring these skills, but it can also benefit their everyday lives as they learn to solve problems in new ways.
4. **Greater Engagement :** whether students are learning about math or reading, the progressive training for kids approach can keep them more engaged in the classroom. This is largely due to the dynamic nature of progressive education, which allows students to participate and make decisions that affect their learning, By ensuring that each student has a voice, teachers can help ensure that all students are fully engaged in the classroom.
5. **Improved social skills:** In addition to improved academic skills, students taught using a progressive approach can also develop better social skills. is because progressive education encourages collaboration and communication between students.As a result, students who are taught using this approach learn to work well with others and to express their ideas clearly. These are valuable skills that can be beneficial in the home, school, and eventually in the workplace.
6. **Increased test scores:** students taught using a progressive approach can also improve their test or exam scores. With continued use of this effective teaching method, students will develop better critical thinking skills and learn to evaluate information more accurately before making a decision or solving a problem.

CONCLUSION

Every child is unique and learns differently, so it's crucial to identify the most suitable teaching method based on their aptitude and understanding. More than our teaching, creating a healthy learning environment is vital as it enhances our students' self-confidence and motivates them to learn. In our educational institutions, the most critical aspect is to generate interest among students, and this can be achieved through their active participation and engagement in progressive education.

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WOMEN AND ENTREPRENEURSHIP

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INTRODUCTION

It is not always easy for women to find a job that will be suitable with their family responsibilities and household chores. Thus many women are attracted by the idea of self-employment in enterprises adjoining their house premises with flexible hours which allows them to take care of both home and business. Small-scale enterprises rep-resent an important means of earning income for women in developing countries. They provide employment and income to alleviate poverty conditions.

Entrepreneurship activities for women is clearly within the GAD (Gender and Development) framework. Development cannot be sustained unless the people for whom it is intended are at the centre of development activity. Emphasis on economic development without attention to quality of life have resulted in uneven economic growth but not development of societies. The goal of development is not merely to initiate a process of economic growth but also a process which will improve the lives of people. This implies improvement in the quality of lives of all segments of the population, particularly those groups which have been traditionally marginalized, such as women. Demographic variables are affected directly or indirectly by the status of women within the family and in society, in particular their educational level and economic involvement.

LIMITS ON WOMEN ENTREPRENEURSHIP

Despite the efforts of governmental and non-governmental organizations the number of women entrepreneurs is very small. Several limitations are to be noted. These are -

1. First, enterprises always involve risk-taking. For women, gender stereotyped perception of self, lack of confidence and assertiveness pose barriers to risk-taking. Fear of non-traditional and outside the home activities prevent risky ventures.
2. Second, heavy domestic commitments, and resistance of social structure to change also pose problems. The status of women in a patriarchal social structure makes women dependent on the males in their lives-husband or father-and family resistance is a major disincentive to startup. Also, other family members often make decisions for women.
3. Third, lack of access to education and training for women is another problem.
4. Finally, obtaining finances, even small amounts is an uphill task-for women. Their lack of collateral and funder's perceptions of women's ability are contrary to the experience of organizations-women have been consistently found to be effective in the utilization of credit and subsequent repayment of loan (Hag, 1992). Also, women's savings are found to be twice as much as that of men.

Yet, male bias in training courses and assistance programmes designed for and by men continues and, male imagery and vocabulary, and policies and technology targeted at men continue. Women are more isolated socially, lack previous work experience (a factor in business success), and access to enterprise information and marketing facilities. Because of women's position within the family and structure of power relations, it is important to get husband's/father's support within the GAD framework. Positioning may facilitate ability to call upon a wide range of family support. The 'politics of location' (Rich, 1986) is something that women in India have always understood.

However, merely dumping resources into women's programmes will not solve the problem of women's employment. Many schemes fail to provide women with income as well as opportunities which are sustainable. Income-generating projects often fail because products cannot be sold, or because women do not know the economics of what they are doing. Women need training in functional areas such as finance, marketing, production and managerial skills. This assumes literacy and numeracy skills. Women's involvement in co-operatives requires literacy and education. Illiterate women are shy to join organizations. The need is to focus on women's educational opportunities. To become entrepreneurs in single or cooperative firms, women first need to understand their own capabilities and possibilities.

Women and men employ different strategies which are motivated by their very different circumstances (Downing, 1991). Male-owned enterprises usually grow vertically, whereas women tend to grow by diversifying into other activities. Women are less concerned with making money. They see the enterprise as a means of simultaneously meeting career needs and childcare role (Cromie, 1987). What they earn is totally spent for the benefit of the entire family. Another key motivating force for women to become business owners has been identified as interest in helping oothers (Thompson & Hood, 1991).

GENERAL FACTS

Research indicates that in West most women are a little older when they embark on their economic ventures as compared to the age group of men. This is certainly true of India where reduced duties in the family enables women to focus on their own interest as they mature and gain more respect. Maturity also enables them to cope better with the pressures of a male-dominated society.

Civic status plays an important role for women in Indian society. Once a woman marries, she is seen to be more secure and well protected. As a result She has the liberty to take up a new f venture that originates from her 'real home' which is her husband's or her in-law's home. The husband may be a source of strength (G bb, 1992). In fact, marital status and age run parallel for these business-women. This explains why married and older females have been more successful in setting up centres of self employment.

It has been observed that normally women coming from nu-clear families face less problems and questions to deal with at home. They do not have to answer to their parents-in-law or deal with a large number of members in a joint family. In personal interviews, Anna (1990), found that most women identified a small family as an important factor in conducting their independent businesses. On the other hand, women from joint families have the advantage of leaving their children at home with the grandparents who also help to take care of the household responsibilities. Several studies have shown that women entrepreneurs generally come from joint families because of several advantages such as lower stress as compared to women coming from nuclear families (Singh & Gupta, 1985). Thus both joint and nuclear families contribute in their own way to ame-liorate the situation of women.

Low levels of income and education does not prohibited women to venture out and establish their own enterprises. Moreover, they have gained full sup-port of their family members. Entrepreneurial ventures may be instigated by an increasingly consumer culture in which the need for a second income becomes significant.

Prior education has definitely contributed towards the development of entrepreneurship among the majority of women. Yet the level of education was, for the majority, matriculation (equivalent to grade 10) which gives enough knowledge in reading and writing, and creates a general awareness about entrepreneurship. Moreover, the emphasis on the role of women as potential wives and mothers, discourages higher education which delays the age of marriage. Also, the norms of a patriarchal society get challenged if women go beyond basic levels of education. Furthermore, higher education is more likely to attract women to formal employment in established organizations rather than the informal employment through entrepreneurship.

Studies on women entrepreneurship in the Indian context show that a unique constellation of socio-psychological barriers and oppressive institutional forces blend to form a 'thick veil' obscuring a woman's potential, initiative, talent and enterprise, rendering her status to that of an invisible entity in the economic arena.

PROBLEMS FACED DURING THE INITIAL STAGE.

1. FINANCIAL PROBLEM

The problem ranked first by the women was 'non-availability of finance' followed by 'government regulations', 'bureaucratic attitude', and 'non-availability of raw materials'. While men may face similar problems, the difference lies in the ability to overcome these difficulties because government regulations and bureaucratic snags involve aggressive methods of interaction unfamiliar to women. Men are more able than women to get loans, to cope with hostile government employees and deal with infrastructural issues. In social interactions with people in government institutions, problems vary depending on the nature of individual officers.

2. SAFETY PROBLEM

The sale and marketing of products requires travelling and women entrepreneurs face the problem of unsafe conditions of travelling alone during late hours. Very often they have to rely on the services of their male partners and relatives, or a male employee for marketing their products.

To assume, however, that all the problems faced by women are because of their gender would be unfair. Sometimes women are in an advantageous position because of their gender. Women have large networks and support systems. This helps in their world of work. There is evidence to show that women business owners are able to get better and quick service (Smeltzer & Fann, 1989).

With respect to obtaining finances for their business, our study indicates that 73 per cent of women obtained support to the tune of 75 per cent of necessary funds, and got special capital assistance to the extent of 15 per cent from government financial institutions. About 27 per cent of women faced difficulties in gaining financial support. Several of the women interviewed took second loans from their relatives.

3. PERSONAL PROBLEMS

Women in all societies have to face the problem of managing the multiple demands on their time. In India, family and social responsibilities are particularly demanding so women struggle to fulfil their multiple roles of mother, wife, daughter-in-law and so on. At the same time the world of work demands other roles which can conflict with traditional roles. This situation subjects women to considerable stress.

To sum up it may be stated then, that, a women who is having good experience combined with her knowledge gets success in here endeavour. Her age as well as her marital status also have an important role to play in her success. She is able to obtain sufficient funds from the government to set up a small but lucrative business which would give her greater economic independence and higher social status because of increase in family income.

JOB STRESS - SPECIFICALLY OF WOMEN

Job stress is the stress experienced by the persons because of their role (job) in the organization. They assume a role based on the expectation of the self and others of work place. Those who have the social support of family and friends are able to cope better with stress.

Women are known to be the real builders of our nation. In recent decades there has been an enormous increase in the number of women entering the market.

An increasing number of women are becoming career conscious and professional in their outlook. Earlier women preferred jobs like nursing, medicine, clerical but now the number of women executives is on the increase. The reasons for such a change are:

1. Increase in women's education,
2. Changing socio-cultural values,
3. Increasing awareness and consciousness in women and
4. the rise in economic independence. Women are in a dilemma facing queries regarding self and her rights. Her inner conflict keeps on puzzling her regarding existence in reality and what people talk about (Gracia, June. 2005). Balancing work and family frequently means irregular work hours for women professional leading to stress and various problems related to it (Snel, 2004). The working women, regardless of whether she is married or single face higher stress levels. This is not so much in the work place but at home too. She may feel guilty for leaving her children while she works; this not only increases her stress but also reduces her job satisfaction. Job stress is-the stress experienced by the persons because of their job in the organization. They assume a role based on the expectation of the self and others at work place. Working women compose a large proportion of the workforce today and for them to be working as a manager is really a challenge which leads to stress in their life. Women performing dual role are under stress and several factors at home and at the work place cause it. Conditions that cause stress are ailed stressors.

1. They may be overload of work responsibly,
2. Inadequat authority,
3. non-cooperation from subordinates,
4. hostile boss,
5. poor working conditions and
6. conflicts in the organization. Social support is the physical and emotional comfort given by our family, friends, coworkers and others. Its known that we are part of a community of people who love and care for us and value and think well of us. We all need people we can depend on during both the good times and the bad. Maintaining a healthy social support network is hard work and something that requires ongoing effort over time. People are emotionally supportive when they tell us that they care about us and think well of us. It is important to have at least one close friend (Cohen. S., 2000) also tells us that social support does the best job of

protecting us from the effects of stress when we believe that emotional support is easy to come by and we have at least one person we can confide in.

CONCLUDING REMARKS

Many of the great educationists who have done renowned work in women studies, have stated that many of the women's issues & problems cannot be merely a theoretical and academic exercise but is applied which is to be able to resolve them and recalled historical roots of women's subordination and oppression in the past and. its causes, reproduction and present perpetuation in order to understand the reconstruction of women's history along with theoretical and methodological problems and dreamt to bring a paradigm shift in the discipline of history.

While countering new issues inherited from challenges, Women's Studies became energized, aiming at solving chronic problems.

Empowering the women means creating such an environment in which they can take independent decision for their personal development and the development of society in general. Empowerment is the process by which the women achieve increased control and participation in decision making which in turn helps to achieve equal basis with men in various spheres - political, economical, social, cultural and civil.

The principle of gender equality is enshrined in the Indian Constitution in its Preamble, Fundamental Rights, Fundamental Duties and Directive Principles. The Constitution not only grants equality to women but also empowers the state to strive and adopt measures of positive discrimination in favour of women. We have various laws, policies, plans and programmes aimed at women's advancement in different spheres. However, there exists a wide gap between the goals enunciated in these various forms of development measures and related mechanisms on the one hand and the situational reality of the status of women in India, on the other. This has been analysed extensively in the Report of the Committee on the Status of Women in India, "Towards Equality", 1974 and highlighted in the National Perspective Plan for Women, 1988-2000, the Shramshakti Report, 1988 and the "Platform for Action, Five Years After - An Assessment".

The gender focal points, gender desks, Gender Budgeting Cells will serve as a focal point for advancing data collection on various issues affecting women that require immediate attention and intervention and intervention

Women are able to take risk, and successfully resolve the conflicts which arise in their personal family and entrepreneurial roles. However, they seek motivational support from family and friends, especially males. However, there is a need for formalized organizations for women micro-entrepreneurs (perhaps meeting once a month) which would be a forum of exchanging information and experiences, holding workshops and exhibitions, lobbying governmental agencies such as banks and licensing authorities. Distinctions could be conferred to members in order to recognize and motivate outstanding achievements.

Besides institutional training, 'how-to' manuals for 'Women Entrepreneurs' should be developed. Such manuals should explain the various types of help .available to start and manage an enterprise. This should include addresses and telephone numbers of resource persons and agencies, and contacts for advice on regulations, legal requirements and labour relations, etc. A short course built around this manual may also benefit the entrepreneurs.

Among the several reasons for becoming an entrepreneur, need for economic independence and self-fulfillment is quite strong. Although she herself is keen on her project and how she will implement it, she clearly needs male support both at home in terms of a conducive home environment as well as in her entrepreneurial work. Societal and cultural values impinge upon her work outside her home, making it difficult for her to operate in male spheres of activity. She is obliged to make her work and home environments fit to run smoothly and pleasantly.

As women are highly affected by climate change, environmental degradation, distress migration and displacement in times of natural calamities, policies and programmes for environment, conservation and restoration will compulsorily incorporate gender concerns. An integral part of this discourse will be to enable equitable ownership control and use of natural resources and secure the asset base of marginalised poor women to counter poverty and climate shocks.

Redistribution of gender roles is imperative in a scenario where women are expected and aspire to contribute to the economic development of the country. Efforts will be made to prepare family-friendly policies, which provide for childcare, dependent care and paid leave for women and men both in organized and unorganized sectors to help employees balance work and family roles.

- *Continued on Page No. 34*

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A STUDY ON DISASTER MANAGEMENT AWARENESS AND DISASTER MANAGEMENT PREFERENCES OF STUDENT-TEACHERS AT SECONDARY LEVEL OF HASSAN TALUK

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INTRODUCTION

The present study titled "A Study on Disaster Management Awareness and Disaster Management Preferences of Student-Teachers at secondary level of Hassan Taluk" is a descriptive survey study. In this study the investigator attempts to find out the relationship between Disaster Management Awareness and Disaster Management Preferences of Student-teachers at secondary level of Hassan Taluk.

Education helps the individual in developing all the competencies required to face the challenges of life and manage themselves in any situation. There are number of aspirations in one's life which requires planned training in order to face them successfully. Though these are considered as life skills, there is something beyond which also should be taken within the realms of life skills, they are the skills of managing hazards and disasters.

Natural disasters have been visiting every part of the globe at one time or the other. The world is becoming increasingly vulnerable to natural disasters. From earthquakes to floods and famines, mankind is even more threatened by the forces of nature.

Disasters can strike at any time, at any place. Nearly three million people worldwide may have been killed in past 20 years due to natural disasters such as landslides, earthquakes, floods, snow avalanches, cyclones etc. Ninety per cent of the natural disasters and ninety five percent of the total disaster related deaths worldwide occur in developing countries, in which India has the second largest share. Since human beings are involved to a very large extent, in the happenings of the disasters, care needs to be taken either to avoid disasters or to feel the consequences of disasters,

Education has vital role in this regard. Through Disaster management study the need is to be developed. Disaster Management is more than just response and relief i.e., it assumes a more practical approach. It is a systematic process and, is based on the key management principles of planning, organizing, and leading which includes coordinating and controlling and aims to reduce the negative impact or consequences of adverse events and, disasters cannot always be prevented, but the adverse effects can be minimized.

Further Disaster Management is defined as "Disaster management is the discipline of dealing with and avoiding risks. It involves preparing for a disaster before it happens, disaster response (e.g. emergency evacuation, quarantine (keeping possibly infected person or animal separate), mass decontamination, etc.), as well as supporting, and rebuilding society after natural or human-made disasters have occurred.

"Disaster management can be defined as the organization and management of resources and responsibilities of dealing with all humanitarian aspects of emergencies, in particular preparedness, response and recovery in order lessen the impact of disasters".

Thus the present study intends to develop the need of awareness and preferences among secondary level student teachers.

NEED FOR THE STUDY

Education is a fundamental human right and it is essential to ensure that all are able to realize their potential. A key aim of education is to give all citizens the necessary skills and values to improve their quality of life. To achieve this aim every individual shall continue to work together to improve access to education and to increase the quality of educational facilities in an equitable manner. The physical environment in which learning takes place has a large impact on the outcomes of education.

Schools are the integral part of our social construct. They not only serve as educational institutes but also shape social conduct and beliefs. In a rapidly changing society schools have a particular role to play in preserving what

we hold important as a society and preparing individuals to contribute to development.

Schools also have many resources and are community nodes. Therefore, a school also has responsibility towards its immediate locality, just as the neighbouring community is linked to the school.

In this context teachers play an important role in the school. The responsibility of the children is handed over to the teachers, the moment the child enters the school. It is necessary to strengthen knowledge, skills, attitudes and ability to adapt to a changing physical environment and it is through education and teacher training it is possible to inculcate the awareness, skills and attitude essential for sustainable development.

OBJECTIVES OF THE STUDY

1. To study the extent of Disaster Management Awareness among Student-teachers at Secondary level of Hassan Taluk.
2. To study the Preferences of Student-teachers towards Disaster Management.
3. To study whether there exists any difference in Disaster Management Awareness of Student-teachers in relation to the following variables.
   a. Type of School
   b. Student-teachers of different Faculty
   c. Gender
4. To study whether there exists any difference in Disaster Management Preferences of Student-teachers in relation to the following variables.
   a. Type of school
   b. Student-teachers of different Faculty
   c. Gender
5. To study whether there exists in relationship between Disaster Management Awareness and Disaster Management Preferences of Secondary Level of Student-teachers.

HYPOTHESES OF THE STUDY

1. There is a significant difference in the Disaster Management Awareness of Student-teachers of Government and Private Institutions.
2. There is a significant difference in the Disaster Management Awareness of Student-teachers t of Arts and Science Faculties.
3. There is significant of difference in the Disaster Management Awareness of Boys and Girls Student-teachers of Hassan Taluk.
4. There is a significant difference in the Disaster Management Preferences of Student-teachers of Government and Private Institutions.
5. There is a significant difference in the Disaster Management Preferences of Student-teachers of Arts and Science Faculties.
6. There is a significant difference in the Disaster Management Preferences of Student-teachers of Boys and Girls.
7. There is a significant relationship between the Disaster Management Awareness and Disaster Management Preferences of Secondary level of Student-teachers.

VARIABLES OF THE STUDY

1. Disaster Management Awareness of Student-teachers
2. Disaster Management Preferences of Student-teachers

SUB VARIABLES OF THE STUDY

1. Type of the School
2. Student-teachers of different Faculty
3. Gender

SAMPLE OF THE STUDY

The sample of the study consisted of 400 Student-Teachers at Secondary Level of Hassan Taluk. The sample was selected using stratified random sampling method.

TOOLS USED IN THE STUDY

1. "Disaster Management Awareness test" constructed by the investigator.
2. "Disaster Management Preferences Inventory" constructed by the investigator.

STATISTICAL TECHNIQUES OF THE STUDY

DESCRIPTIVE STATISTICS

Mean, Median, and Standard Deviation were computed for different variables in the study.

INFERENTIAL STATISTICS

1. 't' test was employed to study the significant difference between the Disaster Management Awareness and Disaster Management Preferences.

2. Karl Pearson's product moment co-efficient correlation to study the relationship between the Disaster Management Awareness and Disaster Management Preferences.

ANALYSIS AND INTERPRETATION OF THE DATA

ANALYSIS AND INTERPRETATION OF OBJECTIVE ONE

The first objective of the study was to study the extent of Disaster Management Awareness among Student-Teachers at Secondary Level of Hassan Taluk

The data was analyzed by using descriptive statistics namely frequency distribution Mean, Standard deviation, distribution of scores given in below table.

Table -1 : Distribution of scores on disaster management awareness among student-teachers at secondary level of Hassan Taluk.

Variable	N	Mean	SD
Disaster Management awareness	400	24.19	5.24

CONCLUSION

Most of the students exhibit average level disaster management awareness.

ANALYSIS AND INTERPRETATION OF OBJECTIVE TWO

The second objective of the study was to study the preferences of Student-teachers towards disaster management.

The data was analysed by using descriptive statistics namely frequency distribution mean, standard deviation and Frequency distribution of scores is given in the below table.

Table -2 : Distribution of scores on preferences of Student-teachers towards disaster management at secondary level of Hassan Taluk.

Variable	N	Max.Score	Mean	Median	SD
Disaster Management preferences	400	15	9.43	10	2.67

CONCLUSION

Most of the students exhibit to have above average level preferences towards disaster management.

Analysis and Interpretation of Objective Three (A): Government and Private:

The third objective of the study was to study whether there exists any difference in Disaster Management Awareness of Government and Private and Institutions of Hassan Taluk.

The data was analysed by using descriptive statistics namely frequency distribution mean, standard deviation and Inferential statistics 't' test was used to test the difference in the mean scores of disaster management awareness among government and private institutions of Hassan Taluk.

Table - 3 : Distribution of the scores of Government and Private Institutions Student-teachers on Disaster Management Awareness.

Government					Private				
CI	F	CF	% CF	Smoothed Frequency	CI	F	CF	% CF	Smoothed Frequency
0-10	0	0	0	0	0-10	0	0	0	0
11-15	1	1	1.42	3.81	11-15	16	16	4.85	10.8
16-20	6	7	10	21.9	16-20	75	91	27.58	33.54
21-25	31	38	54.28	50.47	21-25	134	225	68.18	62.62
26-30	23	61	87.14	80.47	26-30	79	304	92.12	86.77
31-35	9	70	100	95.71	31-35	26	330	100	97.38

HYPOTHESIS ONE

H : There is significant difference in the Disaster Management Awareness of Student teacher of Private and Government Institutions.

The null hypothesis formulated.

H0 : There is no significant difference in the Disaster Management Awareness of Government and Private and Institutions of Student-teachers of Hassan Taluk.

't' test was employed to test the null hypothesis with a level of significance at 0.01 level with degrees of freedom 398 and the results are given in the below table.

Table -4 : Number, Mean, Standard Deviation 't' value of the scores of Government and Private and Institutions on Disaster Management Awareness.

Institutions	N	M	SD	't'	Significant Level
Government	70	25.35	4.5	3.3	Significant at 0.01 level
Private	330	23.37	4.8		

From the above table it is observed that the 't value 3.3 is significant at 0.01 level, in the light of this result, it could be interpreted that there is a significant difference between the Government and Private college's student-teachers scores on disaster management awareness.

CONCLUSION

There is significant difference between Government and Private college's Student- teachers in relation to disaster management awareness.

ANALYSIS AND INTERPRETATION OF OBJECTIVE THREE (B) : ARTS AND SCIENCE

The third objective of the study was to study whether there exists any difference in Disaster Management Awareness of Student-teachers of different faculties at Secondary Level of Hassan Taluk.

The data was analysed by using descriptive statistics namely frequency distribution mean, standard deviation and Inferential statistics 't' test was used to test the difference in the mean scores of Disaster Management Awareness of Student-teachers of different faculties at Secondary Institutions of Hassan Taluk.

Table - 5 : Distribution of the scores of Arts and Science Student-teachers on Disaster Management Awareness.

Arts					Science				
CI	F	CF	% CF	Smoothed Frequency	CI	F	CF	% CF	Smoothed Frequency
0-10	0	0	0	0	0-10	0	0	0	0
11-15	10	10	3.25	10	11-15	7	7	7.52	9.31
16-20	72	82	26.71	34.09	16-20	12	19	20.43	29
21-25	140	222	72.31	64.71	21-25	35	54	58.06	55
26-30	70	292	95.11	89.14	26-30	25	79	84.94	81.02
31-35	15	307	100	98.37	31-35	14	93	100	95

HYPOTHESIS TWO

H2 : There is significant of difference in the Disaster Management Awareness of Arts and Science Student-teachers of Hassan Taluk.

The following null hypothesis was formulated.

H0 : There is no significant difference in the Disaster Management Awareness of Arts and Science student-teachers of Hassan Taluk.

't' test was employed to test the null hypothesis with a level of significance at 0.01 level with degrees of freedom 398 and the results are given in the below table.

Table - 6 : Number, Mean, Standard Deviation 't' value of the scores of Arts and Science on Disaster Management Awareness.

Type of Faculties	N	M	SD	't'	Significant Level
Arts	307	24.0	5.0	.58	Significant at 0.01 level
Science	93	23.62	5.70		

From the above table it is observed that the 't' value .58 is significant at 0.01 level, in the light of this result, it could be interpreted that there is no significant difference between the Arts and Science student-teachers scores on Disaster Management Awareness.

Thus the null hypothesis titled "To study whether there exists any difference in disaster management awareness Arts and Science Student-teachers at Secondary Level of Hassan Taluk" was rejected.

CONCLUSION

There is no significant difference between Arts and Science Student-teachers in relation to Disaster Management Awareness.

Analysis and Interpretation of Objective Three (C): Boys and Girls:

The third objective of the study was to study whether there exists any difference in Disaster Management Awareness of Student-teachers of different Gender at Secondary Level of Hassan Taluk.

The data was analysed by using descriptive statistics namely frequency distribution mean, standard deviation and Inferential statistics 't' test was used to test the difference in the mean scores of Disaster Management Awareness among Boys and Girls of Hassan Taluk.

Table - 7 : Distribution of the scores of Boys and Girls Student-teachers on Disaster Management Awareness.

Boys					Girls				
CI	F	CF	% CF	Smoothed Frequency	CI	F	CF	% CF	Smoothed Frequency
0-10	0	0	0	0	0-10	0	0	0	0
11-15	11	11	12.35	12.35	11-15	26	26	8.36	12.79
16-20	11	22	24.71	32.60	16-20	67	93	30	34
21-25	32	54	60.70	54.31	21-25	105	198	63.66	61.23
26-30	15	69	79.52	79.52	26-30	82	280	90.3	84.57
31-35	20	89	100	100	31-35	31	311	100	96.68

HYPOTHESIS THREE

H3 : There is significant of difference in the Disaster Management Awareness of Boys and Girls Student-teachers of Hassan Taluk.

The following null hypothesis was formulated.

H0 : There is no significant of difference in the Disaster Management Awareness of Boys and Girls Student-teachers of Hassan Taluk.

't' test was employed to test the null hypothesis with a level of significance at 0.01 level with degrees of freedom 398 and the results are given in the below table.

Table - 8 : Number, Mean, Standard Deviation 't' value of the scores of Boys and Girls on Disaster Management Awareness.

Gender	N	M	SD	't'	Significant Level
Boys	89	23.65	6.19	.186	Not Significant at 0.01 level
Girls	311	23.43	5.46		

From the above table it is observed that 't' value 186 is significant at 0.01 level, in the light of this result, it could be interpreted that there is no significant difference between the Boys and Girls student-teachers scores on Disaster Management Awareness.

Thus the null hypothesis titled "To study whether there exists any difference in Disaster Management Awareness boys and girls Student-Teachers at Secondary Level of Hassan Taluk" was rejected.

CONCLUSION

There is no significant difference between Boys and Girls Student-Teachers in relation to Disaster Management Awareness.

ANALYSIS AND INTERPRETATION OF OBJECTIVE FOUR (A) : GOVERNMENT AND PRIVATE

The fourth objective of the study was "To study whether there exists any difference in disaster management preferences of Private and Government colleges of Hassan Taluk"

The data was analysed by using descriptive statistics namely frequency distribution mean, standard deviation and Inferential statistics 't' test was used to test the difference in the mean scores of disaster management preferences among government and private institutions of Hassan Taluk.

Table - 9 : Distribution of the scores of Government and Private Institutions Student-teachers on Disaster Management Preferences.

Government					Private				
CI	F	CF	% CF	Smoothed Frequency	CI	F	CF	% CF	Smoothed Frequency
0-2	0	0	0	0	0-2	0	0	0	0
3-5	13	13	18.58	27.62	3-5	21	21	6.37	20.20
6-8	32	45	64.29	36.68	6-8	158	179	54.24	45.05
9-11	9	54	77.14	80.47	9-11	67	246	74.54	76.26
12-14	16	70	100	92.38	12-14	84	330	100	91.51

HYPOTHESIS FOUR

H4 : There is a significant difference in the Disaster Management Preferences of Student-teachers of Government and Private Institutions of Student-teachers of Hassan Taluk.

The following null hypothesis was formulated.

H0 : There is a significant difference in the Disaster Management Preferences of Student-teachers of Government and Private Institutions of Student-teachers of Hassan Taluk.

't' test was employed to test the null hypothesis with a level of significance at 0.01 level with degrees of freedom 398 and the results are given in the below table.

Table - 10 : Number, Mean, Standard Deviation 't' value of the scores of Government and Private and Institutions on Disaster Management Preferences.

Institutions	N	M	SD	't'	Significant Level
Government	70	9.4	2.4	.75	Not Significant at 0.01 level
Private	330	9.7	3.1		

From the above table it is observed that the't' value .75 is not significant at 0.01 level, in the light of this result, it could be interpreted that there is no significant difference in Disaster Management Preferences of Student-teachers of Private and Government Institution.

Thus the null hypothesis titled "There is no significant difference in Disaster Management Preferences of Student-Teachers of Government and Private and Institutions of Mangalore Hassan" was rejected.

CONCLUSION

There is no significant difference between Private and Government Institutions of Disaster Management Preferences.

Analysis and Interpretation of Objective Four (B): Arts and Science:

The fourth objective of the study was to study whether there exists any difference in Disaster Management Preferences of Student-teachers of different faculties.

The data was analysed by using descriptive statistics namely frequency distribution mean, standard deviation and Inferential statistics 't' test was used to test the difference in the mean scores of Disaster Management Preferences among Arts and Science Student-teachers of Hassan Taluk.

Table - 11 : Distribution of the scores of Arts and Science Student-teachers on Disaster Management Preferences.

Arts					Science				
CI	F	CF	% CF	Smoothed Frequency	CI	F	CF	% CF	Smoothed Frequency
0-2	0	0	0	0	0-2	0	0	0	0
3-5	7	7	2.29	21.61	3-5	11	11	11.82	23.29
6-8	185	192	62.54	48.42	6-8	43	54	58.06	45.88
9-11	55	247	80.45	81	9-11	9	63	67.74	75.26
12-14	60	307	100	93.49	12-14	30	93	100	89.24

HYPOTHESIS FIVE

H5 : There is a significant difference in the Disaster Management Preferences of Student-teachers of Arts and Science Student-teachers of Hassan Taluk.

The following null hypothesis was formulated.

H0 : There is no significant difference in the Disaster Management Preferences of Student-teachers of Arts and Science Student-teachers of Hassan Taluk.

't' test was employed to test the null hypothesis with a level of significance at 0.01 level with degrees of freedom 398 and the results are given in the below table.

Table - 12 : Number, Mean, Standard Deviation 't' value of the scores of Arts and Science on Disaster Management Preferences.

Type of Faculties	N	M	SD	't'	Significant Level
Arts	307	9.41	2.31	1.06	Significant at 0.01 level
Science	93	9.06	3.08		

From the above table it is observed that the't' value 1.06 is significant at 0.01 level, in the light of this result, it could be interpreted that there is no significant difference in Disaster Management Preferences of Student-teachers of Arts and Science faculties.

Thus the null hypothesis titled "There is significant difference in Disaster Management Preferences of Student-Teachers of Arts and Science faculties of Hassan Taluk" was accepted.

CONCLUSION

There is a significant difference between Arts and Science Student-teachers in relation to Disaster Management Preferences.

ANALYSIS AND INTERPRETATION OF OBJECTIVE FOUR (C) : BOYS AND GIRLS

The fourth objective of the study was too study whether there exists any difference in disaster management preferences of student-teachers of boys and girls.

The data was analysed by using descriptive statistics namely frequency distribution mean, standard deviation and Inferential statistics 't' test was used to test the difference in the mean scores of Disaster Management Preferences among Boys and Girls Student-teachers of Hassan Taluk.

Table - 13 : Distribution of the scores of Boys and Girls Student-teachers on Disaster Management Preferences.

Boys					Girls				
CI	F	CF	% CF	Smoothed Frequency	CI	F	CF	% CF	Smoothed Frequency
0-2	0	0	0	0	0-2	0	0	0	0
3-5	15	15	16.85	24	3-5	71	71	22.82	30.43
6-8	34	49	55.05	50.55	6-8	142	213	68.48	59.15
9-11	22	71	79.77	78.27	9-11	55	268	86.17	84.88
12-14	18	89	100	93.25	12-14	43	311	100	95.39

HYPOTHESIS SIX

H6 : There is a significant difference in the Disaster Management Preferences of Student-teachers of Boys and Girls Student-teachers of Hassan Taluk.

The following null hypothesis was formulated.

H0 : There is no significant difference in the Disaster Management Preferences of Student-teachers of Boys and Girls Student-teachers of Hassan Taluk.

't' test was employed to test the null hypothesis with a level of significance at 0.01 level with degrees of freedom 398 and the results are given in the below table.

Table - 14 : Number, Mean, Standard Deviation 't' value of the scores of Boys and Girls on Disaster Management Preferences.

Gender	N	M	SD	't'	Significant Level
Boys	89	8.33	2.95	.78	Not Significant at 0.01 level
Girls	311	7.55	2.96		

From the above table it is observed that the't' value .78 is not significant at 0.01 level, in the light of this result, it could be interpreted that there is no significant difference in Disaster Management Preferences of Student-Teachers of Boys and Girls.

Thus the null hypothesis titled "There is significant difference in Disaster Management Preferences of Student-Teachers of Boys and Girls of Hassan Taluk" was rejected.

CONCLUSION

There is no significant difference between Boys and Girls on Disaster Management Preferences.

Analysis and Interpretation of Objective Five

The fifth objective of the study was. to study whether there exists in relationship between the mean score of Disaster Management Awareness and Disaster Management Preferences of Secondary Level of Student-teachers.

The objective was analysed by using inferential statistics namely product moment correlation 'r'.

In order to find out the significance of relationship, the data has been analysed. interpreted using Inferential statistics 'r'

HYPOTHESIS SEVEN

H7 : There is a significant relationship between the Disaster Management Awareness and Disaster Management Preferences of Secondary level of Student-teachers of Hassan Taluk.

The following null hypothesis was formulated.

H0: There is no significant relationship between the Disaster Management Awareness and Disaster Management Preferences of Secondary level of Student-teachers of Hassan Taluk.

Product moment correlation 'r' was employed to test the hypothesis statistically. The value of 'r' was set at 0.01 levels with df 398. The result is given in the below table.

From the above table it can be concluded that the 'r' value between the scores of Disaster Management

Table - 14 : Correlation scores of Disaster Management Awareness and Disaster Management Preferences of Secondary Level of Student-Teachers at Hassan Taluk.

Gender	N	M	SD	'r'	Significant Level
Disaster Management Awareness	400	24.23	5.13	97	Significant at 0.01 level
Disaster Management Preferences	400	9.43	2.56		

Awareness and Disaster Management Preference of Secondary Level of Student-Teachers at Hassan Taluk is 0.97 and is significant at 0.01 level, as the 'r' value 0.97 is greater than the table value 099.

Therefore, the null hypothesis titled "There is a significant relationship between Disaster Management Awareness and Disaster Management Preferences of Student-teachers" was rejected.

Thus the alternative hypothesis titled "There is a significant relationship between the Disaster Management Awareness and Disaster Management Preferences of Secondary Level of Student-teachers" was rejected.

CONCLUSION

There is a significant positive relationship between the Disaster Management Awareness and Disaster Management Preferences of secondary level of student-teachers at Hassan Taluk.

MAJOR FINDINGS OF THE STUDY

1. Majority of students are found to have average level of Disaster Management Awareness.
2. Most of the student-teachers exhibit to have above average level of Disaster Management Preferences.
3. There is a significant difference in the Disaster Management Awareness of Student-teachers of Private and Govt Institutions.
4. There is a no significant difference in the Disaster Management Awareness of Student-teachers of Arts and Science faculties.
5. There is a no significant difference in the Disaster Management Awareness of Boys and Girls Student-teachers.
6. There is a no significant difference in Disaster Management Preferences of Student-teachers of Government and Private Institution.
7. There is a significant difference in the Disaster Management Preferences of Student-teachers of Arts and Science faculties.
8. There is no significant difference in the Disaster Management Preferences of Boys and Girls Student-teachers.
9. There is a significant relationship between Disaster Management Awareness and Disaster Management Preferences among Student-teachers.

EDUCATIONAL IMPLICATIONS

1. Attempts should be made to foster Disaster Management Awareness among Arts and Science Student-Teachers of both Government and Private Colleges.
2. Attempts need to be made towards maximizing the appropriate preferences of students towards Disaster Management Situations.
3. More input needs to be planned in teacher education curriculum to develop Disaster Management Awareness.
4. Knowledge related to Disaster Management Awareness should be interpreted in the syllabus of different subjects developing proper preferential attitude among Student-Teachers.

SUGGESTIONS FOR FURTHER RESEARCH

1. A similar study can be undertaken with large sample.
2. There should be more studies with regard Disaster Management Awareness and Disaster Management Preferences.
3. A similar study can be conducted among the students of higher sample.
4. Separate studies should be conducted taking sampler from boys and girls, arts and science separately.

REFERENCES

- **Aniruddha Uniyal (2010) :** "Disaster management strategy for potential slide zones of Kumarkhera in Narendra Nagar township of Tehri Garhwal district, Uttarakhand, India", Disaster Prevention and Management, Vol. 19 Iss: 3, pp.358-369, Lucknow Emerald Group Publishing Limited, India.
- **Best John W. (2000) :** "Research in Education", New Delhi Prentice hall of India, Private Limited.
- **Emanuele Lettieri, Cristina Masella, Giovanni Radaelli, (2009):** "Disaster management: findings from a systematic review", Disaster Prevention and Management, Vol. 18 Iss: 2, pp. 117-136, Emerald Group Publishing Limited.
- **Engemann K.J. (2006) :** "Computational Intelligence for Risk and Disaster Management", On Page(s): 1340-1346 Conference, IonColl. New Rochelle .
- **Jishnu Subedi (2010) :** "Disaster Informatics: Information Management as a Tool for Effective Disaster Risk Reduction", Tribhuvan University, Nepal.
- **Koul Lokesh (1997) :** "Methodology of Educational Research", New Delhi, Vikas Publishing House Pvt. Ltd.,
- **Satish Modh (2002) :** "Disaster management after returning from an extensive tour of Gujarat Earthquake" Indian journals and also on business ethics entitled Ethical Management, Mumbai.
- **Sunitha Kuppuswamy (2010) :** ICT Approaches in Disaster Management: "Public Awareness, Education and Training", Community Resilience in India, Chennai Anna University, India. ■■

JOSEPH PRIESTLY
(1733-1804)

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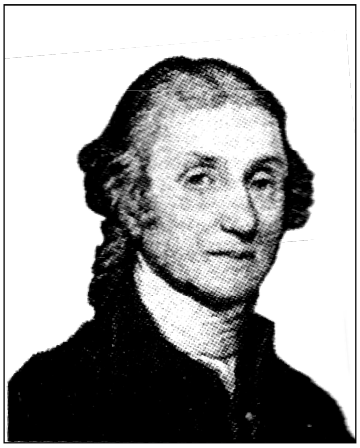
"Our external ideas furnish the materials of all the ideas of which are ever possessed." Stating that all associations were not good ones and the development must not be left to chance, he wrote, "We must learn to cherish and improve good ones, check and root out such as are mischievous and immoral."



Joseph Priestly is more famous for his discovery of oxygen than as a person who had incalculable influence on English education. However, the fact is he was a great educator, who used his practical experiences of teaching to support the several educational treatises that he produced. In effect, his influence on English education was deep.

Born in 1733 in Yorkshire, England, Priestly lived at a time when England, which was till then dominated and governed by the aristocracy, landed gentry and the Church, was facing a sort of social, economic, intellectual and cultural change. With the ushering in of urbanization and industrialization, the middle classes comprising businessmen and industrialists began to challenge the domination of the ruling classes. The most assertive of this group were the Unitarians, a small group that attracted many leading industrialists and progressive intellectuals. According to Unitatians, humanity and its environment was best understood by reason, experience and experiment, but they fused religion with philosophy and science in the firm belief that science was a way of understanding the rationality of God's creation and that only good could result from open and free enquity. This group backed the American Revolution and the French Revolution. Priestly was one of the main pillars of the Unitarians.

The Unitarians believed that education at two of the leading universities orf England, Oxford and Cambridge had become ossified with comparative inactivity and increasing reliance on the ruling classes. Priestly had his education at one of the dissenting academies, Daventry Academy, which offered some of the best higher education of the day. The public and grammar schools that took care of the educational needs of the upper classes of the society were generally at a low ebb at that time, thanks to the competition from private schools that offered modern curriculum, sometimes including mathematical and vocational subjects.

While the established universities of England were relegated, because of their curriculum that was anachronistic, the academies set up by the Unitarians hogged the limelight because these institutions had a curriculum that was more modern and led the students to examine all sides of every issue. Priestly, who became one of the chief driving forces behind these academies helped to expand the curriculum of the most liberal of them and developed an outsatnding education that foreshadowed developments in the university education of the future. Priestly's efforts were not confined to higher education. He immensely influenced schooling too. In fact, he ran a coeducational school from 1755 to 1761 and successfully introduced lessons in both practical science and modern history. That he was one of the most effective teachers of history is evident from the fact that he prepared the much published Chart of Biography that contributed to his election as a Fellow of the Royal Society., He was also keen on seeing that his students wrote plain English correctly and fluently. To facilitate this, he published Rudiments of English Grammar in 1761. That Priestly was an effective teacher is vouched by the fact that he was invited to become a tutor in languages at the Warrignton Academy, the flagship of dissenting education.

At the Warrington Academy, Priestly developed an interest in experimental philosophy and wrote a much sought after book Introduction to Electricity for Beginners. In tune with the dissenting educationists of his time, he took a fancy for John Locke, and was tremendously influenced by David Hartley's Observation in Man. In

this work, Hartley propounded that all complex or intellectual ideas arise from simple ones, which in turn arise from the impressions made by external objects upon the several parts of our bodies. These sensations, when often repeated, according to Hartley, give rise to ideas and a series of sensations. These sensations, if associated with each other sufficiently, have such a power over the corresponding ideas that any one of the sensations when impressed alone shall be able to excite in the mind the ideas of the rest.

Priestly believed that all people should receive the same education. Stating that women were not inferior in menrtal capacity, he advocated a far higher level of educationfor women,as development is dependent on education. He further said that women who were well educated intellectually and morally would be well fitted to educate and influence others and to obtain an independent living if need be. Though he championed the cause of women education, he had no firm ideas on the education of the poor. Though he was concerned about their welfare he was worried about the Sate control over education and thus of uniformity of thought and belief, instead of variety of freedom.

To inculcate clear knowledge to students, Priestly asked the teachers to illustrate and exemplify their ideas and to welcome student's questions and observations. He emphasized the use of visual aids such as models, and any ways that would help students to understand the full significance of their work. In science, he stressed on experiments as the key to understanding and clear thinking and emphasized that all studies should be adapted to the age and capacity of the learner.

Priestly once asked his students to help obtain "The flourishing state of science, arts, manufactures and commerce; the extinction of wars; the abolishing of all useless distinctions. In short, to make government as beneficial as possible. Let the Liberal Youth be everywhere encouraged to study the nature of government and attend to everything that makes nations secure and happy."

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- *From Continued on Page No. 24*

REFERENCES

- **Anna V. 1990 :** `Socio-economic basis of women entrepreneurship'. SEDME, 17 (1), 17-47.
- **Boserup E. 1970 :** Women's role in economic development. New York; St. Martin's.
- **Cromie M. 1987 :** 'Motivations of aspiring male and female entrepreneurs'. Journal of Occupational Behaviour, 8 (3), 251-61.
- **David N. 1992 :** Development of micro enterprises by women. In S. Beaumont, K. Singh, & K. Rarnachandran (Eds), Development of micro enterprises by women, pp. 70-79. New Delhi: British Council and Indian Institute of Management, ahmedabad.
- **Downing J.1991 :** 'Gender and the growth of enterprises'. Small Enterprise Development, 2 (1), 4-12.
- **Nelson G.W. 1987 :** 'Information needs of women entrepreneurs'. Journal of Small Business Management, 25 (1), 38-44.
- **Premchander S. 1992 :** 'Micro enterprises for rural women'. In S. Beaumont, K. Singh & K. Ramachandran (Eds), Development of micro enterprises by women, pp. 126.-36. New Delhi: British Council and Indian Institute of Management, Ahmedabad.
- **Rich A. 1986 :** 'Notes toward a politics of location.' In A. Rich (Ed.), Blood, bread and poetry. Selected prose 1979-1985, pp. 210-31. New York: W.W. Norton & Com-pany.
- **Scott C. E. 1986 :** 'Why more women are becoming entrepreneurs'. Journal of Small Business Management, 24 (4), 37-44.

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