

6. New Education Policy 2020 & Linguistic Current Situation

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Abstract

Language learning is the basic core of education. Because language is the medium of education. Providing primary education to children (at least to children) through mother tongue is a universally accepted principle. Many studies around the world have now proved that a child can absorb any knowledge, the theoretical part of it with proper understanding, more easily and effectively in his mother tongue than in a foreign language. But in the country of multilingual and multicultural India, where there are 22 official national languages as per the Constitution (as per the Eighth Schedule), it was not possible to decide on a single official national language for the entire country. Again, the English language spread all over the country due to the British rule for one and a half hundred years and the progress made by modern knowledge and science through it, could not be ignored. Hence, it is evident that the framers of the country settled the language question satisfactorily by deciding that English should be the contact language for the country along with Hindi, for the sake of national unity. But as it is important for the knowledge of the students to be imparted through the mother tongue, provision was made in Article 350A of the Constitution.

Introduction

In 1968, the first National Education Policy was implemented in India based on the recommendations of the Kothari Commission. In it, the trilingual language policy was first adopted keeping in mind the national integration, linguistic identity and multilingualism of the country. Simply put, a Hindi-speaking state had English, Hindi and a modern Indian language (which of course would not have been Sanskrit, possibly a southern state Dravidian language) and a non-Hindi-speaking state had English, Hindi and a state language. With the exception of Tamil Nadu, all states accepted the trilingual policy, but the Hindi-speaking states systematically defied the policy by adopting Sanskrit as their third language instead of the modern Indian language. Tamil Nadu clearly rejected the trilingual policy and adopted a bilingual policy of




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Tamil and English for its state. Because he was strongly opposed to the imposition of Hindi language through the trilingual policy. The central government did nothing before that. That is, although the National Education Policy had a trilingual principle, Tamil Nadu openly rejected it. While the Hindi speaking states bypassed it at their own convenience and adopted Sanskrit as their third language instead of the modern Indian language. But our Maharashtra, however, adopted this trilingual policy precisely and I believe that it was and is right. In the Second Education Policy of 1986, the trilingual policy was retained without any change. And in the third policy of the new 2020, it is still there, but there is a subtle change in it, it is insistence.

Key Provisions of Language in the New Education Policy

In the new National Education Policy under the heading 'Multilingualism and Language Compulsion' the language policy has been elaborated in sufficient detail in paragraphs 4.11 to 4.22. Let us first look briefly at its treatment. The major recommendations of this language policy are as follows-

- a. Trilingual policy of Kothari Commission has been retained in the new policy as well. But because of the strong reaction in Tamil Nadu, there is no separate clear mention of Hindi, but it has already been adopted by every state - with the exception of Tamil Nadu. Accordingly, the trilingual policy of the regional language of the state, Hindi and English, has been adopted more or less all over the country. Therefore, the trilingual language formula has been maintained in the new policy to preserve multilingual diversity and for national integration.
- b. The new policy emphasizes that the medium of education should be the mother tongue i.e. the state language at least up to the fifth standard and preferably up to the eighth standard. Beyond that, if possible, the local language should be taught there.
- c. Textbooks of all subjects including Science-Mathematics shall be made available to students in mother tongue/state language for easy understanding. Also teachers will be encouraged to use bilingual methods with bilingual teaching-learning materials. Thus students will be able to think and speak in both mother tongue and English.
- d. After developing the writing and reading skills of the students in the initial two years i.e. 1st and 2nd, writing and reading of other languages will be taught from 3rd standard onwards. A large number of teachers of all languages will be provided for this. Provision will be made for recruitment of teachers in large numbers from each other's

- states to implement the trilingual formula. Also, various states will enter into bilateral agreements with each other to implement the trilingual formula across the country.
- c. Paragraph 9.3(a) recommends that there should be one large multidisciplinary university and college in or near every district, whose medium of instruction or programs shall be the vernacular Indian language.
 - f. Sanskrit language will be available in all levels of school education, as well as an important and optional option in the Trilingual formula of higher education.
 - g. Classical Indian languages, Pali, Persian and Prakrit along with Sanskrit and their materials will be available to the students through online modules in an experiential and innovative way.
 - h. Foreign language at secondary level viz. Opportunities will also be provided for Korean, Thai, French, Spanish, Portuguese and Russian.
 - i. Indian Sign Language - Indian Sign Language will be standardized across the country.

Conclusion

A cursory glance at the language policy adopted by the Centre of Kasturirangan Samiti may seem appropriate for a multilingual and multicultural country like India. To a large extent this is true, but at first sight one cannot help but feel that the burden of learning several languages is being placed on students to preserve multilingualism. The presentation and acceptability of any policy depends on the details. Because 'Devil lies in details' now let us go into details and treat the new language policy on the basis of two criteria which are 1) suitable for students and national interest and 2) unreasonable and impractical as putting extra burden on students. A detailed interpretation of the same is necessary for clarity and direction and recommendations to the Government of Maharashtra for implementation.

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ON SIMPLE BOUNDS FOR INVERSE HYPERBOLIC SINE AND INVERSE HYPERBOLIC TANGENT FUNCTIONS

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Abstract

We obtain simple algebraic bounds of inverse hyperbolic sine and inverse hyperbolic tangent functions i.e., $\sinh^{-1} x$ and $\tanh^{-1} x$. The inequalities are obtained on the entire domains of these functions. From our results, we obtain tighter bounds for the same functions. The Wilker and Huygens type inequalities involving inverse hyperbolic functions can also be easily derived from our main results.

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1 Introduction

The bounds for inverse hyperbolic sine and inverse hyperbolic tangent functions can be useful in applied mathematics where these functions occur frequently. The inequalities

$$(1.1) \quad \frac{1}{\sqrt{1+x^2}} < \frac{\sinh^{-1} x}{x}, \quad x > 0$$

and

$$(1.2) \quad \frac{\tanh^{-1} x}{x} < \frac{1}{1-x^2}, \quad x \in (0, 1)$$

can be proved easily by Mean Value Theorem (MVT) [5]. For the trigonometric inequalities analogous to (1.1) and (1.2) we refer to [3]. In 2008, Zhu [16] established for $0 \leq x \leq r$ and $r > 0$ that

$$(1.3) \quad \frac{3}{2 + \sqrt{1+x^2}} \leq \frac{\sinh^{-1} x}{x} \leq \frac{b+1}{b + \sqrt{1+x^2}},$$

where $b = \frac{\sqrt{15} \sinh^{-1} x}{x}$. The inequality (1.3) is Shater-link type inequality for hyperbolic sine. In the same year, Zhu [17] presented another simple proof of Shafer's inequality [12, 13, 14]

$$(1.4) \quad \frac{\tanh^{-1} x}{x} < \frac{8}{3 + \sqrt{25 - \frac{16}{3} x^2}}; \quad 0 < x < \sqrt{15}/4.$$

Later, it is pointed out in [4] that a simple concise proof of inequality (1.4) in [17] contains a small mistake and other simple proofs of (1.4) are provided in [4]. The classic inequalities (1.3) (the right one) and (1.4) are not true on the entire domains of the respective functions i.e., on the domains of $\sinh^{-1} x$ and $\tanh^{-1} x$ as they are respectively defined on $(0, \infty)$ and $(0, 1)$. In this paper, we obtain algebraic bounds for these functions on their entire domains. New inequalities are simple and comparable with (1.3) and (1.4) as well as they give Wilker [15] and Huygens [10] type inequalities for inverse hyperbolic functions.

Before proceeding further, we recall the following two Lemmas regarding the monotonicity of functions. These Lemmas will be used to prove our main results in the next section.

Lemma 1.1 ([1, p.16]) Let $f, g: [m, n] \rightarrow \mathbb{R}$ be two continuous functions which are differentiable on (m, n) and $g' \neq 0$ in (m, n) . If f/g is increasing (or decreasing) on (m, n) , then the functions $\frac{f(x)-f(m)}{g(x)-g(m)}$ and $\frac{f(x)-f(n)}{g(x)-g(n)}$ are also increasing (or decreasing) on (m, n) . If f/g is strictly monotone, then the monotonicity in the conclusion is also strict.

Lemma 1.2 ([9]) Let $A(x) = \sum_{k=0}^{\infty} a_k x^k$ and $B(x) = \sum_{k=0}^{\infty} b_k x^k$ be convergent for $|x| < R$, where a_k and b_k are real numbers for $k = 0, 1, 2, \dots$ such that $b_k > 0$. If the sequence a_k/b_k is strictly increasing (or decreasing), then the function $A(x)/B(x)$ is also strictly increasing (or decreasing) on $(0, R)$.

2 Main results

In our first result, we extend inequality (1.1) to the right, the first result is stated as

Theorem 2.1 The best possible constants α and β such that

$$(2.1) \quad \left(\frac{1}{1+x^2} \right)^{\alpha} < \frac{\sinh^{-1} x}{x} < \left(\frac{1}{1+x^2} \right)^{\beta}, \quad x \in (0, \infty)$$

are $1/2$ and $1/6$ respectively.

Proof. Let

$$f(x) = \frac{\ln \left(\frac{x}{\sinh^{-1} x} \right)}{\ln(1+x^2)}, \quad x \in (0, \infty)$$

and $\sinh^{-1} x = t$. Then $x = \sinh t$ for $t \in (0, \infty)$ and $f(x) = F(t)$ where

$$F(t) = \frac{\ln \left(\frac{\sinh t}{t} \right)}{\ln(1 + \sinh^2 t)} := \frac{F_1(t)}{F_2(t)}.$$

Differentiation yields

$$\frac{F'_1(t)}{F_2(t)} = \frac{1 + \sinh^2 t}{2 \sinh t \cosh t} \cdot \frac{t \cosh t - \sinh t}{t \sinh t}$$

$$\begin{aligned}
&= \frac{\cosh t (t \cosh t - \sinh t)}{2t \sinh^2 t} = \frac{1}{2} \cdot \frac{t(1 + \cosh 2t) - \sinh 2t}{t(\cosh 2t - 1)} \\
&= \frac{1}{2} \cdot \frac{t \cosh 2t - \sinh 2t + t}{t \cosh 2t - t} \\
&= \frac{1}{2} \cdot \frac{\sum_{k=0}^{\infty} \frac{2^{2k} t^{2k}}{(2k)!} - \sum_{k=0}^{\infty} \frac{2^{2k+1} t^{2k+1}}{(2k+1)!} + t}{\sum_{k=0}^{\infty} \frac{2^{2k} t^{2k}}{(2k)!} - t} \\
&= \frac{1}{2} \cdot \frac{\sum_{k=1}^{\infty} \frac{2^{2k} t^{2k}}{(2k)!} (1 - \frac{2}{2k+1}) + t^{2+1}}{\sum_{k=1}^{\infty} \frac{2^{2k} t^{2k}}{(2k)!} t^{2k+1}} \\
&= \frac{1}{2} \cdot \frac{\sum_{k=1}^{\infty} a_k t^{2k+1}}{\sum_{k=1}^{\infty} b_k t^{2k+1}} = \frac{1}{2} \frac{A(t)}{B(t)}.
\end{aligned}$$

Therefore,

$$\frac{a_k}{b_k} = 1 - \frac{2}{2k+1}, \quad k \in \mathbb{N}.$$

Clearly, $\{a_k/b_k\}_{k=1}^{\infty}$ is a strictly increasing sequence. By Lemma 1.2, F'_1/F'_2 is strictly increasing on $(0, \infty)$. By Lemma 1.1, $F(t)$ and hence $f(x)$ is a strictly increasing function on $(0, \infty)$. So

$$f(0+) < f(x) < f(\infty-).$$

By l'Hôpital's rule, we find the limits $f(0+) = 1/6$ and $f(\infty-) = 1/2$ which give double inequality (2.1).

Next, we improve left inequality of (2.1) or inequality (1.1).

Theorem 2.2 For $x > 0$, the constant $\alpha = 1/3$ such that

$$(2.2) \quad \frac{1}{\sqrt{1+4x^2}} < \frac{\sinh^{-1} x}{x}$$

is the best possible.

Proof. Let

$$g(x) = \frac{\left(\frac{x}{\sinh x}\right)^2 - 1}{x^2}, \quad x > 0$$

and $\sinh^{-1} x = t$. Then $x = \sinh t$ for $t \in (0, \infty)$ and $g(x) = G(t)$ where

$$\begin{aligned}
G(t) &= \frac{\left(\frac{\sinh t}{t}\right)^2 - 1}{\sinh^2 t} = \frac{\sinh^2 t - t^2}{t^2 \sinh^2 t} \\
&= \frac{\cosh 2t - 2t^2 - 1}{t^2 \cosh 2t - t^2} \\
&= \frac{\sum_{k=1}^{\infty} \frac{2^{2k} t^{2k}}{(2k)!} - 2t^2}{\sum_{k=0}^{\infty} \frac{2^{2k} t^{2k}}{(2k)!} - t^2} = \frac{\sum_{k=2}^{\infty} \frac{2^{2k} t^{2k}}{(2k)!}}{\sum_{k=2}^{\infty} \frac{2^{2k-2} t^{2k}}{(2k-2)!} t^{2k}} \\
&= \frac{\sum_{k=2}^{\infty} a_k t^{2k}}{\sum_{k=2}^{\infty} b_k t^{2k}} = \frac{A(t)}{B(t)}.
\end{aligned}$$

Therefore,

$$\frac{a_k}{b_k} = \frac{2}{k(2k-1)}, \quad k \geq 2.$$

Thus $\{a_k/b_k\}_{k=2}^{\infty}$ is a strictly decreasing sequence. By Lemma 1.2, $G(t)$ and hence $g(x)$ is decreasing on $(0, \infty)$. So $f(0+) > f(x)$. As $f(0+) = 1/3$, we get the required result.

Similarly, we extend and improve the inequality (1.2) in the following theorems.

Theorem 2.3. Let $x \in (0, 1)$ and $n \in \mathbb{N}$. The following inequalities hold.

$$(2.3) \quad \frac{1}{1-x^2} < \frac{\tanh^n x}{1-x^n} < \frac{1}{1-x^{2n}}.$$

Proof. Let

$$h(x) = \frac{\left(\frac{1-x}{1+x}\right)^n - 1}{x^n}, \quad x \in (0, 1).$$

We put $\tanh^{-1} x = t$ which gives $x = \tanh t$ for $t \in (0, \infty)$ and $h(x) = H(t)$ where

$$\begin{aligned} H(t) &= \frac{\left(\frac{1-\tanh t}{1+\tanh t}\right)^n - 1}{\tanh^n t} = \frac{\cosh t \cosh^n t - t \cosh^{n+1} t}{t \sinh^n t} \\ &= \frac{\cosh 2t - t \cosh 2^{n+1} t}{t \cosh 2t - t} \\ &= \frac{\sum_{k=0}^{\infty} \frac{(2t)^{2k}}{(2k)!} - t \sum_{k=0}^{\infty} \frac{(2t)^{2k}}{(2k)!} t^{2k} - t}{t \sum_{k=0}^{\infty} \frac{(2t)^{2k}}{(2k)!} t^{2k} - t} \\ &= \frac{\sum_{k=1}^{\infty} \frac{(2t)^{2k}}{(2k)!} (1 - t^{2k})}{\sum_{k=1}^{\infty} \frac{(2t)^{2k}}{(2k)!} t^{2k}} \\ &= \frac{\sum_{k=1}^{\infty} \frac{(2t)^{2k}}{(2k)!} \left(\frac{1}{2k} - 1\right) t^{2k-1}}{\sum_{k=1}^{\infty} \frac{(2t)^{2k}}{(2k)!} t^{2k-1}} \\ &= \frac{\sum_{k=1}^{\infty} \frac{(2t)^{2k}}{(2k)!} t^{2k-1}}{\sum_{k=1}^{\infty} \frac{(2t)^{2k}}{(2k)!} t^{2k-1}} = \frac{1}{h(t)}. \end{aligned}$$

Note

$$\frac{1}{m} < \frac{1}{2n-1} < 1, \quad 0 < x < 1.$$

Since a sequence $\{h_n\}_{n=1}^{\infty}$ is strictly decreasing we get by Lemma 1.2 that a function $H(t)$ is strictly decreasing on $(0, \infty)$ or that $h(x)$ is strictly decreasing on $(0, 1)$. Hence

$$h(0+) > h(x) > h(1-).$$

We finish the proof by noting that the limits $h(0+) = -1/3$ and $h(1-) = -1$ can be easily found by l'Hôpital's rule.

Theorem 2.4. For $x \in (0, 1)$, the inequality

$$(2.4) \quad \frac{\tanh^n x}{x} < \left(\frac{1}{1-x^2}\right)^{1/2}$$

is true.

Proof. Let

$$p(x) = \frac{\left(\frac{1-x}{1+x}\right)^n}{\left(\frac{1-x}{1+x}\right)^n - 1}, \quad x \in (0, 1).$$

Using the substitution $\tanh^{-1} x = t$

$$p(x) = \frac{1 - \tanh^n t}{1 - \tanh^{2n} t}.$$

for $t \in (0, \infty)$ we get $p(x) = P(t)$ where

$$P(t) = \frac{1 - \tanh^n t}{1 - \tanh^{2n} t}.$$

$$= \frac{\ln \left(\frac{1+\cosh t}{2} \right)}{2 \ln \cosh t} = \frac{1}{2} \cdot \frac{P_1(t)}{P_2(t)}$$

After differentiating we have

$$\begin{aligned} \frac{P_1'(t)}{P_2'(t)} &= \frac{\tanh t - t \operatorname{sech}^2 t}{t \tanh^2 t} = \frac{\sinh 2t - 2t}{2t \sinh^2 t} \\ &= \frac{\sinh 2t - 2t}{t \cosh 2t - t} = \frac{\sum_{k=0}^{\infty} \frac{2^{2k+1}}{(2k+1)!} t^{2k+1} - 2t}{\sum_{k=0}^{\infty} \frac{2^k}{(2k)!} t^{2k+1} - t} \\ &= \frac{\sum_{k=1}^{\infty} \frac{2^{2k+1}}{(2k+1)!} t^{2k+1}}{\sum_{k=1}^{\infty} \frac{2^k}{(2k)!} t^{2k+1}} = \frac{\sum_{k=1}^{\infty} I_k t^{2k+1}}{\sum_{k=1}^{\infty} m_k t^{2k+1}} =: \frac{I(t)}{M(t)}. \end{aligned}$$

From this we obtain

$$\frac{I_k}{m_k} = \frac{2}{2k+1}, \quad k \in \mathbb{N}$$

and easily see that the sequence $\{I_k/m_k\}_{k=1}^{\infty}$ is strictly decreasing. By subsequent use of **Lemmas 1.1** and **1.2**, we conclude that the function $P(t)$ is strictly decreasing on $(0, \infty)$ or equivalently the function $p(x)$ is strictly decreasing on $(0, 1)$. Hence $p(0+) = 1/3 > p(x)$. This completes the proof.

Now we state and prove one lemma for establishing asymptotically better lower bound for $(\sinh^{-1} x)/x$.

Lemma 2.1 *The inequalities*

$$\left(\frac{\sinh x}{x} \right)^2 < \cosh x, \quad x \in (0, \delta)$$

and

$$\left(\frac{\sinh x}{x} \right)^2 > \cosh x, \quad x \in (\delta, \infty)$$

hold for $\delta \approx 2.675$.

Proof. Let

$$t(x) = \sinh^2 x - x^2 \cosh x, \quad x \in (0, \infty).$$

Using known series expansions we write

$$\begin{aligned} t(x) &= \frac{1}{2} (\cosh 2x - 1) - x^2 \cosh x \\ &= -\frac{1}{2} + \sum_{k=0}^{\infty} \frac{2^{2k+1}}{(2k)!} x^{2k} - \sum_{k=0}^{\infty} \frac{x^{2k+2}}{(2k)!} \\ &= \sum_{k=2}^{\infty} \frac{1}{(2k-2)!} \left[\frac{2^{2k-1}}{2k(2k-1)} - 1 \right] x^{2k} \\ &= -\frac{x^4}{6} + \frac{x^6}{360} + \frac{x^8}{560} + \frac{211x^{10}}{1814400} + \dots \end{aligned}$$

Clearly, $t(x) > 0$ for all $x \geq 3$. From the nature of curves $\left(\frac{\sinh x}{x} \right)^2$ and $\cosh x$, they can intersect each other in at most one point. So the equation $t(x) = 0$ has a unique solution that lies in $(0, 3)$ and can be confirmed by using bisection method[2] as follows.

Let $y_1 = \sinh x = (\cosh x) - 1$ and $y_2 = x^2 \cosh x$. Then with the help of tables in [6]

have

Table 2.1

$x(\text{rad.})$	y_1	y_2	$t(x) = y_1 - y_2$
1.0	1.3811	1.54308	-0.16198 < 0
3.0	100.3578	90.60894	+9.74886 > 0

From Table 2.1, the root of $t(x)$ lies between 1 and 3.

Table 2.2

$x(\text{rad.})$	y_1	y_2	$t(x) = y_1 - y_2$
1.0	1.3811	1.54308	-0.16198 < 0
1.5	4.03383	5.29292	-1.25909 < 0
2.0	13.1541	15.0488	-1.8947 < 0
2.5	36.60495	38.32681	-1.72186 < 0
3.0	100.3578	90.60894	+9.74886 > 0

From Table 2.2, the root of $t(x)$ lies between 2.5 and 3.0.

Table 2.3

$x(\text{rad.})$	y_1	y_2	$t(x) = y_1 - y_2$
2.5	36.60495	38.32681	-1.72186 < 0
2.6	44.81945	45.75851	-0.93906 < 0
2.7	54.85275	54.4816	+0.37115 > 0
2.8	67.1075	64.7014	+2.4061 > 0
2.9	82.07565	76.65362	+5.42203 > 0
3.0	100.3578	90.60894	+9.74886 > 0

From Table 2.3, the root of $t(x)$ lies between 2.6 and 2.7.

Table 2.4

$x(\text{rad.})$	y_1	y_2	$t(x) = y_1 - y_2$
2.60	44.81945	45.75851	-0.93906 < 0
2.61	45.7349	46.56949	-0.83459 < 0
2.62	46.66885	47.3936	-0.72475 < 0
2.63	47.62165	48.23099	-0.60934 < 0
2.64	48.59375	49.08188	-0.48813 < 0
2.65	49.58545	49.94641	-0.36096 < 0
2.66	50.5972	50.82488	-0.22768 < 0
2.67	51.6294	51.71738	-0.08798 < 0
2.68	52.6824	52.62422	+0.05818 > 0
2.69	53.7567	53.54555	+0.21115 > 0
2.70	54.85275	54.4816	+0.37115 > 0

From Table 2.4, the root of $t(x)$ lies between 2.67 and 2.68. Thus the solution δ of $t(x) = 0$ can be taken as ≈ 2.675 . Moreover, $t(x) < 0$ in $(0, \delta)$ and $t(x) > 0$ in (δ, ∞) .

Theorem 2.5 The inequality

$$(2.5) \quad \frac{1}{1+\lambda x} < \frac{\sinh^{-1} x}{x}, \quad x \in (0, \infty)$$

holds with the best possible constant $\lambda = \frac{\sinh \delta}{\lambda \cosh \delta} \approx 0.235361$ where δ is the unique solution of the equation $\sinh^{-1} x - x^2 \cosh x = 0$ as given in Lemma 2.1.

Proof. Let

$$\varphi(x) = \frac{x - \sinh^{-1} x}{x \sinh^{-1} x}, \quad x \in (0, \infty)$$

and $\sinh^{-1} x = t$. Then $x = \sinh t$, $t \in (0, \infty)$ and $\varphi(x) = \phi(t)$ where

$$\phi(t) = \frac{\sinh t - t}{t \sinh t} = \frac{1}{t} - \frac{1}{\sinh t}.$$

We differentiate $\phi(t)$ with respect to t and get

$$\phi'(t) = -\frac{1}{t^2} + \frac{\cosh t}{\sinh^2 t}, \quad t \in (0, \infty).$$

By Lemma 2.1, we infer that $\phi'(t) > 0$ for $(0, \delta)$ and $\phi'(t) < 0$ for (δ, ∞) . Thus $\phi(t)$ is increasing in $(0, \delta)$ and decreasing in (δ, ∞) . This implies that $\varphi(x)$ is increasing in $(0, \sinh \delta)$ and decreasing in $(\sinh \delta, \infty)$. So $\varphi(\sinh \delta) > \varphi(x)$ in either case and we get the inequality (2.5).

With the help of any graphical software, it can be seen that the lower bound of $(\sinh^{-1} x)/x$ in (2.5) is better than the corresponding lower bound in (1.3) if $x \geq \xi$ where $\xi \approx 2.8162$ i.e., the inequality (2.5) is asymptotically far better. Again the upper bound in (2.1) is stronger than the corresponding upper bound in (1.3) if $x \rightarrow \infty$. In a similar sense, inequality (2.4) is better than inequality (1.4).

3 Applications

In this section, we present some applications of our results obtained in section 2. First of all, we again obtain new bounds for $\sinh^{-1} x$ and $\tanh^{-1} x$ which are tighter than those obtained in section 2.

Proposition 3.1 If $x \in (0, \infty)$, then we have

$$(3.1) \quad \frac{1}{x} \left(3 \sqrt{1+x^2/3} - \sqrt{1+x^2} - 4 \right) < \sinh^{-1} x$$

and

$$(3.2) \quad \frac{1}{x^2} \left(4x - \ln(1+x^2) + x^2 \left(\sqrt{1+x^2} - 1 \right) \right) < \sinh^{-1} x$$

where λ is as defined in Theorem 2.5.

Proof. From inequality (2.2), we write

$$\int_0^x \frac{t}{\sqrt{1+t^2}} dt < \int_0^x \sinh^{-1} t \cdot dt, \quad t \in (0, x) \text{ and } x \in (0, \infty).$$

After evaluating we get

$$3 \left(\sqrt{1+x^2/3} - \sqrt{1+x^2} - 4 \right) < \left(x \sinh^{-1} t - \sqrt{1+t^2} \right)_0^x.$$

Equivalently,

$$3 \sqrt{1+x^2/3} - \sqrt{1+x^2} - 4 < x \sinh^{-1} x.$$

This gives inequality (3.1) and inequality (3.2) is obtained by a similar technique using (2.5).

It is observed that the inequality (3.1) is tighter than (2.2). The inequality (3.2) is sharper than (2.5) in $(0, \gamma)$ where $\gamma \approx 2.874$ and it is also sharper than the left inequality of (1.3) in the large interval (δ, ∞) where $\delta \approx 2.7858$.

Proposition 3.2 The inequalities

$$(3.3) \quad \frac{1}{x} \ln \left(\frac{1}{(1-x^2/3)^{1/3} \sqrt{1-x^2}} \right) < \tanh^{-1} x$$

$$< \frac{1}{2\lambda} \left[\ln \left(\frac{1}{1-x^2} \right) - \frac{3}{2} \left((1-x^2)^{2/3} - 1 \right) \right]$$

hold in $(0, 1)$.

Proof. Consider the combination of left inequality of (2.3) and the inequality (2.4) as

$$\frac{3}{3-t^2} < \frac{\tanh^{-1} t}{t} < \left(\frac{1}{1-t^2} \right)^{1/3}, \quad t \in (0, x).$$

Then integrating this inequality over $(0, x)$, we get desired inequalities (3.3).

The left inequality of (3.3) is sharper than the corresponding left inequality of (2.3). Again the right inequality of (3.3) is sharper than (2.4) and it is also tighter than (1.4) if $x \geq \zeta \approx 0.8595$.

Secondly, the inequalities

$$\left(\frac{\sin x}{x} \right)^2 + \frac{\tan x}{x} > 2, \quad x \in (0, \pi/2)$$

and

$$2 \frac{\sin x}{x} + \frac{\tan x}{x} > 3, \quad x \in (0, \pi/2)$$

were proposed respectively by J. B. Wilker [15] and C. Huygens [10]. Here, we state and prove the inequalities of the above type for inverse hyperbolic functions $(\sinh^{-1} x)/x$ and $(\tanh^{-1} x)/x$.

Proposition 3.3 (Wilker type inequality): For $x \in (0, 1)$, the inequality

$$(3.4) \left(\frac{\sinh^{-1} x}{x} \right)^2 + \frac{\tanh^{-1} x}{x} > 2$$

holds true.

Proof. From (2.2) and the left inequality of (2.3) we have

$$\begin{aligned} \left(\frac{\sinh^{-1} x}{x} \right)^2 + \frac{\tanh^{-1} x}{x} &> \frac{3}{3+x^2} + \frac{3}{3-x^2} \\ &= \frac{18}{(3+x^2)(3-x^2)} \\ &= 2 \cdot \frac{9}{9-x^4} > 2. \end{aligned}$$

The proof is complete.

Proposition 3.4 (Huygens type inequality): For $x \in (0, 1)$, it is true that

$$(3.5) 2 \frac{\sinh^{-1} x}{x} + \frac{\tanh^{-1} x}{x} > 3.$$

Proof. Again from the inequalities (2.2) and (2.3) we have

$$2 \frac{\sinh^{-1} x}{x} + \frac{\tanh^{-1} x}{x} > \frac{2\sqrt{3}}{\sqrt{3+x^2}} + \frac{3}{3-x^2}, \quad x \in (0, 1).$$

The inequality (3.2) will follow if we prove that

$$\frac{2\sqrt{3}}{\sqrt{3+x^2}} + \frac{3}{3-x^2} > 3$$

i.e.

$$\frac{2}{\sqrt{3(3+x^2)}} + \frac{1}{3-x^2} > 1$$

or

$$\sqrt{3(3+x^2)}x^2 - 2\sqrt{3(3+x^2)} > 2x^2 - 6.$$

Since the quantities at both sides of the last inequality are negative on $(0, 1)$, after squaring and simplifying we say that we want

$$33x^6 + 211x^4 + 288x^2 > 0$$

which is true on $(0, 1)$.

For refinements of inequalities (3.4) and (3.5) we refer to [7].

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TIME FRACTIONAL MAGNETO-THERMOELASTICITY WITH ROSENTHAL HEAT SOURCE AND EDDY CURRENT LOSS

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Abstract—In this paper, the analytical solution is obtained for time fraction heat conduction equation and thermal stresses in one dimensional finite rod induced by transient magnetic field. Heat generation is considered as a combination of Rosenthal heat source and Eddy current loss. The equations of electromagnetic field, heat conduction and elastic field are formulated. The Laplace and Fourier transform techniques are employed to solve the heat conduction equation. The thermal and magnetic stress components are obtained in terms of sum of thermal and magnetic stress components. The thermal and magnetic stress components are arises due to eddy current loss and Lorentz force respectively. The time dependent magnetic field is taken in the form of exponential profile for numerical calculation. The results are illustrated graphically to understand the effect of fractional order parameter on magnetic field, eddy current loss temperature distribution and stresses.

Keywords— Fractional thermoelasticity, Magneto-thermoelastic, Lorentz force, Eddy current, Rosenthal heat source, Thermal stresses

Introduction

Many researchers studied the problems of thermoelasticity under the influence of magnetic field. We consider time dependent magnetic field if it acts on a conducting medium, generates heat which results into eddy current loss, causes temperature change in body. Subsequently two kinds of stresses emerge in the body, one is thermal stress due to eddy current loss and magnetic stress due to Lorentz force. The quasi-static problems with transient thermal stresses in thin and thick bodies with and without heat generation were studied by many authors. Kulkarni et al. [1] explained the quasi-static thermal stress problem of rectangular plate subjected to constant heat supply. Deshmukh and Khandait [2] discussed about the thermal stress in a simply supported rectangular plate. Stoll [3] has explained that by changing magnetic field generates eddy current which are loops of electrical conductor. The behavior of stress under the influence of magnetic field was explained by [4]. Boudet et al. [5] have discussed the effect of transient magnetic field on thermoelastic stresses in a conducting plate and determined quasi-static stresses in a one dimensional problem. In welding engineering problems such as cutting of metals, grinding, hardening of alloys, laser cladding, etc; the cause of thermal conduction results from a Rosenthal heat source. It takes place in the form of transient heat transfer. The idea of evaluating the temperature distribution in solids due to Rosenthal heat source introduced by many researchers [6, 7, 8]. However, these theories are restricted to quasi stationary state and integer order heat conduction equation. The fractional calculus provides a generalization of the derivatives and integration to non-integer order [9]. Past few decades, shows the remarkable contribution of fractional calculus to both experimental and theoretical field. He and Guo [10] study the effect of time, velocity of the moving heat source and fractional order parameter on considered temperature, displacement and thermal stress for one dimensional thermoelastic rod. In the theory of [11, 12], the constitutive equation with the long tail power time non-local kernel is taken

$$q(x) = -\frac{k}{\Gamma(\alpha)} \frac{\partial^\alpha T}{\partial x^\alpha} \Big|_{x=0}^{x=L} \quad R(x) = \frac{1}{\Gamma(\alpha)} \int_0^x \frac{q(\xi)}{(x-\xi)^{1-\alpha}} d\xi, \quad 0 < \alpha \leq 1 \quad (1)$$



Principle

$$q(t) = -k \frac{\partial T}{\partial x} \bigg|_{x=0} = -k \frac{\partial T}{\partial x} \bigg|_{x=L}$$

where q is the heat flux related to the temperature gradient $q = -k_T \nabla T$, k_T is the thermal conductivity. Eqs. (1) and (2) leads to the time fractional heat conduction equation with Caputo derivative [13],[14]

$$\frac{1}{\alpha} \frac{\partial^\alpha T}{\partial t^\alpha} = \Delta T, 0 < \alpha \leq 2, \quad (3)$$

where $T(x,t)$ is temperature change, $\frac{\partial^\alpha}{\partial t^\alpha}$ is a Caputo fractional derivative defined as [11]

$$\frac{\partial^\alpha T}{\partial t^\alpha} = D^\alpha T = \begin{cases} \frac{\partial^n T}{\partial t^n} & \text{for } \alpha = n \in \mathbb{N} \\ \frac{1}{\Gamma(n-\alpha)} \int_0^t (t-\tau)^{n-\alpha-1} \frac{d^n T(\tau)}{d\tau^n} d\tau & n-1 < \alpha < n \end{cases} \quad (4)$$

The equation (3) provides the whole spectrum from local heat conduction (as $\alpha \rightarrow 0$) through the standard heat conduction ($\alpha = 1$) to the ballistic heat conduction ($\alpha = 2$). α is the order of diffusivity coefficient, ρ the mass density, C the specific heat capacity.

The aim of the work is to obtain the mathematical model for one dimensional time fractional thermoelastic field with Rosenthal heat source. The solution is obtained for temperature and elastic field in presence of magnetic field. The Laplace and Fourier transform techniques are adopted to deal with time and space variable respectively. The stresses obtained are the combination of thermal and magnetic stresses which are due to eddy current loss, Rosenthal heat source and Lorentz force respectively. For numerical calculation excitation is taken in the form of exponential function. The effect of fractional order parameter is observed on temperature distribution, thermal stresses, magnetic stresses, eddy current loss and magnetic field.

2. Mathematical Formulation

2.1 Electromagnetic Field

Consider the magnetic field $H = (0,0,H_z(x,t))$ in the conducting plate, and the electric field be $E = (0,E_y(x,t),0)$. The conducting plate of thickness $2L$, with time dependent magnetic field is considered as $H_0 \phi(t)$ distributed uniformly and act on both side surfaces of the plate, where H_0 be a magnetic field strength and $\phi(t)$ is time function

$$\text{curl } H = J$$

(5)

$$\text{curl} \mathbf{E} = -\mathbf{B}$$

The governing equations of electromagnetism by neglecting the displacement current are given by [5]

$$\begin{aligned} \mathbf{J}_y &= \sigma \mathbf{E}_y \\ \mathbf{B}_z &= \mu \mathbf{H}_z \end{aligned} \quad (8)$$

where $\mathbf{B}_z$ is magnetic flux in z direction, $\mathbf{J}_y$ is the components of the current density in y direction, μ is magnetic permeability and σ is electric conductivity in a conducting rod.

The equation of magnetic field is given by [5]

$$\mathbf{H}_{z,xx} = \mu \sigma \mathbf{H}_{z,t} \quad (9)$$

where , comma denotes partial differentiation with respect to followed variable. The initial and boundary conditions are given by

$$\begin{aligned} \text{at } x = -L; \quad & \mathbf{H}_z = \mathbf{H}_0 \sin(t) \\ \text{at } t = 0; \quad & \mathbf{H}_z = 0 \end{aligned} \quad (10)$$

The current density is denoted by $\mathbf{J}_y$ which is produced by change in magnetic field called eddy current which produces joule heat. The eddy current loss $\mathbf{W}(x,t)$ is obtained from eddy current $\mathbf{J}_y$.

The eddy current loss is given by [5]

$$\mathbf{W}(x,t) = \frac{\mathbf{J}_y^2(x,t)}{\sigma} \quad (11)$$

2.2 Temperature Field

In this paper, we consider homogeneous isotropic thermoelastic finite space occupying the region $-L \leq x \leq L$. It is assume that the initial state of the medium is quiescent and insulated at boundary. The coordinates (x,t) are used and the problem is restricted to moving heat source. The problem is thus one dimensional with all functions considered depending on the space variable x as well as on the time variable t . The surface of the medium is taken traction free. The problem is considered within the context of the theory of thermoelasticity with time fractional order α .

The one dimensional time fractional order heat conduction equation with instantaneous moving heat source is [11, 15]

$$\frac{1}{\alpha} \frac{\partial^\alpha T}{\partial t^\alpha} = \frac{\partial^2 T}{\partial x^2} - \frac{g(x,t)}{K}, \quad 0 < \alpha \leq 2, \quad -L \leq x \leq L, t \geq 0 \quad (12)$$

The boundary conditions and the initial condition are

$$\begin{aligned} \frac{\partial T(-L,t)}{\partial x} &= 0 \\ \frac{\partial T(L,t)}{\partial x} &= f(t), \\ T(x,0) &= 0, \quad 0 < \alpha < 1, \\ T(x,0) = \frac{\partial T(x,t)}{\partial x} \Big|_{t=0} &= 0, \quad 1 < \alpha \leq 2, \end{aligned} \quad (13)$$

where $g(x,t)$ is the heat generator factor, K is bulk modulus.

2.3 Elastic field

The effect of magnetic field results the occurrence of Lorentz force, for one dimensional problem it has component only [5]

$$f_x = J \times B = \begin{pmatrix} 0 \\ \frac{\partial H}{\partial x} \\ 0 \end{pmatrix} \times \begin{pmatrix} 0 \\ 0 \\ \mu \frac{\partial T}{\partial x} \end{pmatrix} = \begin{pmatrix} \frac{\mu}{2} \frac{\partial [H(x,t)]^2}{\partial x} \\ 0 \\ 0 \end{pmatrix} \quad (14)$$

Simplifying the equation gives

$$f_x = \frac{\mu}{2} \frac{\partial [H(x,t)]^2}{\partial x} \quad (15)$$

where f_x depends on x and t . The displacement vector is considered as $(u(x,t), 0, 0)$. The analysis of the stresses and deformations in the rod is carried out by considering the stress displacement relations defined as in [16]

$$\begin{aligned} \sigma_{xx}(x,t) &= \frac{(1-\nu)E}{(1+\nu)(1-2\nu)} \left[\nu \frac{\partial u}{\partial x} + \frac{1+\nu}{1-2\nu} \alpha T \right] \\ \sigma_{xx}(x,t) &= \sigma_{yy}(x,t) = \frac{(1-\nu)E}{(1+\nu)(1-2\nu)} \left[\nu \frac{\partial u}{\partial x} + \frac{1+\nu}{1-2\nu} \alpha T \right] \\ \sigma_{zz}(x,t) &= \frac{E}{2(1+\nu)} \frac{\partial u}{\partial x} \end{aligned} \quad (16)$$

where $\sigma_{xx}, \sigma_{yy}, \sigma_{zz}$ the stress components and E the Young's modulus, ν the Poisson's ratio and α the coefficient of linear thermal expansion. The constitutive equation of one dimensional rod under the effect of Lorentz force is given by

$$f_x - \frac{\partial \sigma_{xx}}{\partial x} = 0 \quad (17)$$

To simplify the displacement equation of motion (17) use the eqns. (15) and (16) one obtains

$$\frac{\partial^2 u}{\partial x^2} - \frac{1-\nu}{1+\nu} \mu \frac{\partial T}{\partial x} = \frac{(1+\nu)(1-2\nu)}{(1-\nu)E} \frac{\mu}{2} \frac{\partial [H(x,t)]^2}{\partial x} \quad (18)$$

The mechanical boundary conditions and initial condition are

$$\begin{aligned} \frac{\partial u(x=0,t)}{\partial x} &= \frac{1+\nu}{1-\nu} \alpha T, \\ u(x=0) &= \frac{\partial u}{\partial t} = 0 \end{aligned} \quad (19)$$

2.4 Dimensionless Quantities

The following dimensionless quantities are defined to reduce the physical components of the problem

$$\begin{aligned} \bar{T} &= \frac{T}{T_0}, \quad \bar{x} = \frac{x}{L}, \quad \bar{t} = \frac{t}{\sqrt{\frac{E}{\rho}}}, \quad \bar{u} = \frac{u}{L_0}, \quad \bar{H} = \frac{H}{H_0}, \quad \bar{t} = \frac{t}{t_0}, \quad \bar{\sigma}_{xx} = \frac{\sigma_{xx}}{H_0^2}, \quad \bar{\sigma}_{yy} = \frac{\sigma_{yy}}{H_0^2}, \quad \bar{\sigma}_{zz} = \frac{\sigma_{zz}}{H_0^2}, \\ \bar{\sigma}_{xx} &= \frac{2\nu}{\alpha \beta E T_0} \bar{\sigma}_{xx}, \quad \bar{\sigma}_{yy} = \frac{2\nu}{\alpha \beta E T_0} \bar{\sigma}_{yy}, \quad \bar{\sigma}_{zz} = \frac{2\nu}{\alpha \beta E T_0} \bar{\sigma}_{zz} \end{aligned} \quad (20)$$

(299)

$$\frac{\partial A(r)}{\partial r} + \frac{A(r)}{r} = \int_0^{\infty} \frac{(\partial \phi(r'))}{\partial r'} \cos(k_r r) dr' \quad (33)$$

The solution of linear differential equation (33) is obtained as

$$A_r(r) = \frac{2(-1)^n}{k_n} \int_0^{\infty} e^{-k_n r} \frac{\partial \phi(r')}{\partial r'} dr' \quad (34)$$

The complete solution of the electromagnetic field (26) becomes

$$\vec{H}_1(\vec{x}, r) = \phi(r) + 2 \sum_{n=1}^{\infty} \frac{(-1)^n}{k_n} \cos(k_n \vec{x}) \psi_n(r) \quad (35)$$

$$\text{Where } h_n(r) = \int_0^{\infty} e^{-k_n r} \frac{\partial \phi(r')}{\partial r'} dr' \quad (36)$$

Insert the above equation in (24) and the eddy current loss (25), we get

$$J_1(x, r) = 2 \sum_{n=1}^{\infty} (-1)^{n+1} \sin(k_n \vec{x}) \psi_n(r) \quad (37)$$

$$\omega(\vec{x}, r) = 4 \sum_{n=1}^{\infty} \sum_{m=1}^{\infty} (-1)^{m+n} \sin(k_n \vec{x}) \sin(k_m \vec{x}) \psi_n(r) \psi_m(r) \quad (38)$$

3.2 Temperature Field

Using dimensionless quantities (20) the fractional heat conduction equation leads to

$$\frac{\partial^2 T}{\partial x^2} = \frac{\partial^2 T}{\partial r^2} + g(x, r), \quad 0 < x \leq 2, \quad -1 \leq \vec{x} \leq 1, r \geq 0 \quad (39)$$

The boundary conditions and the initial condition in dimensionless form are

$$\begin{aligned} \frac{\partial \vec{T}(-1, r)}{\partial x} &= 0, \\ \frac{\partial \vec{T}(1, r)}{\partial x} &= f_1(r), \\ \vec{T}(x, 0) &= 0, \quad 0 < x < 1, \\ T(x, 0) &= \frac{v^2 (k_n z)}{C \kappa} \Big|_{z=0} = 0, \quad 1 < x < 2. \end{aligned} \quad (40)$$

The heat source $g(x, r)$ in (39) is a moving heat source of Rosenthal type of constant strength $G_0 (W/m^2)$ moving with constant velocity U along positive x direction, due to the effect of eddy current loss $\omega(x, r)$ is assumed as

$$g(\vec{x}, r) = G_0 \delta(\vec{x} - \beta r) \omega(\vec{x}, r). \quad (41)$$

By employing a new co-ordinate ξ the fixed coordinate system is transformed to the moving coordinate system with the source. This is made possible by choosing:

$$\xi = \vec{x} - \beta r \quad (42)$$

Introducing the above transformation to the non-dimensional fractional differential (39), we get dimensionless fractional heat conduction equation with Rosenthal moving heat source as

$$\frac{\partial^2 T}{\partial \tau^2} + (1-\beta) \frac{\partial^2 T}{\partial \xi^2} = \frac{\partial^2 T}{\partial \xi^2} + B_0 \delta(\xi) \cos(\tau)$$

(43)

Using Laplace transform for (43), fractional derivative with parameter β and quiescent initial condition, heat conduction equation (43) will take the form

$$s^2 \bar{T}(\xi, s) - (1-\beta) \frac{\partial \bar{T}}{\partial \xi}(\xi, s) = \frac{\partial^2 \bar{T}}{\partial \xi^2}(\xi, s) + B_0 \delta(\xi) \frac{1}{s^2}$$

(44)

Taking Fourier transform of equation (44) with ξ parameter, one obtained the temperature distribution in the rod as

$$\bar{T}(\xi, s) = \frac{B_0 \Gamma\left(\frac{1}{2}\right) \left(\frac{1}{s^2}\right) \cos(\xi, s)}{(s^2 + \xi^2 - (1-\beta)\xi^2)^{1/2}}$$

(45)

Applying inverse Laplace transforms and inverse Fourier transform to (45) and then in obtained solution back substituting ξ , one gets the temperature distribution as

$$T(\bar{x}, \tau) = 4\pi \sum_{n=0}^{\infty} \sum_{k=0}^{\infty} \sum_{l=0}^{\infty} \sum_{m=0}^{\infty} (1-\beta)^{n+m} \frac{e^{i\beta\tau} f(k, \bar{x} + k_n) \sin(k_n \beta \tau) \sin(k_n \beta \tau) \Gamma(\alpha(k+1)+1)}{\Gamma(\alpha(k+1)\Gamma(\alpha(k+1)+1+2)} \\ \cos\left(\sqrt{\xi^2 + (1-\beta)\xi^2} \tau\right) \frac{2 \sin(\bar{x} - \beta \tau)}{\sqrt{\xi^2 + (1-\beta)\xi^2}} - \frac{2 \cos(\bar{x} - \beta \tau)}{\sqrt{\xi^2 + (1-\beta)\xi^2}} + (-1)^n \sum_{l=0}^{\infty} \frac{(-1)^l (\bar{x} - \beta \tau)^2}{2^{l+1} (l+1)!}$$

Where

$$f(k, \bar{x} + k_n) = (k-2)^2 - (1-\beta)(k_n^2 + 1)^2 + (k_n^2 + 1)^2 - (k_n^2 + k_n^2 + 1)^2 = \frac{(2\beta+1)\tau}{2}$$

(47)

3.3 Elastic field

Using (20) and (24), the dimensionless form of Lorentz force (15) is

$$\bar{T}_z = \frac{1}{2} \frac{\partial^2 \bar{T}}{\partial \xi^2}(\xi, \tau)$$

(48)

The new form of stress-displacement relations (16) by using dimensionless quantities (20), (21) are

$$\bar{\sigma}_{xx}(\bar{x}, \tau) = \beta \frac{\partial \bar{u}}{\partial \bar{x}} - \bar{T} \\ \bar{\sigma}_{yy}(\bar{x}, \tau) = \beta \frac{\partial \bar{u}}{\partial \bar{x}} - \bar{T} \\ \bar{\sigma}_{zz}(\bar{x}, \tau) = \beta \frac{\partial \bar{u}}{\partial \bar{x}}$$

(49)

Also the dimensionless equation of motion

$$\frac{\partial^2 \bar{u}}{\partial \bar{x}^2} = \beta(1-\nu) \frac{\partial \bar{T}}{\partial \bar{x}} - \nu \frac{\partial^2 \bar{T}}{\partial \bar{x}^2}$$

(50)

with corresponding boundary conditions are

$$\frac{\partial \bar{u}}{\partial \bar{x}}(\pm 1, \tau) = \frac{\nu}{\beta(1-\nu)} \bar{T} \\ \bar{u}(\bar{x}, 0) = \frac{\partial \bar{u}}{\partial \tau} = 0$$

(51)

The displacement and stresses solution are combination of thermal and magnetic components, obtained due to eddy current loss and Lorentz force as follows

$$\vec{u}(\vec{x}, t) = \vec{u}^T(\vec{x}, t) + \vec{u}^M(\vec{x}, t) \quad (52)$$

$$\begin{aligned} \vec{\sigma}_m(\vec{x}, t) &= \vec{\sigma}_m^T(\vec{x}, t) + \vec{\sigma}_m^M(\vec{x}, t) \\ \vec{\sigma}_n(\vec{x}, t) &= \vec{\sigma}_n^T(\vec{x}, t) + \vec{\sigma}_n^M(\vec{x}, t) \\ \vec{\sigma}_s(\vec{x}, t) &= \vec{\sigma}_s^T(\vec{x}, t) + \vec{\sigma}_s^M(\vec{x}, t) \end{aligned} \quad (53)$$

where the suffix T represents thermal component arises due to Lorentz force and M represents magnetic component arises due to Lorentz force. The thermal and magnetic components of displacement are obtained by solving the equation (50) and using conditions (51)

$$\begin{aligned} \vec{u}^T(\vec{x}, t) &= \frac{v}{\beta(1-v)} \int_0^t f(x, t) dt \\ \vec{u}^M(\vec{x}, t) &= [q(t)]^T - \frac{v}{\beta(1-v)} \int_0^t [H_z]^T dx \end{aligned} \quad (54)$$

Putting these displacement components (56) in equation (51), the thermal and magnetic stress components are obtained as

$$\begin{aligned} \vec{\sigma}_m^T(\vec{x}, t) &= 0 \quad \vec{\sigma}_m^M(\vec{x}, t) = \frac{v}{\beta(1-v)} \left\{ [q(t)]^T - [H_z]^T \right\} \\ \vec{\sigma}_n^T(\vec{x}, t) &= \frac{(2v-1)}{(1-v)} \vec{T} \quad \vec{\sigma}_n^M(\vec{x}, t) = \frac{v}{(1-v)} \left\{ [q(t)]^T - [H_z]^T \right\} \\ \vec{\sigma}_s^T(\vec{x}, t) &= \frac{v}{\beta(1-v)} \vec{T} \quad \vec{\sigma}_s^M(\vec{x}, t) = \frac{v}{\beta(1-v)} \left\{ [q(t)]^T - [H_z]^T \right\} \end{aligned} \quad (55)$$

4 Numerical results and discussion

In order to study the effect of Rosenthal heat source and eddy current loss under the influence of magnetic field in a conducting rod, we considered copper material for numerical computations and values of material constant are taken as [8]

$$\begin{aligned} \mu &= 4\pi \times 10^{-7} \left[\frac{H}{A} \right], \sigma = 3.42 \times 10^7 \left[\frac{S}{m} \right], \kappa = 92.6 \times 10^{-6} \left[\frac{m^2}{sec} \right], \\ v &= 0.33, E = 70[GPa], K = 386W/m^2K, \alpha_1 = 1.78 \times 10^{-5} [1/K], \\ \alpha_2 &= 3.98 \times 10^{-3} \end{aligned}$$

The arbitrary excitation function $\varphi(t)$ and the function $f_1(t)$ are chosen in the following form.

$$\vec{f}_1(t) = e^t, \quad \phi(t) = 1 - e^t \quad (56)$$

To illustrate the magneto-thermoelastic problem with time fractional temperature distribution we keep the speed of moving velocity at $\beta = 2.4$. We consider numerical computation which gives the variation in magnetic field, eddy current loss, temperature change and stress field for the various values of fractional parameter (α). Figure 1 represents variation of magnetic field with time for various values of $\alpha = 0.25, 0.75, 1.25, 1.5$. It is found that the magnetic field increases and become steady as time passes. In Figure 2, the distribution of eddy current loss with time for the different values of α are plotted. Eddy current shows peak near about $t = 0.18$ and it decays slowly with time. Figure 3 and Figure 4 represent temperature distribution with time for the various values of α and β . The effect of eddy current loss and Rosenthal heat source on temperature gives peak for different values of α and velocity. Temperature shows peak at time $t = 0.44$.

Figure 5 shows temperature distribution with space variable x for the value of $\beta = 2.4$ and $t = 0.1$ such that the peak arrive at $x = 0.24$ and it is also observed that the temperature gradually decreases as x increases. The stress is a sum of two components; one is thermal stress and magnetic stress. Figure 6 and Figure 7

represents thermal stress distribution with time and shows significant changes with the passage of time. While the Figure 8, Figure 9 and Figure 10 represents magnetic stresses with respect to time. It shows the significant difference for fractional parameter.

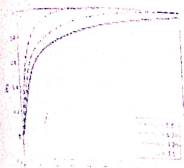


Fig. 1. Distribution of magnetic field (H) verses time (t) for various values of α .

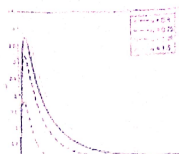


Fig2. Distribution of eddy current loss (W) verses time (t) for various values of α .

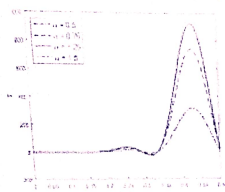


Fig. 3. Distribution of temperature (T) verses time (t) for various values of α .

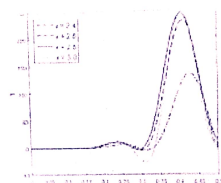


Fig 4. Distribution of temperature (T) verses time (t) for various values of α .

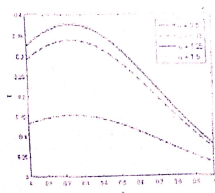


Fig. 5. Distribution of temperature (T) verses time (t) for various values of α .

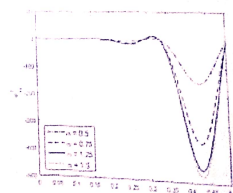


Fig. 6. Distribution of thermal stress ($\sigma_y T$) verses time (t) for various values of α .

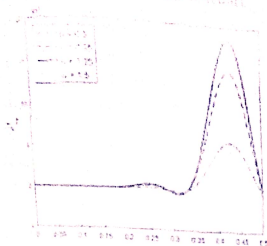


Fig. 7. Distribution of thermal stress (σ_{xx}^T) verses time (τ) for various values of α

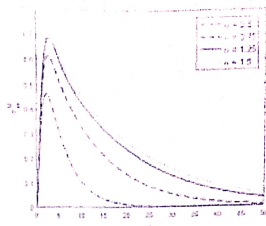


Fig. 8. Distribution of magnetic stress (σ_{xx}^M) verses time (τ) for various values of α

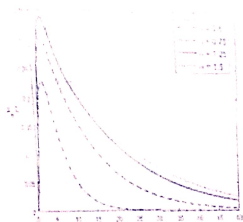


Fig. 9. Distribution of magnetic stress (σ_{yy}^M) verses time (τ) for various values of α

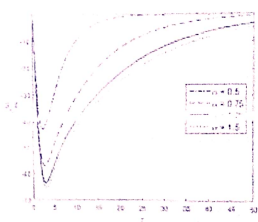


Fig. 10. Distribution of magnetic stress (σ_{zy}^M) verses time (τ) for various values of α

5 Conclusion

In this paper, a conducting rod under the effect of magnetic field due to eddy current loss with the time fractional thermoelasticity theory is presented. The heat conduction equation is subjected to Rosenthal heat source. The problem is solved by using Laplace and Fourier transform technique. The effect of different values of fractional parameter α on temperature and stresses are observed. We conclude the following facts.

1. It is clear that in a conducting rod, in all figures, the distributions considered have nonzero value which means that the region does not felt a thermal disturbance.
2. The increase in time fractional order parameter, the temperature and the eddy current loss increases while the effect of magnetic field and the stress components $\bar{\sigma}_{yy}^T(x, \tau)$, $\bar{\sigma}_{zy}^M(x, \tau)$ reduces. On the other hand, the remaining components of stresses are also reduces with the decrease in fractional order.
3. The temperature of the conducting rod increases as the speed of the moving heat source increases.

The result of this analysis is expected to help in understanding the phenomena of magneto-thermoelasticity development in conducting rod of fractional order parameters.

Acknowledgements

The first author wishes to thank, Dr Ganesh Kedar of Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur for their assistance that greatly improved the manuscript. Also wishes to thank the referees for their valuable comments and suggestions.

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The application of psychological principles to the improvement of performance in sports has received greater attention in these days. There are certain accepted psychological principles which have to be applied, so that the athletes and players are able to show their best in their performances. Coaches, physical educationists and sports scientists have always expressed a great need to know more about those psychological principles, which are helpful in improving the motor skills of the players. It is important to know about the role of personality traits of the players during training as well as competitive situations.

Sport psychology researchers have been interested in how athletes' psychological and characteristics influence performance. From this point, it is clear that psychological characteristics differ between more and less effective athletes and teams. Moreover, the ability to mentally prepare is considered a key component of such differences. The importance of personality as a predictor for behavior performance has been recognized in psychology. Researchers have recently reported the significant effects of personality on sports. When sports persons contribute in competitive sport, their underlying personality characteristics inevitably contribute to how they behave. Personality has been defined as "psychological qualities that contribute to an individual's enduring and distinctive arrays of feeling, thinking and behaving".

Personality is the total picture of one's organised behaviour. Personality is the sum of activities that can be discovered by actual observations over a long enough period of time to give reliable information. Personality is the sum of people's values and attitudes plus all of their traits, and that this sum is always a dynamic organization. In common usage, the term personality refers to vaguely conceived human quality which everyone recognizes as a special importance in inter-personal relation. It is a term frequently used in conversation, particularly when the topic involves social interaction. Individuals have difficult personalities, charming personalities, pleasing personalities, ugly personalities and the like-people are also to be having no personalities or are said to be full of radiating personalities. In common conversation, their personality is what one has or lacks as a person. Personality is also a product of biological and cultural heritage. A child is born with some biological heritage while the cultural environment moulds and shapes his personality. Personality is a product of the interaction of a biological organism with social environment. In other words, personality is a way and individual adjusts with one external environment. In fact, it is a way of responding to the environment. Each one of us has a unique system that determines and reflects characteristics behavior and thoughts.



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Materials and Methods

Subject

The main purpose of the study was to find out the significant difference between Personality Traits of Different level of Achievements of Female Athletes. For this study data were collected with purposive sampling methods. Sixty (60) female athletes, 20 from each participated in the Maharashtra State Tournaments (20), Inter Collegiate Tournaments of Sant Gadge Baba Amravati University, Amravati (20) and Inter University Tournaments (20). The age of the players were ranged between 18 to 28 years. Subjects did not use any ergogenic aids or supplementations and also they were all free from any injuries during the collection of data.

Administration of the test

To assess the personality of female athlete, Eysenck Personality Questionnaire - Revised (EPQ-R) were used. The EPQ measures the traits of personality: Psychoticism (P), Extraversion (E), Neuroticism (N) and Lie (L). EPQ-R contains 90 items and covers all the four categories above mentioned. Scoring of EPQ-R can be done manually or with the help of stencils, 1 mark for each correct responses according to scoring key of EPQ-R.

Statistical Analysis:

In order to find out the significant difference between personality traits of different level of achievement of female athletes the analysis of variance (ANOVA) was applied at 0.05 level of significance.

Analysis Of Variance of Personality Traits among State, Inter Collegiate and Inter University Players

Traits	SV	SS	df	MS	F
Psychoticism	between	3.7	2	1.85	1.72
	error	61.3	57	1.075	
Extraversion	between	6.3	2	3.15	3.243*
	error	55.35	57	0.971	
Neuroticism	between	0.7	2	0.35	0.343
	error	58.15	57	1.02	

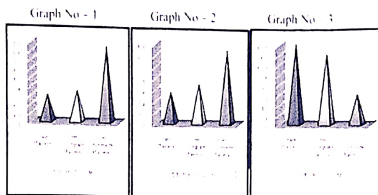
*Significant at 0.05 level

Tabulated F(0.05) (2, 57) = 3.158

Above table revealed that there was insignificant difference in Psychoticism and Neuroticism among State, Inter Collegiate and Inter University Players as obtained F-ratio was 1.72 & 0.343 which is lesser than that of required



tabulated 'F' value of 3.158 whereas Extraversion shows significant difference among State, Inter Collegiate and Inter University Players as obtained F-ratio was 3.243 which is greater than that of required tabulated 'F' value of 3.158 at 05 level of significance with (2, 57) degree of freedom



Finding

Comparison amongst all the three level of players with the performance of psychoticism shows insignificant difference, the reason may be attributed that psychoticism is defined by Eysenck as a personality type that is prone to take risks, might engage in anti-social behaviors, impulsiveness, or non-conformist behavior. Psychoticism appears to be linked with certain hormonal and biochemical secretions, such as serotonin and dopamine metabolites and with sex hormones. There seems to be little doubt that personality traits have a firm basis in the individual's biological structure and functioning, this may be the reason to be insignificant.

Extraversion shows significant difference the reason may be attributed that Extraversion-introversion appears to be related to differences in cortical arousal, mediated by the reticular formation, in the sense that introverts are characterized by greater resting levels of arousal. Extraversion athletes, also to be characteristics such as sensation seeking, risk taking, distractibility could not control their emotions. In this regard, these athletes motivate oneself and feelings of pleasure and satisfy their curiosity, show emotional behaviors. And it is mainly found in highly trained athlete i.e. Inter University players as compared to inter collegiate and state players.

A Comparative Study of Job Satisfaction of Women Teacher Educators

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Introduction :

In India, before the Independence women's were less involved in professional jobs. After independence women's education has been concentrated by the government of India and as a result of these women's get educated and entered in the professional areas and the jobs there on. Teaching is considered as the noble profession and hence women's were more interested in this profession. Teachers are considered as one of the most important resource which can contribute to the development of nation by means of developing the educational quality. India has a vision to become a superpower by 2025. To achieve this vision we must have quality health, quality in livelihood and the most important is quality in education. Therefore Government of India is consistently trying to impart quality education to all the aspirants. However quality cannot be reached in education until quality teachers are available. Hence it is very necessary to supply professionally trained and professionally equipped teachers as well as these teachers must be satisfied in all respect of their life then they can impart quality education to the students.

We see much women teachers entering in the profession of teaching. In the year 2006-07 there were 202545 teachers, in 2011-12 this figure goes up to 59597 and in the year 2016-17 this figure became 288381. Hence it is very important to see their job satisfaction since they are not satisfied then they cannot satisfy the educational needs of their students. This research article focuses on the women's involvement in the teaching profession. Teaching is an occupation where teachers need to maintain high level of professional competencies. They must accept personal responsibility of their own performance growth and development. 1

In the present scenario it has been observed that teaching has become one of the stressful occupations especially in case of women teachers; who had to deal with their professional responsibilities and family also. In Indian context women's are limited within the domestic domain as caregivers. 2 From this belief, women teachers like to give priority to family over career and that would interpret as a lack of commitment in their personal teaching profession. When commitment between work and family are not unequivocal it may lead to dissatisfaction. Hence it is very necessary to study the job satisfaction of women teachers working in the teaching profession.

In this paper researcher want to study the job satisfaction among the women Teacher Educators. Everyone, who wishes to enter in the teaching profession, would have to get through the teacher education curriculum. Then only he can be a teacher.

The teacher is one who imparts the knowledge of teacher education or involve in the teaching at the teacher education institution are known as Teacher Educator. Now if these teacher educators are not satisfied with their job then how would they impart and inculcate positive value of

teaching profession into their students. Hence it is necessary to study the job satisfaction of teacher educators.

Objective of the study :

1. To compare the job satisfaction of women teacher educators working in government and private aided institution.
2. To compare the job satisfaction of women teacher educators working in private aided institution and private unaided institution.
3. To compare the job satisfaction of women teacher educators working in government institution and private unaided institution.

Hypotheses :

1. There is no significant difference between the job satisfaction of women teacher educators working in government and private aided institution.
2. There is no significant difference between the job satisfaction of women teacher educators working in private aided institution and private unaided institution;
3. There is no significant difference between the job satisfaction of women teacher educators working in government institution and private unaided institution.

Methodology :

The study was a quantitative study in nature; therefore, the server technique was used in this study. The findings presented in this study is based on the survey research in teacher education institutions. Teacher's Job Satisfaction Questionnaire by Nasrin and A. Annes consisting of 42 items were used for collection of data and the raw data was obtained is analyzed on the basis of 't' statistics and the results were drawn out.

Sample :

The sample comprised of 60 women teacher educator out of which 20 each belongs to government institution, private aided institution and private unaided institution.

Statistical Analysis :

Sr.	Type of Institute	N	MEAN	S.D.	SE	Obtained t	Significance
1	Govt	20	165.26	19.38	6.44	0.79	$p \geq 0.05$
	Private Aided	20	170.38	21.33			
2	Govt	20	165.26	19.38	5.64	2.49	$p \leq 0.05$
	Private unaided	20	151.21	16.14			
3	Private Aided	20	170.38	21.33	5.981	3.20	$p \leq 0.05$
	Private unaided	20	151.21	16.14			

Result and Discussion :

From the above analysis it has been come to know that women teacher educators working in the government institution and private aided institution are more satisfied

than that of women teacher educators working in private unaided institution. The reason behind this can be the teacher educators working in the government and private aided institution are having all legitimate facilities such as wages, salaries, vacations, leaves etc. at the same time women teacher educators working in private unaided institution does not enjoy these facilities and hence they are not satisfied with their jobs.

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4. ICT in Education at School Level in India

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Introduction

After independence one of the focus areas of then government was literacy and the consistent efforts of literacy mission leads literacy rate to achieve 74.04% by 2011. Achieving literacy was the goal set up in the decade of 50's; now with great changes in the digital technology only being literate is not sufficient but one should be IT-literate to survive in the era of globalisation.

India realize the importance of ICT in education in the decade of 80's and started a pilot project named Computer Literacy and Studies in Schools (CLASS) during the year 1984-1985 and 2598 secondary schools were provided micro-computers during the 8th Plan. In 1998 National IT Task Force constituted by the Prime Minister while recommending need of computers and educational software to teachers and students suggested to supply computers and internet to schools, colleges and polytechnics by the year 2003. The national curriculum framework 2005 (NCF) also highlighted the substantial role of ICT in education.

NCF (2005) enunciated Information and Communication Technology (ICT) is an important tool for bridging social divides. ICT should be used in such a way that it becomes an opportunity equaliser by providing information, communication and computing resources in remote areas. No doubt technology has a great impact on the every corner of education and this is widely accepted fact. But the question is, does digitalization of education is possible at school level in INDIA? Prima facie one could answer affirmatively. But the through insight into the question leads to many sub questions which needs to be answered affirmatively for the sake of first one to be. Many policy document have envisioned the use of information communication technology in betterment of education for the sake of quality in education and does forcefully suggested fulfillment of ICT wherewithal by means of government and private support.

Research Question

The research questions creeps up to the mind is, how many schools have the computers? How many schools do have professionally trained computer teachers? How many schools do have internet facilities?



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Data Collection

For the said questions and their study the secondary data is obtained from Unified District Information System for Education. The present status of availability of the computer in the schools at elementary level is shown in the following table.

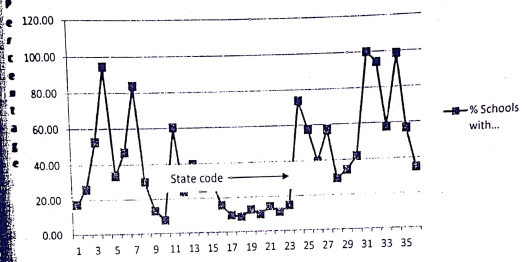
Sr	STATE NAME	Total Schools	Total Schools with Computer	Percentage
01	JAMMU & KASHMIR	28578	4916	17.20
02	HIMACHAL PRADESH	18024	4680	25.97
03	PUNJAB	28776	15136	52.60
04	CHANDIGARH	201	190	94.53
05	UTTARAKHAND	23660	7910	33.43
06	HARYANA	22268	10450	46.93
07	DELHI	5751	4825	83.90
08	RAJASTHAN	107931	32284	29.91
09	UTTAR PRADESH	245919	32031	13.03
10	BIHAR	80166	6085	7.59
11	SIKKIM	1279	772	60.36
12	ARUNACHAL PRADESH	4012	963	24.00
13	NAGALAND	2799	1112	39.73
14	MANIPUR	4865	1269	26.08
15	MIZORAM	3072	910	29.62
16	TRIPURA	4844	758	15.65
17	MEGHALAYA	13277	1284	9.67
18	ASSAM	65894	5731	8.70
19	WEST BENGAL	95723	12124	12.67
20	JHARKHAND	47441	4654	9.81
21	ODISHA	68978	9902	14.36
22	CHHATTISGARH	50705	5552	10.95
23	MADHYA PRADESH	142587	20806	14.59
24	GUJARAT	44051	32523	73.83
25	DAMAN & DIU	120	69	57.50
26	DADRA & NAGAR HAVELI	323	127	39.32
27	MAHARASHTRA	98213	55893	56.91
28	ANDHRA PRADESH	60435	17785	29.43
29	KARNATAKA	61739	21141	34.24
30	GOA	1462	609	41.66
31	LAKSHADWEEP	41	41	100.00
32	KERALA	16458	15520	94.30

33	TAMIL NADU	57539	33138	57.59
34	PUDUCHERRY	719	710	98.75
35	A & N ISLANDS	410	232	56.59
36	TELANGANA	40818	14162	34.70

SOURCE: Elementary State Report Cards (2015-16) downloaded from <http://udise.in>

htm

% of Schools with Computer



Analysis

Sr.	% of schools equipped with computer	No. of State
1	100	05
2	80	2
3	60	7
4	40	11
5	20	11

From above table it is revealed that

1. There are 11 among 36 states having less than 20% of the school with computer. This means that 80% of the school does not have computers in these 11 states.
2. Only 5 states have more than 80% schools with computer.
3. 24 among 36 states have less than 50% schools with computer.
4. This means same or may be weaker is the status of internet availability because with teaching learning point of view there is no use internet if there is no computer.

Discussion and Recommendations

Government of India through ministry of human resource development took up so many initiatives to equipped schools with computer and other IT resources. But we have miles to go in this regard. National policy on Education 2016 (NPE 2016) in its report says that, "Unfortunately, the results of all these initiatives have not had the expected results. While computers have been provided to a very large number of schools, their use remains limited. In many schools hardware remains locked in the headmasters room, in many they remain in their original packing as either there are no teachers to operate them, or the computer rooms have not been made ready, or the school does not have electric power, or grants to pay electricity bills. Even where computers are used, it is mostly to teach programs like Word and MS office. Text books teach the theory of computing, and examinations are conducted to test that knowledge whereas emphasis should have been on hands on practical learning. Most schools do not have internet connectivity and computers are rarely used in Government schools as an aid for teaching and learning."

Therefore ICT should be the routine part of teaching learning (Chalk and Board) and overall educational process and it should not be limited to subject or daily office core like typing and printing.

Recommendation

1. Schools should be provided with basic Infrastructural Facilities
2. A professionally trained and competent teachers with minimum qualification of degree in computer science and B.Ed. should be appointed on regular basis in every school
3. Teacher training colleges should equip themselves with ICT equipment and make it mandatory to use during practice teaching.
4. In service teacher training program should be organised especially concentrating on use of ICT in teaching and learning with PPP model.
5. Teacher training colleges should deploy value added courses viz. database management , presentation preparation, animation, online testing, programming etc

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Education in the Purview of L. P. G. with Special Reference to GATS

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In the era of liberalization, Privatisation and Globalization. Here we may see the privatization, commercialization and collaboration (especially foreign) of education with special emphasis on higher education. Not only this; in the recent years more emphasis is given to international trade and investment in education. WTO regime education is a tradable service and this is to be traded in a unitary manner across the globe. The General Agreement on Trade in Services (GATS) is the first set of rules covering international trade in services. It came into effect in 1995 and is under the auspices of World Trade Organization (WTO). GATS has three main parts: the main text with general principles and obligations; Annexes covering specific sectors; and Member countries' specific commitments to provide services.

GATS considers education as a tradable service. GATS covers 12 service sectors: Agriculture; Forestry; Fishing; Manufacturing; Construction and Engineering; Distribution; Education; Health; Tourism and Travel; Recreation, Cultural, and Sporting; Telecommunications; and Transport. Two exceptions are services in the exercise of governmental authority and

services not traded?

There are 4 ways that all services can be traded based on modes of supply:
1. Cross-border supply of service by consumers travelling to supplier country (e.g. tourism, education)
2. Cross-border supply of a service to consumer country without the supplier (e.g. open market, education)
3. Cross-border supply of a service to consumer country without the supplier (e.g. open market, education)



3. Commercial presence of a supplier in consumer country (e.g. offshore foreign universities)
4. Presence of Natural Persons from supplying country in consuming country (e.g. professors, researcher working outside their home country).

Table no. 1 would make it easy to understand the nature of supply

Table 1: Mode of supply of education under GATS

Mode	Explanation	Example
1. Consumption Abroad	the provision of a service involving movement of consumer to the country of the supplier)	# Students studying abroad
2. Cross Border supply	the provision of a service where the service crosses the border (doesn't need physical movement of consumer)	# Distance Education # e-learning # Virtual University
3. Commercial Presence	the service provider establish his facilities in another country to render services	# offshore foreign universities # Franchising # Partnerships
4. Presence of Natural Persons	person traveling to another country on a temporary basis to provide service	Professors, teachers, researchers working abroad

Source: Night, 2002

How is education defined in the GATS?

Trade in educational services is based on 5 sub-sectors of education as categorized by the United Nations Provisional Central Product Classification (CPC). These sub-sectors are: primary education, secondary education, higher education, adult education and other.

The 3 categories most relevant to tertiary education are: higher education; post secondary technical and vocational education services; and other education services.

Higher education covers post secondary technical and vocational education services as well as other higher education programmes leading to a university degree or equivalent.

Adult education covers education for adults outside the regular education system.

Other education covers all education services not classified elsewhere and excludes education services related to recreation matters.

Types of Education covered under GATS

Table 2: Classification of education services under GATS

Category	Education activities included in each category
Primary Education (CPC 921)	• pre-school and other primary education services • does not cover child care services
Secondary Education (CPC 922)	• general higher secondary • technical & vocational secondary • technical & vocational secondary (for disabled)
Higher Education (CPC 923)	• Post secondary technical & vocational educational service • Other higher educational services leading to university degree or equivalent
Adult Education (CPC 924)	• covers the education for adult outside the regular education system
Other Education (CPC 929)	• Covers all other education services not elsewhere classified • Excludes education service related to recreation matters

Source : Night, 2002

Present Status and Future Options

Government on GATS so far as Education Services is concerned. Being a member of WTO it is committed to progressive liberalization but can take steps in this direction only after the economic, social and political ramifications are analyzed and understood. Keeping in mind the national needs and ethos India is not likely to make any commitments in the Sub-sectors of primary education, secondary education, adult and continuing education and other education. However, it is possible that because of international compulsions some concessions may be made so far as higher education is concerned. If the country is obliged to do so it will be necessary, while framing responses, to take into consideration the following:

1. The competitiveness of the Education Sector, in general, and of the Higher Education Sub-Sector, in particular.
2. The present status and possibilities in the future for trade under different modes.
3. The economic and social needs of the country, and the national policies with respect to these.

If some commitments are made they will have to be accompanied by limitations that could be nation specific, and even specific to areas/regions of India. The restrictions could relate to free movement of persons, immigration rules, nature of courses, modalities of repatriation of money, subsidies to local institutions, reservations as laid down in the national policy and quality assurance mechanisms. The provisions that exist in GATS for exemptions and safeguards will have to be fully utilized.

Concerns and Conclusion

On February 2, 1835, British politician Thomas Babington Macaulay circulated Minutes on Education, a treatise that offered definitive reasons for why the East India Company and the British government should spend money on the provision of English language education, as well as the promotion of European learning, especially the sciences, in India.

The East India Company has nothing to do with the idea of investing in education. Yet, English education became important when the lower levels of the bureaucracy had to be staffed, creating a demand for babus, or native clerks and so they had.

The intentions in the Macaulay's *Minute* were clearly stated: education was to "form a class who may be interpreters between us and the millions whom we govern; a class of persons, Indian in blood and colour, but English in taste, in opinions, in morals, and in intellect". The history of this country witnesses their success in these intentions.

Now, with this background on should reckon the GATS.

The GATS commitment to education services has both the optimistic and pessimistic sides. Edsall (2000), GATS is a charter of rights for proportions who (a) restricts to the right of governments to regulate them, (b) guarantees the transnational education providers the right to both operate and receive government funding. Critics also points out that the corporate world has found a way to push their corporate agendas onto the unaware and unwilling countries and people without any democratic accountability by means of WTO/ GATS. In this attack, they have discovered the possibility of manufacturing the thinking, the attitudes, and the purchasing choice of their corporations' consumers and workers (Fraser and O'Sullivan 2003).

Especially in the country like India where education has a social concern and is subsidized is a barrier for the FREE TRADE and therefore government control should be forced to minimize through GATS. Private companies through their educational subsidiaries will run educational programs of their need and demand with little control over what is being taught by this private institutions. This will help these multinational corporate in producing skilled labours for their companies and in turn the students will get job. This may result in destroying the school

of thoughts, the philosophy, the critical enquiry, and the thinking ability of the students like Macaulays Minutes on education where preparing clerks was the main objective of education and this is more threatening out of it.

The point of fact is educational institutions and their services have been addressed as national and social services. Actually Educational institutions are supposed to disseminate and create knowledge and bestow services to the community for the sake of nation building. But the multinational institutions and the foreign institutions would weaken this task treating education as commodity and setting up the objective and content of education in terms of the market need.

The above discussion shows that there is a strong feeling that GATS negotiation would serve in the interest of multinational companies by imposing unequal bargaining power among the developed and developing countries. Perhaps we have to observe the functioning of WTO more vigilantly than ever to safeguard sovereignty.

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The Impact of Information Technology on Library Management & the Challenges Before Academic Libraries

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Abstract:-

Technology is increasingly playing a crucial role in successes of organizations. In the information age. The impact of information technology has been enormous on various domains like business, education, media etc. This rapid evaluation of IT has good and bad impact on our every day life this paper will discuss on the key aspects of human interaction and others domain that may be affected by the new technology. Since we live in the "information age" Information technology has become a part of our everyday lives, that's why the purpose of this paper is to know the impact of IT on our society

Introduction:-

Information Technology and their applications is beyond human imaginations. more than a decade, the Information Society concept has been at the centre of discussions on the future of work and of society in general, both for socio-economic research and policy-making, in a period greatly affected by the growing importance of information and communication technologies (ICTs) across the world..

Academic libraries are changing in response to changes in the learning and research environment and changes in the behavior of library users. The changes are evolutionary. Libraries are adding new, digital resources and services while maintaining most of the old, traditional resources and services. Finding and funding the appropriate balance of digital and traditional initiatives challenges strategic and financial planners

Information Technology:-

Information technology:- the technology involving the development, maintenance, and use of computer systems, software, and networks for the processing and distribution of data. The Information Technology Association of America (ITAA) defines Information Technology as: "The study, design, development, implementation, support or management of computer-based information systems, particularly software applications and computer hardware." IT deals with the use of electronic computers and computer software to convert, store, protect, process, transmit, and securely retrieve information.

Information technology (IT) is the use of any computers, storage, networking and other physical devices, infrastructure and processes to create, process, store, secure and exchange all forms of electronic data-

Changing Users Information Seeking Behaviors

Undoubtedly, the availability of electronic access to information has gradually brought some major changes to human information behavior related sources and services and their use in all walks of life. Such changes are significant that library and information professionals are studying now information seeking behavior, and its place within the learning process.

The internet is considered as a potentially excellent tool for teaching and learning. The students whenever they use internet for their own purpose in library, they browse internet to access textual and graphic information for their project work.

The Web is a new communication media for information publishing and information retrieval. It has changed the networked access to information by providing resources and directory services.

The World Wide Web is a tool for partial information gathering and learning for students. The students are now very comfortable in using web resources and they want more resources through web enabled technology. It has been concluded that e-resources helps for anytime availability and easy to access, which helps for the researchers to carry out the research on time.

The Users emphasizes the importance of electronic access to scholarly journals and library databases and the continuing value of books, both print and electronic, for meeting the information and research needs.

Questions before 21st-Century Libraries and librarian

- How will future library professionals organize, store, and distribute information?
- How will school (and other) librarians support information literacy in physical and digital environments?
- What new forms of information may develop?
- What will a book look like? A scholarly journal? A database?
- Will book found on stack or on desktop?
- If space required for library physically?
- What will be the role of libraries and librarians play as the distributors of information?
- Will the change in qualification of librarian?
- Should librarians become experts in informatics, social networking, e-government, civic participation, and community development?
- Are user satisfied with digital form, Digital literature?
- Will there change in library services?

Changes Due To Information Technology

Technology changes traditional information forms.

A number of technological advances have eliminated, supplanted, or altered the more traditional forms of information provided by libraries. For example, recorded thought in the form of a book, monograph, or newspaper is at the very core of what a library has traditionally provided its users. This material is now available in new forms and accessible in new ways. Existing information has been converted to electronic form and made available online.

Digitization Changes the Landscape of Information Access and Use

Current and new forms of electronic information are fundamentally changing the way people produce, access, and process information. Members of the first generation of the technological revolution (those born after the proliferation of personal computing in the 1980s) have perceptions of information, its creation, its use, and its storage vastly different from the traditional views.

Digital Initiatives and the Future of Reading

In thinking about the future of libraries, many librarians and experts are going back

to the beginning—the act of reading or processing information. A growing body of literature addresses the way new generations—“digital natives”—will create, access, and absorb information. These changes will only become more profound in the future. Internet is empowering a tech-savvy generation to pursue a central element of 21st century.

E-Research

Advances in electronic publishing and content digitization are already having a profound effect on the way students and academics conduct research and publish findings. Researchers and scholarly publishers are collaborating on new ways to produce content in the digital environment. First used in the sciences and extending now to the humanities, e-research initiatives (online journals, electronic research communities, e-books) represent a rapidly growing component of the evolution from printed facts to digital culture.

While this change will continue to alter library spaces and services, it will also radically affect the scholarly publishing industry and the economics of library collecting.

Google Book Search

The library community, content creators, the publishing industry, and many others are currently embroiled in a complex debate regarding Google Book Search, a vast effort to digitize millions of published works and make them available on the mega-search engine's site. While some of the works Google has already digitized are in the public domain, many remain protected by copyright and out of print.

Mobile Computing

Also having a profound effect on the way users find, access, and process information is the increased popularity of mobile computing. Indeed, many experts insist that in the future, all personal computing will be mobile. Phones, media players, and computers will increasingly merge into portable devices that will free the information seeker completely from wired sources.

New Information Processes are Changing Libraries, Library Services, and Librarians

Current and future library services designed to meet the needs of digital natives and digital nomads. In the near future, a number of services already offered by many libraries—for example, mobile catalog access, two-way text communication and reference, and podcasts—will include digital collections specially designed for mobile computing devices such as iPods, smart phones, and e-books. The library of the future can remain both a portal and a destination for information seekers, whether they access the information via a handheld computing device or the front door of their local library. While some critics argue that this will mean the eventual disappearance of a physical library, others see an opportunity to make more resources available to more users in more locations.

Print on demand is an excellent example of this kind of service. Printing a book for a single user. Some institutions are providing a books-on-demand service—single copies of a published work printed in the library or another location on a stand-alone printer that also binds and covers the material.

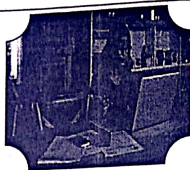
Accordingly, many experts believe that the librarian's job will become more, not less, important in the coming decades as new problems of digital organization and preservation are created and confronted. Indeed, many consider the librarian most qualified to lead efforts to embrace the new media while being the least beholden to profit-making economic models.



SELF CONCEPT OF EDUCATED WORKING WOMEN IN VARIOUS PROFESSIONS – A COMPARATIVE STUDY

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ABSTRACT

Self concept is defined as a value that an individual places on his or her own characteristics, qualities, abilities and actions. Self concept is not innate but developed and constructed by the individual through interaction with the environment and reflecting on that interaction. The purpose of the study to measure the self concept of educated working women in various professions of Vidarbha Region. The sample of 435 educated working women selected randomly from Medical, Engineering Colleges and from district session courts of Vidarbha region. Data collected by descriptive survey method. Self concept questionnaire developed by Dr. V.K. Mittal was used for data collection. Mean S.D. and 't' value was used to analyse the data. The study concluded that most of the educated working women have satisfactory and low level of self concept. Educated working women were much similar in respect of their self concept.

KEYWORDS: characteristics, qualities, abilities and actions.

INTRODUCTION:

Self concept is generally refers to our perception of ourselves, how we see our abilities, attitudes, attributes, beliefs and expectations (Harter 2006, Pajaras and Schunk 2001) we could consider self concept to be our mental picture of who we are. Accordingly to Saul Mc Leod (2008) 'The term self concept is a general term used to refer to how someone thinks, evaluates or perceives themselves. To be aware of oneself is to have a concept of oneself.' Resenberg defines the self concept broadly as the 'totality of an individual's thoughts and feelings having reference to himself as an object.'

Self concept is the set of characteristics that the person views as being part of himself or herself. The self concept provides us our identity. It provides the sense of who we are. The self concept is actually a cluster of selves, everyone has multiple selves for instance, self concept regarding beauty, regarding physique, regarding intelligence, regarding morality etc. In short, what we feel about our self regarding different attributes is our organized self concept.

One's self concept is a collection of beliefs about oneself that includes elements such as academic performance, gender identity, sexual identity and racial identity. Generally self concept embodies the answer to who am I? One's self concept is made up of self schemas and their past, present and future selves. It also made up of interacts. With self esteem, self knowledge and social self to form self as whole. The perception people have about their past or future selves is related to the perception of their current selves.

Self concept generally refers to the totality of a complex, organized and dynamic system of learned beliefs, attitudes and opinions that each person holds to be true about his or her personal existence. Franker states that the self concept is the basis for all motivated behavior. Self concept is not innate but it is developed by the individual through interaction with the environment and reflections of it. This aspect



indicates that self concept can be modified or changed. Women are more serious towards their career as compared to man. Educated women can easily contribute to society as well as home if they are well qualified. Women are more focused and have a unique decision making power even at senior leadership level, in the most optimal manner and at times are in a better position than man.

An educated woman can manage her home more efficiently. She can look after the work of the servants. She can maintain accounts, prepares the family budget in a balanced way and keeps her kitchen in hygienic condition. She can manage the household very effectively. An educated woman proves a source of great comfort to her family.

An educated woman with the awareness of her role as citizen can play a more dynamic role in addressing the economic challenges faced by her country in the areas of agricultural production, food self sufficiency, the fight against environmental degradation, the use and conservation of water and energy. An educated woman with increased earning potential is more likely to give back to the community than her male counterparts. Data released by pay scale reveals that many female dominated careers report high rates of 'job meaning' claiming career satisfaction was more important than salary.

Educated women are an imperative in any society but the benefits to the developing world are overwhelming. Educated women contribute to the quality, size and productivity of the workforce. They can get better paying jobs, allowing them to provide daily necessities, health care and education to support the family. The ripple effect created by educating woman is unquestionable and absolutely necessary for the future of any society.

Children with educated mothers are more likely to attend school and pursue higher levels of education than their peers with uneducated mother. Educated women provide a better starting point for the next generation. Research has found that educated women are less likely to support terrorism and militancy than men of same education level. An educated woman is better equipped to increase family income and resolve family problems satisfactorily. Her family's wellbeing thus gets a big boost.

LITERATURE REVIEW

Though a great variety of studies have been designed and carried out almost all the related variables of self concept, a major portion of research is devoted to the self concept of students and comparatively less attention has been to the study of self concepts of educated women working in various professions.

Naushaba Atta Ch and Mohammad Jamil Bajwa (2011) in their study on 'the impact of education of self concept of adults' concluded that as the level of education increases the self concept of adults also increases and self concept is directly proportional to their qualification.

Bhende R.G. (2005) in his study titled as an 'Analytical Study of values, self concept, creativity and anxiety of students' concluded that Female students have more physical and moral self concept but low intellectual self concept than male students.

Khatoun Parveen (1996) carried out - 'A study of self concept and alienation in college girls in relation to education and religion' and observed that self concept of college going girls was higher than the uneducated girls in the both sample of Hindu and Muslim religion.

Sadar Jyoti (2002) in her study titled as 'A comparative study of self concept, value concept, aspiration level and achievement motivation level of adolescent students' concluded that girls have more moral self concept than boys. Boys and girls have equal social self concept and intellectual self concept.

Khatry P.P. (1973) concluded that there was no significant difference between the self concept of primary, secondary and college teachers. Gayatri Vibhinn (1980) in her research titled as self concept of women in different occupations concluded that working women have high level of self concept than housewives.

Dastoor H. F. (1982) in his study 'self concept of nurses in Gujarat State' concluded that 70% nurses have high level of self concept and 30 % nurses have low level of self concept. Rai G. (1983) Carried out 'A study of self concept of the prospective teachers' and concluded that prospective teachers have positive self concept. Jain, Jayanti R. (1990) observed that there was a positive relation between the high level of self

concept and girls with high academic goals. Banui, Kuotsu (1992) concluded that, the self concept of college students were significantly correlated with social and democratic values. Kaur, Sharanjeet (1992) concluded that self concept was predictor of career maturity for girls.

It is easy to infer from the above cited research findings that most of them focus on students self concept. In the light of these findings it is needed to study the self concept of educated working women in various professions of Vidarbha Region.

OBJECTIVES

- ❖ To study the self concept level of educated working women in various profession.
- ❖ To compare the self concept of educated working women in various profession.

HYPOTHESES

- ❖ There is excellent level of self concept of educated women working in various professions.
- ❖ There is no significant difference between the self concept of educated working women Engineers and educated working women doctors.
- ❖ There is no significant difference between the self concept of educated working women doctors and working women advocates.
- ❖ There is no significant difference between the self concept of educated working women advocates and working women Engineers.

Method

The present study is based on survey method particularly descriptive survey research.

Sample

The researcher selected 145 women doctors, 145 women Engineers working in various Medical and Engineering Colleges and 145 women Advocates working in various District & Sessions Courts of Vidarbha Region by using random sampling technique.

Tool

Self concept questionnaire developed by Dr. V.K. Mittal was used to measure the self concept of educated working women Doctors, Engineers and Advocates of Vidarbha Region. The Questionnaire contained 100 questions which were divided in 11 factors of self concept. The reliability of questionnaire by split half method was .94 and by test retest method was .86.

Statistical Techniques

Both descriptive and inferential statistics were employed for analysis of data. The descriptive statistics such as Mean and S.D. were used.

Inferential statistics such as 't' test was employed, 't' value was calculated to know the significant difference between self concept of educated women Doctors, women Engineers and women Advocates working in Vidarbha Region.

Analysis of Data

Testing of H_0

There is excellent level of self concept of educated women working in various professions.

Table 1 : Showing the level of self concept of educated working women.

Sr. No.	Level	Women Doctor	Women Advocates	Women Engineers
1	Excellent	09	08	11
		6.20	5.52	7.58
	Good	10	19	20
		6.90	13.10	13.80
	Satisfactory	48	65	57
		33.10	44.83	39.31
	Low	76	47	53
		52.40	32.41	36.55
	Very Low	02	06	04
		1.40	4.14	2.76

From the table 1 it is observed that most of the educated women advocates and women Engineers have satisfactory level of self concept and low level of self concept. Most of the women doctors have low level of self concept. Hence H_{01} is rejected.

It is concluded that most of the educated working women have satisfactory and low level of self concept.

Testing of H_{02}

Table 2 : Showing the significance of difference between self concept of educated working women Engineers & women Doctors.

Sample Women	Number	Mean	S.D.	't' value	Level of significance
Engineer	145	245.06	16.12	.47	0.05
Doctor	145	244.13	17.66		Not Significant

Table 2 shows that at 288 df. 0.05 level of significance the calculated 't' value is .47 which is less than the table value 1.96.

Therefore it is inferred that there is no significant difference between the self concept of educated working women Engineer and women Doctors. Hence H_{02} is accepted.

It is concluded that educated working women engineers and women doctors are much similar in respect of their self concept.

Testing of H_{03}

Table 3 : Showing the significance of difference between the self concept of educated working women doctors and women advocates.

Sample Women	Number	Mean	S.D.	't' value	Level of significance
Doctor	145	244.13	17.66	.69	0.05
Advocate	145	245.48	15.74		Not Significant

Table 3 shows that at 288 df 0.05 level of significance the calculated 't' value is .69 which is less than the table value 1.96.

Therefore, it is inferred that there is no significant difference between the self concept of educated working women Doctors and women Advocates. Hence H_{03} is accepted.

It is concluded that educated working women doctors and women advocates are much similar in respect of their self concept.

Testing of H_0

Table 5 : Showing the significance of difference between the self concept of educated working women Advocates and women Engineers.

Sample Women	Number	Mean	S.D.	't' value	Level of significance
Advocate	145	245.48	15.74	.23	0.05 Not Significant
Engineer	145	245.06	16.12		

Table 4 shows that at 288 df 0.05 level of significance the calculated 't' value is .23 which is less than the table value 1.96.

Therefore it is inferred that there is no significant difference between the self concept of educated working women advocate and women Engineer. Hence H_0 is accepted.

It is concluded that educated working women advocate and women Engineer are much similar in respect of their self concept. .

CONCLUSIONS AND DISCUSSION

➤ Most of the educated working women have satisfactory and low level of self concept. Educated working women Engineers and women Doctors and women Advocates are much similar in respect of their self concept.

Above conclusion is much similar with the findings of Gayatri, Vibhinn (1980) who in her research concluded that there was no significant difference between the self concept of highly educated working women Engineer and women advocate, women Engineer and doctor, women advocate and women doctor and women advocate and women college teacher.

SUGGESTIONS

- 1] Encourage women and make them feel special and strong, Encourage them to speak up and make sure they know the value of their opinion, Celebrate their self expression.
- 2] Encourage her to be her authentic self.
- 3] Lift women up by taking a stance against negative comments.
- 4] Women must work together to empower on another in the work place.
- 5] Admire strong women, empower women with kindness and encourage them to make their aspirations a reality.

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PERCEPTION OF PROFESSIONAL VALUES AMONG STUDENT TEACHER

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ABSTRACT -

Values are the guiding principles of life that contribute to the allround development of an individual. They give a direction to life and thus, bringing joy, satisfaction and peace. Values add quality to life. Developing whole personality of the student is one of the vital role of teacher. If a teacher has an understanding about her professional values. It is easy for her to follow. The general purpose of the study was to measure the perception of professional values among student teacher. The sample of 100 student teachers was drawn by applying random sampling method from two B.Ed. colleges in Amravati, district of Maharashtra State. Student teacher's perception of professional values inventory prepared by the researcher was the tool used for collecting the data. Mean, S.D., "t" test and ANOVA test were used to analyze the data. The study inferred that, there is significant difference between before training student teachers and after training student teachers in their perception of professional values.

Introduction :-

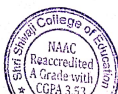
Values are the standards of behaviour in day to day activities and guiding principles in critical life situations. Value is an endless belief that a specific mode of conduct or state of existence is personally preferable to an opposing or converse mode of conduct with a focus on what is right and what is wrong. Value is a relationship between a person and an environmental situation which evoke an appreciative response in the individual. Any human activity, thought or idea, feeling, sentiment or emotion which could promote self development of the individual in all its dimensions could be said to constitute a value. To give proper value education for the students it is compulsory that the teacher has good value orientation. Professional values is learnt and imbibed during teacher training. To incorporate professional values in the curriculum of teacher education to suit the present day need in education it becomes necessary to understand their level of perception of professional values of the students teachers.

Objectives of the study :-

1. To study the perception of professional values of student teachers before training and after training.
2. To study the interaction effects within and among the methodology (English, Marathi and physical science) of student teachers in their perception of Professional Values.
3. To study the interaction effects within and among the methodology (Mathematics, Biological Science, Social Studies) of Students teachers in their perception of professional values.

Hypotheses :-

1. There would be no significant difference between before training and after training student teachers in their perception of professional values.
2. There would be no interaction effects within and among the methodology (English, Marathi and physical science) of student teachers in their perception of professional values.





3. There would be no interaction effects within and among the methodology (Mathematics, Biological Science, Social Studies) of student teachers in their perception of professional values.

Methodology :-**Sample :-**

A sample of 100 student teachers was drawn by applying simple random sampling method from two B.Ed colleges in Amravati District of Maharashtra State

Tools -

Student teacher's perception of professional values inventory prepared by the researcher was the tool used for collecting the relevant data.

Method of Study -

For the present study experimental method was used.

Statistical techniques :-

Both descriptive and inferential statistics were employed for analysis of the data. The descriptive statistics such as mean and S.D. were used.

Inferential statistics such as t-test was employed "t" value was calculated to know significant difference between the variables ANOVA test was carried out to test the differences within and among variables.

Result And Discussion :-

Table -1- Perception of professional values of student teachers before trainings and after training

Level of training	N	Mean	S.D.	t-value	Level of Significance
Before	50	68.72	15.71	7.16	Significant
After	50	92.10	6.55		

The above table shows that, at 98df 0.05 level of significance the calculated "t" value is greater than the table value 1.98

Therefore it is inferred that, before training and after training student teachers differ significantly in their perception of professional values.

Hence it is concluded that, there is a significant difference between before training and after training student teachers in their perception of professional values.

Table -2- Perception of professional values of student teachers with reference to their methodology (English, Marathi and Physical science)

Source of variation	Sum of Squares	Df	Mean Square	F-value	P-Value
Between subjects	1612.192	2	905.105	2.830	0.062
Within subjects	35451.231	117	318.265		
Total	37063.423	119			

The above table shows that, at 0.05 level of significance the calculated F- Value is lower than the table value 3.09

Calculated P- Value 0.062 is greater than 0.05 for the corresponding F- value 2.830

Therefore it is inferred that, the overall difference among the three set of means are not significant and are due to chance.



Hence it is concluded that, there is no interaction effects of both within and among student teachers with methodology subjects English, Marathi and Physical science with respect to their perception of professional values.

Table -3- Perception of professional values of student teachers with reference to their methodology (Mathematics, Biological Science, Social Studies)

Source of variation	Sum of Squares	Df	Mean Square	F-value	P-Value
Between subjects	706.692	2	3262.355	1.104	0.324
Within subjects	36534.731	117	327.543		
Total	37241.423	119			

The above table shows that, at 0.05 level of significance the calculated F- Value is lower than the table value 3.09

Calculated P- Value 0.324 is greater than 0.05 for the corresponding F- value 1.104

Therefore it is inferred that, the overall difference among the three set of means are not significant and are due to chance.

Hence it is concluded that, there is no interaction effects of both within and among student teachers with methodology subjects Mathematics, Biological Science, Social Studies with respect to their perception of professional values.

Findings :-

1. There is significant difference between before training student teachers and after training student teachers in their perception of professional values.
2. There is no interaction effects within and among the subjects English , Marathi , Physical science student teachers in their perception of professional values.
3. There is no interaction effects within and among the subjects Mathematics, Biological Science, Social Studies student teachers in their perception of professional values

Conclusion :-

Values are considered potent determinants of human behaviour. Inculcation of desirable values among teachers is highly essential to make them committed teachers. It is observed from the study that there is an impact of student teachers training in developing professional values among teachers. Professional values will not differ with the methodologies opted by the student teachers during their training professional values is imparted directly and indirectly during the student teachers training as an integral part of all the subjects.

Educational Implications :-

The role of teacher in developing desirable values among his student is very important. The secret of teaching values is to inspire and kindle the quest among students by means of one's examples and mastery of knowledge. A teacher who lives by values exerts a profound influence on students. Professional development is a must for every teachers in the enabling teaching - learning context to know and understand the expectations, challenges and issues of the teaching profession.

Professional value perception of student teachers can be developed and assessed directly and indirectly. If the student teachers becomes aware of the assessment of professional values, they becomes conscious and deliberately functions, in the beginning but later on it is conditioned and professional values becomes a habit for them.



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प्रस्तावना

नांदीसोपानाच्या सारनामची शिष्टाचार पुरस्ती
 मंगळार प्रथम दिना सुनिश्चित राखित शिष्टाचार
 समीक्ष करणार शिष्टाचार मंडळी राखी राखणार
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 समीक्ष करणार शिष्टाचार मंडळी राखी राखणार

एवं शिक्षणस्य निम्नसहस्रसंख्ये विद्यमाने शिक्षण-
आयोगायां स्थापना १९४८-४९ मध्ये केल्याचे आढळते.
त्याच आयोगा मध्यस्थीत अनेकशा आयोगांच्या
स्थापने १९५२-५३ मध्ये आठ आयोगे स्थापित केल्या.
आयुक्ताने सर्वत्र शैक्षणिक स्थितीची चौकट घेऊन
दलील, माध्यमिक शिक्षण हा एक शिक्षण संस्थेत
स्थापित, सुधारणे व सुलभते साधणे या सर्व
कार्यांकरिता कार्यवाही केल्या.

आभेभासा सोडा प्रकाशना सो विभागा
वर्गोद कल्याण आता सो सो विभागा
मासिक स्वभावात विभागात वरत अशा
समया पदीतपणी अति

२३३ शिक्षणवर्गात सामाजिक व वैयक्तिक विकास प्रमाण परीक्षेसाठी लागू असलेल्या अभ्यासक्रमातील शिक्षण प्रणाली विविधभाषी विद्यार्थ्यांना प्रमाण प्रत्येक वर्षात जास्त जास्त प्रमाण-परीक्षा याचभाषीत अनुमानित करी घ्याव्यात असे शिक्षणवर्गातील सर्व सदस्य विवेकाने जाणून घ्यावे व त्याची देवादात घ्यावे.

या आयोगाने स्त्री शिक्षणाच्या विकासासाठी
खासगीत सुचना केल्या आहेत

✓ मुलीच्या शिदाणाद्वारे पाहण्याचा - पालनविषय
दृष्टीकोन अत्यंत सामाजिक - असल्यामुळे त्याचा
माध्यमिक व पूर्व माध्यमिक शिदाण करावयाचे
दिले जाते

✓ माध्यमिक व उच्च माध्यमिक शिक्षणात उपलब्ध असणाऱ्या निविदा सारखा मुलींकडिता उपलब्ध आहे परंतु त्यात मुलींना नाममात्र प्रवेश दिला जातो.

कोठारी शिक्षण आयोग (1964-66)

स्त्री शिक्षणाविषयक सूचना करताना आयोगाने खालील तीन बाबींकडे लक्ष वेधले

- 180

Status Of Indian Women And Need Of Women Empowerment For National Development

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Librarian

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Abstract : This paper Focus on empowerment of women, status of women in society & how they work for family; social as well as on political ground, this paper shows necessity of women empowerment if they empowered they become source of infinite power.

Introduction: The subject of empowerment of women has becoming a burning issue all over the world including India since last few decades. Many agencies of United Nations in their reports have emphasized that gender issue is to be given utmost priority. It is held that women now cannot be asked to wait for any more for equality. We all know that girls are now doing better at school than boys. The annual results of Secondary and Higher Secondary Board examinations reveal this fact. More women are getting degrees than men, and are filling most new jobs in every field.

We can now see women in almost every field: architecture, lawyers, financial services, engineering, medical and IT jobs. They have also entered service occupations such as a nurse, a beautician, a sales worker, a waitress, etc.

Status of women in society: Women's were considered a weaker sex they were given a subordinate status in they Hindu society she is protected by the father in her childhood, by the husband in her adult hood & by the son in her old age. The male dominated paternal system allows her to survive as secondary member of the family & lower citizen society.

A women expected to daughter in her father-in-law household to which she goes after her marriage she is placed under severe restrictions and has little or no say in decision making and is directly subordinate to her mother-in-law. Her status in the family depend greatly on her husband's contribution to the family economy, and in the middle & upper-class, on the amount of dowry brought by herself.

They learn early in the life need for flexibility, adjustment & submissiveness and hesitate to develop strong opinion and commitment which they, may not be allowed to pursue after marriage. These constriction & inhibitions affected most women in their later over, particularly when they have to complete with men in their careers.

Women today are trying to understand their position in the society, women have become increasingly aware of

sexual inequalities in every sphere of life and are seeking ways to fight.

No decision is now made in matters of education between boys & girls, their voice is now are forceful & important as that of men. They are becoming equal partners in making or dismissing of government.

Women Empowerment still an illusion of reality: Notwithstanding the remarkable changes in the position women in free India there is still a great divergence between constitutional position and stark reality of deprivation & degradation.

Whatever whiff of emancipation has blown in Indian society, has been inhaled and enjoyed by the urban women, their population belonging to the rural a rear are still totally untouched by the coined of changes. They still have been living in miserable conditions, steeped in poverty, ignorance, superstition and starve.

They are still exists a wide gulf between the goals enshrined in the constitution, legislation policies, plans, programmers and related mechanism on the hand and the situational reality on the statior of women in India, on the other.

"You can tell the status of nation by looking at the status of its women" Pandit Nehru.

Equality & empowerment of women are the most critical points and gender equality is not an agenda of women versus men rather men should be partners in the empowerment of women.

Empowerment of women in any society is an important to enable women to participation in the economic & political development of society.

What is Empowerment?

Women empowerment is new phase in the vocabulary of gender literature; The phrase is used in two broad sensor i.e. general & specific. In general since. It refers to empowering women to see self dependent by providing them access to all the freedom and opportunities which they were denied in the part only because of their being 'Women' In specific sense 'women empowerment refers to enhancing their position in the power structure of society.



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Kessler Harris, 1981: "Women empowerment allows be appreciating & acknowledging for who they are and what they do". The empowerment essentially means that they women have the power or capacity to regular their day-to-day lives in the social political & economic terms a power which enable them to move from the periphery to the center state.

What are issues for this sorry state of affairs?

Some basic issues

- Lack of awareness
- Lack of social & economic empowerment
- Lack of political will
- Freeness of accountability Mechanism
- Lack of enforcement by the police force.
- Lack of gender culture.

Today women change from Feeling weak to feeling strong.

Ways to Empowered Women

1. **Create a safe space:** Women in to gather with other women and Talk about issues like gender equity, women's rights, or health.
2. **Support independence and mobility:** Most women in rural India have to ask their husbands for permission to leave home.
3. **Teach women to read:** If you are illiterate, simple things like reading signs on a road, numbers on a phone, or directions on a medicine bottle make daily life a struggle
4. **Increase savings and income:** Savings cooperatives allow women to invest money and then take turns receiving micro-loans to start micro-businesses or invest in education for their children.
5. **Teach job skills and seed businesses:** Women learn beekeeping, mushroom farming, sewing, and other income-generating skills through training programs.
6. **Build self-esteem and confidence:** helping them to become more comfortable speaking in front of groups and sharing opinions.
7. **Boost decision-making power:** they have greater decision-making power in their homes and communities.
"They were mostly busy doing household activities before... but now they can travel outside of the village alone, [earn an income] in our family, and participate in decisions related to their children's education."
8. **Impact health:** Increased influence in their families and communities on health care, family planning, domestic violence and reproductive rights. .
9. **Build networks:** By building social networks, women have more support and greater opportunities to effect change in their communities alone.

10. **Create public leaders:** provide leadership training for women to increase their presence in the public sphere. 61-65% of women report that they are now able to express their opinions in public or in their home. Women report joining committees, facilitating meetings, participating in protests, raising their voices against violence, and organizing community programs.

The Principles for women empowerment

1. Establish high-level corporate leadership for gender equality
2. Treat all women and men fairly at work - respect and support human rights and non discrimination
3. Ensure the health, safety and well-being of all women and men workers
4. Promote education, training and professional development for women
5. Implement enterprise development, supply chain and marketing practices that empower women
6. Promote equality through community initiatives and advocacy
7. Measure and publicly report on progress to achieve gender equality

Women is the source of Infinite Power: Maharshi karve worked ceaselessly with a missionary zeal for the upliftment of women. Maharishi Karve used to say "as for as the question of status and right of women are concerned, I will never accept defeat as I do not believe that women have a lesser capacity to learn."

Education enables women to effectively participate in the affair of the country and, indeed in their own family.

"The roots of Education are bitter, but the fruits are sweet Educate the Girl and change the Generation" Kiran Bedi

Female Education: Female Education is a process of Educating Females in order to make them efficient and effective members of society both at home and outside. It should enable them to look after and take care of their daily life duties and responsibilities as well as their legitimate rights. Thousand of girls otherwise intelligent and capable enough to get Education, but are deprived of because of multifarious social cultural and economical reasons and Gender prejudice. Due to this reason they are unable to play active role in the development of society

"If you Educate a boy, you Educate an individual, but if you Educate a girl you Educate a community"
African proverb

Different Role Of Women:

Family Role- A women Role extend from being an important member of family daughter-wife, and mother to being a determinant of social development and building Nation.

The capacity to contribute increases immensely when the family environment is stable.

A woman has been endowed with a special gift from nature to give tender love to her children's and family and to keep the cord of love strong amongst relations which binds the family into loving, healthy and cultured family there fore the English saying, "Good Created Mother because he could not be present every where."

Many of the approached & values in the life are learned by a child from the mother.

Women therefore are after described as transmitters of knowledge and architects of the future. Educated women tend to provide better guidance to their children and also promote education of their Girl children. Women contribute to the development of good family, compassionate society, a progressive nation and a more tolerant world. This role is very important in society, which women should never forget.

Social Role:- Educated women can be an effective voice for articulating women related causes. They can be the voice in the fight against social evils like female filicide, child marriage, dowry & addictions, as well as against the discrimination and biases that exists in society against women.

They can be the advances for improved working condition for women. Educated women can help other women self-reliant and self-confident. They can counsel other women as well as share experiences about career choice, employment opportunities and business enterprises and also in making like nutrition and childcare. If the women of India work in this collective and collaborative spirit, change would be inevitable and change would be that which recognize, in full measure, the talent and potential women.

Political Role- Women participation in the political and economic activities of a society enriches the fabric of a nation. Many women in India have reached high position and many others are doing well in different sphere and even in professions once unthinkable for women, I am however ever conscious about the constraints and difficulties that they face in realizing their full potential but women still do not have the same opportunities of men.

Conclusion: Women in the modern hi-tech society, which is moving very fast under the shadow of population explosion, conflicts, chaos and corruption can mould the personality of the adolescent & youth in a proper direction and perspective, provided the women are themselves empowered.

Women are in integral part of our society. The idea of human race can't be conceived without the existence of a woman. Women in the holy books have been bestowed with a very high status and have been adored with various objectives, she is called as mother of the nation and it is

said that education of the mother means education of entire family. Hence Empowered women for development of nation

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Attitude Of Pre-Service Student Teachers Towards Role Of Gender Equality In Upbringing Of Children.

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Abstract: The present paper aims to study the pre service student teacher's attitude towards gender roles on the basis of beliefs, values and equality. The final sample of the study comprised of 80 subjects, randomly selected from the B.Ed. course of Shri Shivaji college of education Amravati. Subjects were 20 males & 60 females pre service student teachers and all were graduates with the age group of above 21 years. A questionnaire was developed that measured attitudes toward gender equality of males and females (12 questions on equality), beliefs in various roles of males and females (8 questions of beliefs). The obtained data was analyzed by using t-test. Results revealed that there was significant difference in the attitudes of males and females pre service student teacher towards gender equality as females favored equality and did not believe in beliefs with which they have been born & brought up with as compared to males.

Keywords: Attitude, Gender Equality, Pre-service Student teacher, Gender, Gender Role

Introduction: Gender can be a key determinant of who does what, who has what, who decides, who has power, and even who gets an education or not. In many societies, boys are seen as the ones who should be educated, while girls are not. Traditionally, the man was the main breadwinner of the family whilst it was usually the woman's responsibility to look after the home. Looking after the home incorporated activities such as raising children, cleaning, cooking, looking after sick or elderly relatives. Before compulsory schooling was introduced education and religious upbringing also largely fell into the responsibility of the female head of the family, usually the mother.

Gender Inequality, in simple words, may be defined as discrimination against women based on their sex. Women are traditionally considered by the society as weaker sex. She has been accorded a subordinate position to men. She is exploited, degraded, violated, discriminated and expected to look after both home and work in outside world. This peculiar type of discrimination against women is prevalent everywhere in the world and more so in Indian society.

The term "gender inequality" refers to the perceived or actual unequal treatment of individuals based on their gender. Gender inequality arises out of cultural

differences in gender roles, which are socially constructed systems. While there are inherent biological sex-based differences between men and women, gender inequality is a form of social discriminations. Gender inequality is thought to show in a hierarchical view of genders, where the men are above the women, who are considered inferior and less valued by their gender. This involves a hierarchy of power. Gender equality in turn shows in equal value and opportunities for both genders. Gender inequality is present in most circumstances, and has been since ancient times. It is a theme that has been discussed thoroughly since the beginning of recorded interactions between men and women. Though at first sight it appears a sociological input, there are works that advocate for this matter to contain a sociobiological and evolutionary psychological background. Pragmatically, any idea is a product of education, so we shall consider how parenthood can contribute as a catalyst to this gender bias.

Objectives Of The Study: The objectives of the present are as follows:

1. To study attitude towards gender equality of pre service student teachers.
2. To study attitude of pre service student teacher towards upbringing of children.
3. To study views of pre service student teacher on impact of upbringing styles of children on gender role

Null Hypothesis: There is no significant difference between attitude of pre service student teacher towards gender equality and upbringing of children.

Review Of Related Literature: A child's earliest exposure to what it means to be male or female comes from parents (Lauer & Lauer, 1994; Santrock, 1994; Kaplan, 1991). From the time their children are babies, parents treat sons and daughters differently, dressing infants in gender specific colors, giving gender differentiated toys, and expecting different behavior from boys and girls (Thorne, 1993). One study indicates that parents have differential expectations of sons and daughters as early as 24 hours after birth (Rubin, Provenzano, & Luria, 1974).

Parents encourage their sons' and daughters to participate in sex-typed activities, including doll playing and engaging in housekeeping activities for girls and



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playing with trucks and engaging in sports activities for boys (Eccles, Jacobs, & Harold, 1990). Children's toy preferences have been found to be significantly related to parental sex-typing (Etaugh & Liss, 1992; Henshaw, Kelly, & Gratton, 1992; Paretii & Sydney, 1984), with parents providing gender-differentiated toys and rewarding play behavior that is gender stereotyped (Carter, 1987). While both mothers and fathers contribute to the gender stereotyping of their children, fathers have been found to reinforce gender stereotypes more often than mothers (Ruble, 1988).

Sanders (1997) highlights the role of teacher education and states that 'those learning how to teach today will be responsible for teaching the next two generations. If we want an environment in which girls and boys are treated, and treat each other, with respect and kindness, and in which girls as well as boys are urged and expected to fulfil their potential without restriction, then we must begin teaching about gender equity in our teacher education programs as a matter of course' (Sanders, 1997). Sanders emphasizes 'the social responsibility teachers have in their classrooms and towards their pupils and students.

Gender roles are considered by scholars to be social constructs that start at birth (Eagly, Wood, & Diekmann, 2000; Epstein, 1988). Children grow up and assimilate into a normalized feminine or masculine gender, influenced by family, mass-media, and teachers. Feminine and masculine gender roles are then reproduced throughout an individuals' life. Furthermore, masculine characteristics are globally more valued, favored, and preferred over feminine characteristics, which leads to sexism (Koenig, Eagly, Mitchell, & Ristikari, 2011). However, the degree of female undervaluation appears to change depending on the country. Accordingly, some societies may not give similar rights and opportunities to girls. Accordingly, some societies may not give similar rights and opportunities to girls and women - such as education, health care, nutrition or employment - that they give to boys and men.

Research Methodology:

Sample: Sample for the study comprised of 80 graduate pre service student teachers (B.Ed. students) with distribution of 20 boys and 60 girls from Shri Shivaji College of Education, Amravati using simple random purposive sampling technique.

Statistical Techniques Used: 't' test was applied to know the significant difference between the scores of attitude towards gender equality of pre service student teachers towards children upbringing.

Analysis and Interpretation of Data: The difference in the attitude towards gender equality of graduate females and males was calculated using t-test. The values obtained are mentioned below.

The t-value for difference in attitude towards gender equality of graduate boys and girls came out to be 2.98 which is significant at 0.01 level. The mean value for attitude towards gender equality of pre service female pre service student teachers (77.5) is more than the mean value for attitude towards gender equality of male pre service student teachers (49) and this difference is statistically significant.

Therefore, our null hypothesis stating, "There exists no significant difference in the attitude towards gender equality of pre service student teachers" stands rejected. It means pre service student teacher differ significantly in their attitude towards gender equality.

Conclusions:

- 1) In 21st-century Indian States culture, gender roles continue to be in a state of flux to some extent, although traditional gender roles still apply in many quarters. For example, boys are often encouraged to become strong, fast, aggressive, dominant, and achieving, while traditional roles for girls are to be sensitive, intuitive, passive, emotional, and interested in the things of home and family. However, these gender roles are culturally bound. Therefore, it must be assumed that culture and socialization also play a part in gender role acquisition.
- 2) Socialization is the process by which individuals learn to differentiate between what society regards as acceptable and unacceptable behavior and act in a manner that is appropriate for the needs of the society. The socialization process for teaching gender roles begins almost immediately after birth, when infant girls are typically held more gently and treated more tenderly than are infant boys, and continues as the child grows, with both mothers and fathers usually playing more roughly with their male children than with their female children. As the child continues to grow and mature, little boys are typically allowed to roam a wider territory without permission than are little girls. Similarly, boys are typically expected to run errands earlier than are girls. Whereas sons are told that "real boys don't cry" and are encouraged to control their softer emotions, girls are taught not to fight and not to show anger or aggression. In general, girls are taught to engage in expressive, or emotion-oriented, behaviors, while boys are taught to engage in instrumental, or goal-oriented, behaviors. When the disparity between the way they teach and treat their daughters and sons is pointed out to many parents, they often respond that the sexes are naturally different not only biologically but behaviorally as well.
- 3) The teaching of gender roles does not only come through obvious verbal teaching from parents and other elders in society; it also occurs in more subtle ways as well. Many people have observed that children's toys are strongly gender-typed. Girls are

often given "girl" toys such as dolls, play kitchens, and similar toys that teach them traditional, socially approved gender roles for when they grow up. Boys, on the other hand, are often given sports equipment, tools, and toy trucks, all of which help prepare them to act within traditional male gender roles. Even if nothing is ever said to children about the gender-appropriateness of these toys, research has shown that by the time they reach school age, many children have already come to believe that professions such as physician, pilot, and athlete are the domain of men, while women are supposed to have careers as teachers, nurses, secretaries, or mothers

- 4) Insensitivity to discriminatory behaviour towards girls may result from training them for obedience, excessive politeness at the expense of assertiveness, which is still widespread in the dominant model of social education. It's worth examining the awareness of students of both genders as to what they consider signs of cross-gender discrimination, and which behaviours that in fact are discriminatory, are justified by social approval.

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TO EVALUATE THE EFFECTIVENESS OF TEACHING THROUGH INDUCTIVE THINKING MODEL TO THE STUDENTS OF STANDARD IX IN AMRAVATI CITY

ABSTRACT

Various methods and techniques are working in teaching-learning process to achieve the objectives of learning outcome; but it seems difficult to achieve these objectives to perfection; merely depending upon these traditional practices. Models of teaching are used to obtain certain levels of learning objectives in the present pedagogical system. In the present scenario Inductive Thinking Model is working as an assumption in itself for teaching learning process. In the present investigation two pupil teacher of biology method from Shri Shivaji College of Education, Amravati and 66 students of class ix of Shri Shivaji Maratha high school have been selected. Experimental method has been applied for the present research. Two groups that are control group and experiential group were taught by traditional and Inductive Thinking Model respectively. Statistical tools such as mean, standard deviation and T value were used to analyze the data. It seems that Inductive Thinking Model is better than traditional teaching method. Students taught by Inductive Thinking Model found more motivated towards learning outcome. It is observed that students are more interested when taught by Inductive Thinking Model. Students also found motivated for self learning. Overall, it is found that Inductive Thinking Model works as an assumption in itself in the contemporary educational methods and laws.

INTRODUCTION-

In the teaching learning process the attainment of the learning objectives enhances the quality of education. We cannot say that only following the principles laid down by educational psychology leads us towards the perfecting of our educational goals. Because the marks gained by the students arises question towards our teaching-learning process. The continuous efforts in this direction by educationists and psychologists proved that though there is no perfect method of teaching to enhance the learning outcome but they developed some teaching models for this purpose.

Teaching methods can also be teaching models. To understand this we have to understand difference between teaching method and teaching model. In teaching methods factual variables and their correlation is taken into account; whereas a model is evaluated on the basis of its usability to create visual experience. It is difficult to make generalization on the basis of models because they are not based on factual

experiences. Every teacher applies his own strategy to obtain the specific objective according to the content. However teaching strategy provides the base for teaching models.

Teacher plans his lesson according to his objectives of learning outcome. For this he takes in to consideration the interest and capabilities of his students. He plans and creates learning atmosphere in such a way so that teaching learning process go through in a logical way. Teacher takes into consideration all the factual data so that teacher and students work on a similar platform.

Inductive Thinking Model is useful to develop intellectual process of students during the process of teaching and learning in the classroom. The thinking process works on two levels that are abstract and concrete. Concrete concepts are related to thinking process in which learner can give specific information, correlate the situation, compare and give factual information. Whereas making generalization, prediction with proper

analysis and giving logical examples can be termed as abstract concept formation.

THINKING PROCESS GROUP

In this thinking process all the elements from concept formation to problem solving are taken in to account.

BENEFITS OF INDUCTIVE THINKING MODEL

- 1) To stimulate the thinking process of students.
- 2) Classify the things on the basis of similarity and difference.
- 3) Students are motivated for self learning

NECESSITY AND IMPORTANCE OF THE TOPIC

To motivate and to make the students think creatively, this model proved very useful. Students can compare and retain the content for a long time. To understand the value of Inductive Thinking Model it is necessary to teach with this model. Minute study of this model will lead us towards choosing right teaching methods.

OBJECTIVES OF THE STUDY

- 1) To prepare lesson plan by traditional method and by Inductive Thinking Model to teach Biology to std. IX students
- 2) To teach by traditional teaching method
- 3) To teach by Inductive Thinking Model
- 4) To study the Effectiveness of Inductive Thinking Model for teaching biology.

RESEARCH VARIABLES

- 1) Independent variable - Inductive Thinking Model
- 2) Dependent Variable - learning outcome
- 3) Controlled variable - medium of teaching limit of time, and content.

HYPOTHESIS

It is hypothesized that Inductive Thinking Model is more useful than traditional teaching methods.

SCOPE AND LIMITATION

For the present investigation two pupil teacher of Shri Shivaji College of education, Amravati and 66 students of class IX from Shri Shivaji Maratha high school were selected.

RESEARCH METHOD

Experimental method is used for present investigation. Firstly pupil teacher were made aware thoroughly about Inductive Thinking Model then the students from Shri Shivaji Maratha high school of class IX were divided into two groups of 33 students each. The first group was taught by traditional method and another group was taught

by Inductive Thinking Model. Then a test was administered to check the learning outcome. The following data is found after statistical analysis.

following data is found after statistical analysis						
No. of Students	Teaching by Traditional method		Teaching by Inductive Thinking Model		T Value	T value significance
	Mean	SD	Mean	SD		
33	47.7	4.0	53.2	3.8	5.67	Significantly more
	6	2	7	8		

ANALYSIS AND CONCLUSION

The difference in mean is found after comparing the data of controlled and experimental group. The 'T' value found (5.67) significantly more on 0.05 scales.

CONCLUSIONS MADE BY OBSERVATIONS.

- 1) Students found more involved while teaching through Inductive Thinking Model
- 2) Students learned the topic on their own due to thinking involvement
- 3) Students were found motivated towards learning and they themselves were motivating other students
- 4) Inductive Thinking Model is very much useful to teach biology.

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A STUDY OF CREATIVITY IN PROFESSIONAL COLLEGE STUDENTS

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ABSTRACT—

Creativity is a potentiality which influences human activity in almost all spheres of life. Adolescence is transition period between childhood and adulthood. An adolescent is eager to interact with new experiences to find new relationships. The purpose of the study was to measure and compare creativity in adolescent students of Professional colleges.



The sample of 800 First year graduation adolescent students of medical and Engineering colleges were selected randomly for the study. Data collected by descriptive survey method. Bagar Mehdi's verbal test of creative thinking was used for analyse the data. The study concluded that male and female students of medical colleges were more creative than the male and female

students of Engineering Colleges respectively.

KEY WORDS: childhood and adulthood .

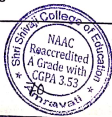
INTRODUCTION :

Creativity means literally 'create' 'creation' or 'creative force' and power to create new works. It is relatively a new concept, especially linked with the concept of imagination (Nami et al 2014) Creativity is an ability to think about things in new ways to achieve unusual and unique solutions in problems (Saif 2008). Every day we face new challenges in all aspects of life and creativity is not only a means for adopting with changes but also a stimulus for producing knowledge in different fields of study.

Creativity is that act or ability to create something new through imaginative skills. It is a mental process involving the generation of new ideas. Creativity is finding concepts or association between existing and new concepts or rearranging what is known in order to find out what is not known (Arya et al 2016). The creative process takes place in the thought. Creative thinking has two aspects divergent thinking and convergent thinking. A creative person requires passion and commitment, fresh way of looking at things, an understanding of people and an entrepreneurial willingness to take risk and work hard, ability to convince people that new ideal is good or better.

Creativity is important in everyday life because it makes life infinitely interesting and fulfilling. Creativity is a way of living life that embraces originality and makes unique connections between seemingly disparate ideas. Creativity is about living life as a journey into seeing and communicating the extraordinariness of simplest, most every day acts. Creativity expands perceptions and along with expanded perceptions come new ways of problem solving.

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Creativity is the capacity or ability of an individual to create, discover or produce a new or novel idea or object, including the rearrangement or reshaping of what is already known to him which proves to be a unique personal experience creator. It is the potential which influences human behavior in scientific, technical and artistic fields. Creativity is one of the highest gifts that nature has fast owed on mass. Creativity enhances the capacity to make changes in the surroundings. In fact it is creativity which helped society in its evaluation from the animal life to the present development. This is stage revolutionary

Adolescence is transition period between childhood and adulthood. Adolescence is the time when period of growing up. During which child is developed into man and women. Adolescence is the time when the surge of life reaches its highest peak. The adolescence is eager to interact with new experiences to find new relationships to combine resources of inner ability. Creativity is a critical aspect of person's life stating from embryonic existence onward through adulthood.

Creativity begins in adolescence with the development of abstract thinking capacity together with the creative janurian homespatial and sep-con articulation processes. The adolescent task feature of rebelliousness in an intrinsic pact of attempts at independence from parents for creatively motivated adolescents, opposition has divergent innovative effects and it is preserved as a basis for cognitive opposite dispositions that are incorporated within the janusian process.

Adolescence is marked by bodily changes for both females and males. Body and sensation pre occupations as well as spatial alterations form a basis during adolescence for flexible orientations to space, and the use of mental superimpositions and interpositions of the homospatial process.

Creative identity, the sense of oneself as a creative person, tends to start in adolescence and continue throughout life. This identity serves as a direct motivating factor for the acquisition of necessary skills and the pursuit of creative endeavour. Successful creation requires healthy psychological process and the flower of health adolescent development.

Adolescents do produce effective poetry and creative writing that may or may not continue throughout life. Other types of creativity that begin in adolescence are manifested in visual artistic pursuits, musical performance and composition, aspects of abstract and formal thinking capacities and technical pursuits and exploration. These all develop rapidly during this period. Creative writing especially is often focused on personal feelings, ideas and experiences and dramatizes and constantly changing and developing inner sense of self and identity. Hence an investigator made an attempt to measure the creativity among adolescents.

OBJECTIVES

- ❖ To measure the creativity of adolescent in various professional colleges.
- ❖ To compare the creativity of adolescents in various professional colleges.

HYPOTHESES

- ❖ There is no significant difference between the creativity among the male students of medical and engineering colleges.
- ❖ There is no significant difference between the creativity among the female students of medical and engineering colleges.

METHODOLOGY

Method

The present research based on survey method particularly the descriptive survey research.

Sample

The sample comprised of 800 students of first year of graduation in which 400 Medical (200 male + 200 female) college students and 400 Engineering College students (200 male + 200 female) were selected randomly from the medical and engineering colleges of Amravati University.

Tool

Baqer Mehdi's Verbal Test of Creative Thinking (1985) was used to measure the factors of creativity like fluency, flexibility, originality and total creativity of the students.

Statistical Analysis

Both the descriptive and inferential statistics were employed for analysis of data. The descriptive statistics such as Mean and standard deviation were used.

Inferential statistics such as 't' test was employed 't' value was calculated to know the significant difference between the creativity of male and female students of medical and engineering colleges.

Analysis of Data**Testing of H_{01}**

There is no significant difference between the creativity among the male students of medical and engineering colleges.

Table 1 : Showing the significance of difference between the creativity among the male students of medical and engineering colleges.

medical and engineering colleges.						
Variables	Male students				't' value	Level of significance 0.05
	Medical (200)		Engineering (200)			
	Mean	S.D.	Mean	S.D.		
Fluency	44.63	14.27	31.54	9.79	12.31	Significant
Flexibility	29.95	6.40	21.80	6.29	12.82	Significant
Originality	13.92	8.82	5.87	4.84	11.31	Significant
Total Creativity	90.50	26.27	59.22	18.70	13.71	Significant

From the table 1 the mean scores of the male student of medical and engineering colleges on the measure of fluency were found to be 44.63 and 31.54 and their corresponding S.D. were found to be 14.27 and 9.79 respectively. The 't' value was found to be 12.31 which is significant. Hence it may be concluded that male students of medical colleges with their significantly high mean score possessed significantly greater fluency than male students of Engineering Colleges.

Comparison between male student of medical and Engineering college on the measure of flexibility, originality and total creativity calculated the 't' values were found to be 12.82, 11.31 and 13.71 respectively which were more than the table value 1.96. Hence H_{01} was rejected.

It is inferred that there was a significant difference between the flexibility, originality and total creativity among the male students of medical and engineering colleges.

It is concluded that male students of medical colleges were much creative than male students of engineering colleges.

Testing of H_{02}

There is no significant difference between the creativity among the female students of medical and engineering colleges.

Variables	Female students				't' value	Level of significance 0.05
	Medical (200)		Engineering (200)			
	Mean	S.D.	Mean	S.D.		
Fluency	40.99	16.16	34.90	12.11	4.26	Significant
Flexibility	27.22	8.09	24.62	6.69	3.63	Significant
Originality	12.21	8.81	8.83	6.07	4.46	Significant
Total Creativity	80.42	29.74	68.26	22.05	4.64	Significant

From above table 2 the mean scores of the female students of medical and engineering colleges on the measure of fluency were found to be 40.99 and 34.90 and their corresponding S.D. were found to be 16.16 and 12.11 respectively. The 't' value was found to be 4.26 which is significant at 0.05 level of significance. Hence it may be concluded that female students of medical colleges with their significantly high mean score possessed significantly greater fluency than female students of Engineering Colleges.

Comparison between the female students of medical and Engineering colleges on the measure of flexibility, originality and total creativity the calculated 't' values were found to be 3.63, 4.46 and 4.64 respectively which were more than the table value 1.96. Hence H_0 was rejected.

Therefore, it is inferred that there was a significant difference between the fluency, flexibility, originality and total creativity among the female students of medical and engineering colleges.

It is concluded that female students of medical colleges were more creative than female students of engineering colleges.

CONCLUSIONS

- Male students of medical colleges were more creative than the male students of Engineering colleges.
- Female students of medical colleges were more creative than the female students of Engineering colleges.

SUGGESTIONS

Creativity is a valuable skill and there are common strategies teachers can use to help students to develop it.

- Plan and frame curriculum and provide tools that give students options, voice and choice in order to enable them to be creative.
- Remove constraints for creativity and give the students space and a framework in which they can be creative.
- Teach student how think than what to think.
- Foster a question friendly environment help students develop the habit of asking why questions.
- Practice generating more ideas.
- Encourage new skills.
- Model creativity in the classroom. To help students unleash more creativity, lead by example and openly share original ideas with the class.
- Use the Jigsaw classroom method. Allow students to do some work on there own.
- Visualize goals with timelines.
- Team build exercises.
- Challenge advanced students with extension projects.
- Rewards and recognition are key to motivating students.
- Encourage discussion.

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leveraged by all the Universities and colleges, J.C. Aggarwal, (2006)[4]. Quality must be built into each design and each process. It cannot be created through inspection. However, it should be a onetime activity and is also to be continuously modified. So far teacher education is concerned, NCTE has come out with a changed structure of various teacher education programmes with several new and innovative components and it is our responsibility to ensure that all these components are efficiently integrated with the academic audit process, The University and its affiliated colleges will make all efforts to ensure it.

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Student's of Personal Values in relation to their Self concept

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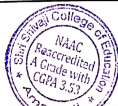
Abstract

Values are collective conceptions of what is considered good, desirable and proper or bad, undesirable and improper in a culture. The term self concept is a general term used to refer to how someone thinks about, evaluates or perceives themselves. To be aware of oneself is to have a concept of oneself. Students who demonstrated patterns of low academic value and low academic self concept often tend to perform poorly in school (Gans, Kenny & Ghany 2003). The purpose of the study was to investigate the relation between students' personal values with their self concept. The sample of 800 students selected randomly from the 10 State Board Schools of Amravati District. Data collected by descriptive survey method. Personal value questionnaire constructed by Dr. Mrs. G.P. Sherry, Dr. R.P. Verma and Rajkumar Saraswat's self concept questionnaire were used as a tool for data collection. Mean, S.D. and co-efficient of co-relation (r) were used to analyse the data. The study concluded that there was negative and negligible relationship between self concept with personal values such as Religious, Social, Democratic, Aesthetic, Economic, knowledge, Hedonistic, Power, Family prestige and health value of State Board students.

Introduction

The term self concept is a general term

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used to refer to how someone thinks about, evaluates or perceives themselves. To be aware of oneself is to be have concept of oneself. According to Baumeister (1999) "Self concept is the individual's belief about himself or herself, including the person's attributes and who and what the self is."

Self concept is defined as a value that an individual places on his or her own characteristics, qualities, abilities and actions (Woolfolk 2001). Self concept is not innate but is developed and constructed by the individual through interaction. The aspect of self concept is important because it indicates that it can be modified or changed (Franken 1994). The way an individual views himself accounts to a large extent for his success.

Our self concept is important because it influences how we think, feel and act in every day organizational life. Understanding the self concept is particularly important for managers because self knowledge helps managers "understand why they do the things they do and how their beliefs and behaviours affect themselves, others and the organization for better and worse.

Values are ideas that guide us in action. In this they are similar to plans, goals, fears, intentions, policies etc and the like. All these are ideas which guide us in action. Among these ideas, values alone concern the manner of our actions rather than the consequences (as with plans, goals and fears) or the mere fact of their performance (as with intentions and policies). Values guide us not just in action but also in planning and goal setting. Our goals, plans, policies etc are all justified in terms of our values. Values are also updated due to new information, like when we are exposed to previously unknown consequences of choice. A person explains most of their actions by using their values. This explanation is called 'giving a reason' for your action. And the ability to give reasons that make sense to other people

(usually by referring to values) is called 'being rational'.

Our values helps us achieve clarity regarding why we do, what we do and accordingly stay and track and live a consistent life. All our actions and decisions are affected by our values. Anthony Robins, in his books titled 'Awaken the Giant Within' states that values guide our decision and therefore our destiny. The person who knows his values and live by them becomes the leader of our society. Values are as important as competencies to achieve our goals knowing others. Value is equally important to understand their behaviour and the causes behind it, their decision making by understanding their values. Terminal values provide us a sense of fulfillment, richness and reward.

At the present time moral values are as important as scientific and technological activities and progress made by science and technology improves the conditions of our material life. Certainly the moral values in today's generation are lacking and generations will be confused about their ethics. The adolescents are the future of tomorrow, so the lack of moral values especially among this important section of the society is a serious issue. The root cause of the lack of moral values among adolescents is the disturbances in their families as family is the key factor behind moral crises because children acquire moral values from the family. Now the changes in our economic and social system after the advent of globalization, negatively influences the adolescents moral developments.

Saraswat R. (1982) in his study concluded that boy's self concept was positively and significantly related to political and religious values while the girl's self concept was not related to any of these values. Kulshreshtha R. (1983) investigated that value orientations affected the concept of self in adolescent. Value orientations had a positive affinity with self

concept among male as well as female adolescents under different level of interest. Maya Benish, Ellas Daniel and Kristina L. McDonald (2019) found that self esteem related negatively to self enhancement values and positively to conservation values using zero order correlations.

Students who come to value and engage in tasks will develop a greater sense of positive self concept of abilities and thus an expectancy to succeed (Eccles 2005, Deci & Ryan 1985, Eccles et al. 1983, Harter 1983). Self concept can be considered as a key component of value because of their validity in predicting effect, task choice and persistence (Metallidou & Vlachou 2007). Thus in order to understand student value and its influence on student learning it seems important to take into account other aspects of value, such as students self concept belief. Spinath and Spinath (2005) conducted a study that examined the link between students value and self concept. The results indicated that both self concept and value decreased across the school year. In addition, value and self concept were shown to be moderately to strongly correlated with each other.

Narayanan, Santha Kumar, Sajjan Rao and Gopu Kumar (1994) found that self concept, self respect are assigned high ranks by Indian business students and business students of Singapore with regard to the way they given importance to values. Both the groups attach least importance to values like caste, politics and relatives.

Nisha (1991) concluded that adolescents high on alienation differed significantly from those who were low on alienation on the score for all the dimensions of personality, aesthetic values and self esteem.

There is a significant relationship between self concept and values among higher secondary students.

Keeping fact in view the present study aimed to find out the relationship between

personal values and self concept of students.
Objective

To investigate the relationship between personal values and self concept of students.

Hypothesis

There is relationship between the types of personal values dimensions like religious, social, democratic, aesthetic, economic, knowledge, Hedonistic, Power, Family and Health value and self concepts of the State Board students at Amravati District.

Method

The present study is based on survey method. This research can be located in a descriptive co-relational research.

Sample

Research sample comprised of 800 students (400 male + 400 female) who were randomly selected from the 10 State Board schools of Amravati district. The sample profile is given in Table 1.

Tool

The self concept questionnaire developed by Raj Kumar Saraswat was used to find out the self concept among the state board students. In the questionnaire 6 dimensions and 48 item (Each dimension has eight questions) were included to measure the self concept. The dimensions are physical, social, intellectual, moral, educational and temperamental. The test-retest reliability of the questionnaire was found to be .91 for the total self concept.

Personal value questionnaire constructed by Dr. Mrs. G.P. Sherry and Dr. R.P. Verma was used to measure the personal values among the state board students of Amravati District. The questionnaire contained 40 questions divided between the 10 types of dimensions of personal values such as religious, social, democratic, aesthetic, economic, knowledge, hedonistic, power, family prestige and health value. The test-retest reliability for overall dimensions was nearly .60.

Statistical Techniques

Both descriptive and inferential statistics were employed for analysis of data. The descriptive statistics such as Mean and S.D. were used.

Inferential statistic such as person product moment co-relation co-efficient was used to know the co-relation between the types of personal values and self concept of state board student.

Analysis of the Data

Table 1 : Showing the descriptive analysis of the self concept and dimensions of personal values of state board students.

Students	Male 40		Female 400	
	Mean	S.D.	Mean	S.D.
Total self concept	129.3	16.15	145.45	16.17
Religious value	10.70	4.68	10.67	4.73
Social Value	10.58	4.74	9.87	4.02
Democratic value	14.19	6.36	12.88	4.62
Aesthetic value	11.93	4.78	12.53	4.70
Economic value	13.85	5.12	13.94	4.76
Knowledge value	13.7	4.67	13.66	4.69
Hedonistic value	12.54	4.86	11.40	4.65
Power value	12.76	4.17	12.62	4.53
Family Prestige value	9.78	4.11	12.24	4.73
Health Value	10.04	4.28	11.66	5.15

Table 2 : Showing the correlation between the types of personal values and self concept of state board students.

Variables Dimensions of Personal values self concept	Number of Students	Obtained (r)	Level of significance 0.05
Religious value	800	-0.02	Not significant
Social Value	800	-0.01	Not significant
Democratic value	800	-0.003	Not significant
Aesthetic value	800	-0.03	Not significant
Economic value	800	-0.01	Not significant
Knowledge value	800	-0.060	Not significant
Hedonistic value	800	-0.09	Not significant
Power value	800	-0.01	Not significant
Family Prestige value	800	-0.003	Not significant
Health Value	800	-0.02	Not significant

For 798 df. Table value of 'r' is 0.062

From the above table it is observed that for 798 degree of freedom the obtained correlation co-efficient (r) between self concept with religious, social, democratic, aesthetic, economic, knowledge, Hedonistic, power, family prestige and health value is - 0.02, - 0.01, - 0.003, - 0.03, - 0.01, - 0.06, - 0.09, - 0.01, - 0.003, - 0.02

respectively which are negative and not significant at 0.05 level of significance.

Therefore it is inferred that there is negative and negligible relationship between self concept with religious, social, democratic, aesthetic, economic, knowledge, hedonistic, power, family prestige and health value of state board students

Conclusion and Suggestions

The study aimed to investigate the relationship between self concept with dimensions of personal values among the state board students of Amravati District. It is concluded that there is negative and negligible relationship between self concept and personal values, dimensions.

Since the parents, teachers and students is of great importance in the evaluation of self concept and personal values, therefore educational application in the form of suggestions for parents, teachers and schools is offered.

Teacher and parents should always behave according to good values so that students learn to behave like that without any confusion.

Curriculum should be very practical and value oriented.

There should be value counseling sessions in each school so that students get proper guidance in any value conflict.

Schools should carry out different activities to trace out hidden values in students and strengthen various value such as health value through sports competitions and counseling about food habits.

Teacher and parents should never talk in a way with students, which is harmful for their self concept.

School should arrange different socially interactive activities to strengthen self concept of students.

Students should work to improve their moral and temperamental self concept.

Adolescents views should be taken into consideration in any decision making procedure by the family members as well as by the teachers.

In a rapid changing world, the cultivation of an all round personality, sensitive to problems in environment is important, vital and necessary. A special care and personalized support system is therefore, imperative to nourish the potentialities of students. Hence for positive self concept development among students, Parents and teachers can through the medium of meaningful relationship, be significant and should recognize the child's efforts and let them know that you have confidence in their ability to do well.

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TO STUDY THE EFFECTIVENESS OF LECTURE METHOD AND DISCUSSION METHOD FOR HISTORY TEACHING

ABSTRACT

Teaching is the most difficult task. In order to make children learn effectively the teacher has to adopt the right method of teaching. Teaching is not a mechanical process. It is an intricate, exacting and challenging job. There are various methods of teaching for various subjects. History subject is called a mother of social sciences. Lecture method is the oldest method of teaching history. Discussion is an ordered process of collective decision making. It is a sharing and weighing of all sides which are as many as there are conflicting interest or values. The purpose of the research was to study and compare the effectiveness of lecture method and discussion method for history teaching. The sample of 100 students comprised of 50 male and 50 female student of IXth Std. selected randomly from school of Amravati city. Teacher made test was used as a tool for data collection. Mean, S.D. and 't' value were used to analysis of data. The research concludes that discussion method is more effective than lecture method for history teaching.

Introduction :

Today the world is passing through rapid changes. In such a world, education cannot resist change. The imperatives of new times, new demands and new visions require an education of such quality as never was visualized in human history. It is being realised that education is a concept philosophically evolved psychologically developed and socially based. These bases of modern education has arisen a number of significant trends in teaching and learning practices.

During the past few decades a spirit of change and innovation pervades educational activities in many parts of the world. One of the most significant trends in today's school is the encouragement of creativity. Children are helped to set their goals, plan their own activities, work in groups in which opinions can be shared.

Need and significance of the problem :-

History subject is said to be the 'Queen' or 'Mother' of the social sciences. It has become a scientific study dealing with the whole truth and nothing but the truth. It is the study of totality of human behavior. It has broadened its scope and more attention is given to the common people as well as leaders in a public life. So the history teacher must be fully with the different methods of teaching because it is teaching method that determines the quality of results and value inclusion.

Discussion is one of the most valuable method is teaching of history. It is in fact, social action in its purest form the solution of a problem through the establishment of agreement or consensus. Ideas are initiated, there is exchange of opinion accompanied by a search for its factual basis. It activates thinking along the lines of self evaluation. It is valuable in that it represents a type of intellectual team work resting on the philosophy and principle that the pooled knowledge, ideas and feelings of several persons have greater merit than those of a single individual. Discussion helps children crystallize their thinking, helps identify concepts. Lecture method is oldest method of teaching history. Lecture fixes the attention of the pupils on the significant details. A few minutes lecturing can help to clarify matter and save valuable time.



Principal

Through lecture the teacher can very well guide the pupil by summarizing the main points. It is one of the best way of presenting additional materials. The need of right method of teaching cannot be underestimated in an ideal system of education. Hence an investigator made an attempt to study the effectiveness of lecture method and discussion method for teaching of history subject.

Objectives :

1. To study the effectiveness of lecture method for history subject teaching.
2. To study the effectiveness of discussion method for history subject teaching.
3. To compare the effectiveness of lecture method and discussion method for history subject teaching.

Hypothesis :

There is no significant difference between the effectiveness of lecture method and discussion method for teaching of history subject.

Design of the study:

In the present study experimental method was used.

Sample :

The sample comprised 100 students (50 male + 50 female) studying in IXth std. of were selected randomly for the study.

Tool :

Teacher made test was used.

Statistical Analysis :

Both the descriptive and inferential statistics were employed for analysis of data. The descriptive statistics such as Mean and Standard deviation were used.

Inferential statistics such as 't' test was employed 't' value was calculated to know the significant difference between the effectiveness of lecture method and discussion method for history subject teaching.

Analysis of Data :

Table - 1 : Comparison between the means of score of lecture method and discussion method :

Group	No of students	Mean	S.D.	t Value	Level of significance	
Lecture Method	50	13.12	2.05	11.13	0.05	0.01
Discussion Method	50	17.24	1.79		significant	significant

The above table shows that for 98 df : 0.05 and 0.01 level of significance the calculated 't' value is 11.13 which is more than the table value 1.98 and 2.63j respectively.

Therefore it is inferred that significant difference found in between the means of score of lecture method and discussion method.

Table - 2 : Comparison between the means of score of lecture method and discussion method obtained by male students

Group	No. of students	Mean	S.D.	t Value	Level of significance	
Lecture Method (Male student)	25	14.08	1.71	9	0.05	0.01
Discussion Method (male student)	25	17.68	1.15		significant	significant

The above table shows that for 48 df : 0.05 and 0.01 level of significance the calculated 't' value is 9 which is more than the table value 2.01 and 2.68 respectively.

Therefore it is inferred that significant difference of lecture and discussion found in between the means of score of lecture and discussion method obtained by male students.

Table - 3 : Comparison between the means of score of lecture and discussion method obtained by the female students

Group	No. of student	Mean	S.D.	t' value	Level of significance	
Lecture Method (Female student)	25	12.16	1.97	8.14	0.05	0.01
Discussion Method (Female student)	25	16.8	2.17		significant	significant

The above table shows that for 48 df : 0.05 and 0.01 level of significance the calculated 't' value is 8.14 which is more than the table value of 2.01 and 2.68 respectively.

Therefore it is inferred that significant difference found in between the means of score of lecture and discussion method obtained by he female students.

Table - 4 : Comparison between the means of score of male students in lecture method group and female students in discussion method group

Group	No. of students	Mean	S.D.	t' value	Level of significance	
Lecture Method (Male student)	25	14.08	1.71	5.13	0.05	0.01
Discussion Method (Female student)	25	16.8	2.17		significant	significant

The above table shows that for 48 df : 0.05 and 0.01 level of significance the calculated 't' value is 5.13 which is more than the table value of 2.01 and 2.68 respectively.

Therefore it is inferred that significant difference found in between the means of score of male students in lecture method group and female student in discussion method group.

Table - 5 : Comparison between the means of score of female students in lecture method group and male students in discussion method group.

Group	No. of student	Mean	S.D.	t' value	Level of significance	
Lecture Method (Female student)	25	12.16	1.97	12.54	0.05	0.01
Discussion Method (Male student)	25	17.68	1.15		significant	significant

The above table shows that for 48 df : 0.05 and 0.01 level of significance the calculated 't' value is 12.54 which is more than the table value of 2.01 and 2.68 respectively.

Therefore it is inferred that significant difference found in between the means of score of female students in lecture method group and male students in discussion method group.

Finding :

There is significant difference found in between the means of score of lecture method and discussion method. Hence it is concluded that discussion method is more effective for teaching history subject than lecture method.

Conclusion :

The modern education is a revolt against the bookishness of the past. The child is placed on the pedestal of glory and the teacher's position in this respect has altogether changed. Methods of instruction and contents of instruction have also undergone profound changes and have become new and novel. Instead of inculcating a dull reception, an uncritical acceptance and a passive spectatorship, the new methodology encourages active perception, active thinking and active acting.

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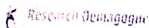
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LIFE SKILL DEVELOPMENT THROUGH SCHOOL CURRICULUM

ABSTRACT

Morality education is not a new idea but has been in existence parallel with education. The history of education in all countries in the world proves that education has two significant objectives: help the younger generation become more intelligent and makes them better. Educating a citizen intellectually but not morally will be a threat to the society. So, educating life skills is not less important than theoretical teachings. The process of developing social character, morality and sentiment of the pupils is as important as the formation and development of knowledge.

DEFINITION OF LIFE SKILLS :

"The four pillars of learning - learning to know, learning to do, learning to be and learning to live together and defines life skills as personal management and social skills which are necessary for adequate functioning on an independent basis."(UNICEF-2001)

DEFINING LIFE SKILLS:

Life skills are abilities for adaptive and positive behavior, that enable individuals to deal effectively with the demands and challenges of everyday life. Described in this way, skills that can be said to be life skills are innumerable, and the nature and definition of life skills are likely to differ across cultures and settings. However, analysis of the life skills field suggests that there is a core set of skills that are at the heart of skills-based initiatives for the promotion of the health and well-being of children and adolescents. These are listed here:



LIFE SKILLS GENERALLY FALL UNDER THREE CATEGORIES :

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1. Social and interpersonal skills (including communication, refusal skills, assertiveness, and empathy)
2. cognitive skills (including decision making, critical thinking and self-evaluation)
3. emotional coping skills (including stress management and increasing an internal locus of control).

OBJECTIVES OF RESEARCH PAPER :-

- To Discuss Concept of Life Skills.
- To Explain the Importance of life Skill at School Level
- To Suggest the Action Programme to develop the Students Life Skills.

KEY TERMS USED :

Life Skills, Action Programme to develop a Life Skills.

RESEARCH METHODOLOGY :

The present Research paper is base on secondary data. While preparing the research paper various references, Journals and books have been use. The detailed list is given at the end of the paper.

MAIN COMPONENTS OF LIFE SKILLS :

The skills referred to in the skills-based approach to health education include both the practical skills associated with specific health behaviours and life skills. A suggested framework for skills-based programmes could therefore aim at developing competencies in the four following areas: knowledge and critical thinking skills (learning to know), practical skills (learning to do), personal skills (learning to be) and social skills (learning to live together). The practical skills are



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the manual skills under learning to do, and the psycho-social life skills are the skills under learning to know, to be and to live together. A life skills approach to education is one that teaches an essential combination of skills needed in a particular and specific context, both practical and life skills.

DECISION MAKING:

Decision making helps us to deal constructively with decisions about our lives. This can have consequences for health if young people actively make decisions about their actions in relation to health by assessing the different options, and what effects different decisions may have.

PROBLEM SOLVING:

problem solving enables us to deal constructively with problems in our lives. Significant problems that are left unresolved can cause mental stress and give rise to accompanying physical strain.

CREATIVE THINKING:

Creative thinking contributes to both decision making and problem solving by enabling us to explore the available alternatives and various consequences of our actions or non-action. It helps us to look beyond our direct experience, and even if no problem is identified, or no decision is to be made, creative thinking can help us to respond adaptively and with flexibility to the situations of our daily lives.

CRITICAL THINKING:

Critical thinking is an ability to analyze information and experiences in an objective manner. Critical thinking can contribute to health by helping us to recognize and assess the factors that influence attitudes and behavior, such as values, peer pressure, and the media.

EFFECTIVE COMMUNICATION:-

Effective communication means that we are able to express ourselves, both verbally and non-verbally, in ways that are appropriate to our cultures and situations. This means being able to express opinions and desires, but also needs and fears. And it may mean being able to ask for advice and help in a time of need.

INTERPERSONAL RELATIONSHIP SKILLS:-

Interpersonal relationship skills help us to relate in positive ways with the people we interact with. This may mean being able to make and keep friendly relationships, which can be of great importance to our mental and social well-being. It may mean keeping good relations with family members, which are an important source of social support. It may also mean being able to end relationships constructively.

SELF-AWARENESS:-

Self-awareness includes our recognition of ourselves, of our character, of our strengths and weaknesses, desires and dislikes. Developing self-awareness can help us to recognize when we are stressed or feel under pressure. It is also often a prerequisite for effective communication and interpersonal relations, as well as for developing empathy for others.

EMPATHY:

Empathy is the ability to imagine what life is like for another person, even in a situation that we may not be familiar with. Empathy can help us to understand and accept others who may be very different from ourselves, which can improve social interactions, for example, in situations of ethnic or cultural diversity. Empathy can also help to encourage nurturing behaviour towards people in need of care and assistance, or tolerance, as is the case with AIDS sufferers, or people with mental disorders, who may be stigmatized and ostracized by the very people they depend upon for support.

COPING WITH EMOTIONS:

Coping with emotions involves recognizing emotions in ourselves and others, being aware of how emotions influence behavior, and being able to respond to emotions appropriately. Intense emotions, like anger or sorrow can have negative effects on our health if we do not react appropriately.

COPING WITH STRESS:

Coping with stress is about recognizing the sources of stress in our lives, recognizing how this affects us, and acting in ways that help to control our levels of stress. This may mean that we take action to reduce the sources of stress, for example, by making changes to our physical environment or lifestyle. Or it may mean learning how to relax, so that tensions created by unavoidable stress do not give rise to health problems. The life skills described above are dealt with here in so far as they can be taught to young people as abilities that they can acquire through learning and practice. For example, problem solving, as a skill, can be described as a series of steps to go through, such as: 1) define the problem; 2) think of all the different kinds of solutions to the problem; 3) weigh up the advantages and disadvantages of each; 4) choose the most appropriate solution and plan how to realise it. Examples of lessons designed to facilitate life skills acquisition are included in the appendix to this document.

Inevitably, cultural and social factors will determine the exact nature of life skills. For example, eye contact may be encouraged in boys for effective

communication, but not for girls in some societies, so gender issues will arise in identifying the nature of life skills for psychosocial competence. The exact content of life skills education must therefore be determined at the country level, or in a more local context. However, described in general terms, life skills are being taught in such a wide variety of countries that they appear to have relevance across cultures.

ACTION PROGRAMME TO DEVELOP THE LIFE SKILLS AT SCHOOL LEVEL:-

In life skills education, children are actively involved in a dynamic teaching and learning process. The methods used to facilitate this active involvement include working in small groups and pairs, brainstorming, role play, games and debates.

A life skills lesson may start with a teacher exploring with the students what their ideas or knowledge is about a particular situation in which a life skill can be used.

The children may be asked to discuss the issues raised in more detail in small groups or with a partner. They may then engage in short role play scenarios, or take part in activities that allow them to practice the skills in different situations - actual practice of skills is a vital component of life skills education. Finally, the teacher will assign homework to encourage the children to further discuss and practice the skills with their families and friends.



The school is an appropriate place for the introduction of life skills education because of:

1. The role of schools in the socialization of young people.
2. Access to children and adolescents on a large scale.
3. Economic efficiencies (uses existing infrastructure).
4. Experienced teachers already in place.
5. High credibility with parents and community members.
6. Possibilities for short and long term

evaluation.

CONCLUSION:

This involves the modeling of life skills using methods such as video films, puppet shows and cartoons (in magazines, newspapers and on television). Such initiatives can be coupled with support materials to introduce discussion about the scenarios presented. The support materials can be developed for implementation by peer or other educators in settings such as youth clubs. Short courses of life skills training can be carried out with children and adolescents who participate in sports and recreational clubs. Life skills training workshops can also be integrated into existing courses offering training in livelihood or vocational skills. There is a need for life skills interventions to reach vulnerable children such as street children, sexually exploited and working children, and orphans. Little is known about life skills interventions with vulnerable young people, although there are many indications that life skills play an important role in determining which children cope in difficult circumstances.

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समृद्ध जैवविविधतेचे संवर्धन : काळाची गरज

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प्रस्तावना :

जैवविविधता हे एक नैसर्गिक संसाधन मानले जाते. मानवाला दिलेल्या विविध देणण्यांपैकी ती एक देणणी असून मानवी जीवन सुखकर करण्यासाठी महत्त्वाचा घटक आहे. परंतु सध्याच्या काळात जैवविविधतेचा प्रश्न गंभीर बनलेला आहे. वाढती लोकसंख्या नैसर्गिक साधन संपदेचा अमर्याद वापर वृक्षतोड, भूमीच्या वापरात होत जाणारे बदल यामुळे सजीवांच्या अनेक प्रजाती नष्ट झाल्या आहेत व सध्याच नष्ट होण्याच्या मार्गावर आहेत. उष्ण तापमान पट्टेवरील वनांमध्ये पृथ्वीवर्गीय सजीवांच्या ५०; जास्त प्रजाती आढळतात परंतु मानवाच्या हस्तक्षेपामुळे अनेक प्रजातींचे अस्तित्व धोक्यात आले आहे. मानवाच्या हस्तक्षेपामुळे सजीवांच्या प्रजाती नष्ट होण्याचा दर नैसर्गिकरीत्या नष्ट होण्याच्या दराने सुमारे १००० पटीने जास्त आहे असे शास्त्रज्ञ म्हणतात. हा संतार केवळ उष्ण पट्टेवरील वनांमध्येच चालू आहे. म्हणून उष्ण पट्टेवरील वनांचे संरक्षण करणे गरजेचे मानले जाते.

जैवविविधता टिकविण्यासाठी गरज आहे जंगल संवर्धनाची, जंगल हे वन्य जीवांचे व जीवाणूंची वसतीस्थाने म्हणून वन्यजीवांचे व वनांचे रक्षण करणे आवश्यक आहे. पर्यावरणाचा समतोल राखण्यासाठी वन व वन्यजीव वाढविणे, जैवविविधतेची जपणूक करणे तसेच तिचे संवर्धन करणे ही काळाची गरज आहे. जैव विविधता पर्यावरणाचा आत्मा असून वन वा वन्यजीव एकाच नाण्याच्या दोन बाजू आहेत. त्यांचे संतुलन राखणे गरजेचे आहे. अशा परिस्थितीत पर्यावरणात जीवविविधतेचे महत्त्व (Importance of Biodiversity) :

त्यामुळेच संतुलीत पर्यावरणासाठी जैवविविधतेचे संरक्षण करणे आवश्यक आहे. वनस्पती, प्राणी व जीव जीवाणूंच्या विविध जाती व प्रजातींच्या पृथ्वीवर्गीय संवर्धन आणि संरक्षण करणे, ही काळाची गरज व मानवाने अनुपातिक जबाबदारी आहे. अन्यथा मानवाच्या त्याल दिला लुक-लुकायला लागला आहे, गरज आहे ती मानवाने सावध होऊन सावण्याचा अन्यथा निर्णय क्षमा करणे अशक्यच आहे.

जैवविविधतेचे प्रकार : (Types of Biodiversity)

अ) अनुवंशिय विविधता (Genetic Diversity)

प्राणी आणि वनस्पतींच्या द्रष्टीने फार महत्त्वाचा सुक्ष्म घटक म्हणजे जनुक किंवा जीन (Gene) एकाच प्रजातीच्या प्राणी किंवा वनस्पतीत या जनुकांची विविधता म्हणजेच अनुवंशीय विविधता किंवा गुणसूत्रीय विविधता किंवा जनुक विविधता.

ब) प्रजातीची विविधता (Species Diversity)

एका जातीच्या समूहामध्ये एकाच प्रकारच्या जनुक (जीन) आढळतो. त्यामुळे एकाच जातीच्या प्राण्यामध्ये साम्य दिसून येते. बऱ्याच वेळा अशा प्राण्यांच्या अधिवासही एकच असतो परंतु अशा अधिवासात पोपक द्रव्यांनी उपलब्धता वाढल्यास अनेक सजीव त्याठिकाणी गोळा होऊन त्यात इतर अधिवासामुन आलेले सजीवही असतात. एकाच अधिवासात विविध प्रकारचे व विविध जातीचे सजीव वेगवेगळ्या संख्येने राहतात त्यालाच प्रजातीय विविधता असे म्हणतात.

क) परिसंस्था विविधता (ECD system Diversity)

सजीव घटक व पर्यावरणातील घटक यांच्यातील क्रमबद्ध आंतरक्रियांचे वैशिष्ट्यपूर्ण समष्टि म्हणजेच परिसंस्था होय. प्रत्येक परिसंस्थेतील पर्यावरण, अधिवास त्यातील सजीव प्रजातींचे प्रकार ठराविक असतात. परिसंस्था बदललावेगवेगळे हे सर्व घटकही बदलतात. यालाच परिसंस्था विविधता असे म्हणतात.

जैवविविधतेचे महत्त्व : (Importance of Biodiversity) :

निसर्गात किंवा पर्यावरणात आलेल्या जीवांचे मानवाला अनेक रूपाने लाभदायक आहेत. प्राण्यांचे प्राचीन काळापासून वनस्पती आणि प्राण्यांचे

Interdisciplinary Multilingual Refered Journal Impact Factor 5.18 (2018)

(Population Growth)

५. वाढते औद्योगिकरण
(Growing Industrialisation)

६. नशा, धरणाने काम
(River-Dam Projects)

७. खानाकाम (mining)

८. कीटकनाशक व गंगनाशक
(Insecticide and Pesticides)

९. अणुनाशक स्फोट
(Atomic Explosion)

१०. लष्करी तळ (Military Camps)

११. स्थलांतरित शेती
(Shifting Agriculture)

२. भारतातील वनस्पती व प्राण्यांच्या संकटग्रस्त प्रजाती : (Endangered Flora and Fauna of India)

भारतामध्ये हवामान आणि प्राकृतिक रचनेतील विविधतेमुळे जवळपास ८१,००० जीवजंतूंच्या आणि ८०,००० वनस्पतींच्या प्रजाती आढळून येतात. यापैकी १५,००० प्रजाती अत्यंत संकटग्रस्त अवस्थेत आहेत. भारताने क्षेत्रफळ जगातील क्षेत्रफळाच्या २.४% इतके आहे. येथे जगातील एकूण जीवजंतूंच्या ६.५% जीवजंतू निवास करतात. जागतिक वन क्षेत्रफळापैकी भारतात फक्त ०% वनक्षेत्र आहेत. भारतात जागतिक पशूंपैकी १८% पशू, ६०% वाघ, ७०% आशियन हत्ती व इतकेच भारताचे गंडे आढळून येतात. भारतात माशांच्या (मासे) २५,४६ प्रजाती, १००८ पक्षांच्या, ४००० कीटकांच्या ८०८ सरपटणाऱ्या जीवांच्या, ३७० सरसत प्राण्यांच्या २०४ उभयचर प्राण्यांच्या प्रजाती आढळून येतात. यापैकी सरसत प्राण्यांच्या ८३ पक्षांच्या ११३, सरपटणाऱ्या जीवांच्या २५, उभयचर प्राण्यांच्या ७३, प्रजाती व अनेक कीटकांच्या प्रजाती लुप्त झाल्यासारख्या आहेत.

भारतातील नष्ट होत चाललेल्या जीवजंतूंची संख्या

अ. क्र.	प्रजाती	नष्ट झालेल्या	नष्ट होण्याचा धोका असलेल्या
१	कुत्रे पालक	३५६	२५,०००
२	गाई	१२	३५३
३	पक्षी	१०	१००
४	समस्त प्राणी	२२	१००
५	पाहिली पक्षा असलेले जीव	१८	३३५०
६	पक्षी	१३३	२५३०
७	समस्त प्राणी	८३	६५०
८	पक्षी	१२४	२२५३०

जैविक विविधतेचे संवर्धन (Conservation of Biodiversity)

भारतामध्ये प्राचीन काळापासून विपुल आणि समृद्ध जैवविविधता आढळून येते. विविध वनस्पती व प्राण्यांच्या जातींमुळे विविध भागात विविधता आढळून येते. उत्तरेकडील उंच हिमालय, ईशान्य भागातील घनदाट जंगले देशाच्या पूर्वे पश्चिमेला पसरलेल्या पूर्वे व पश्चिम घाट गंगेने मैदान, राजस्थानातील वाळवंट, खारफुटी जंगले, विस्तृत पठारी भाग, अती घनदाट जंगल असलेले अंदमान निकोबार बेटे, उष्णकटिबंधातील सदाहरीत व निमसदाहरीत जंगले, हिमालयातील सुनिष्पन्निकाची अल्पाइन फॉरेस्ट, रमट व कोरडी पानगळ जंगले, काटेरी वन, खारफुटी जंगले, अशा विविध जंगलांमध्ये मजीवांची विविधता आढळून येते. जगातील अती संवेदनशील २४ भूभागांपैकी पश्चिम घाट हा भूभाग भारतातच आहे. भारतात आढळणाऱ्या वनस्पती व जंगल संवर्धन व संरक्षणासाठी सन.१९८० मध्ये जंगल संरक्षण तर इ.स. १९७० मध्ये वन्य प्राण्यांच्या संरक्षणासाठी वन्यजीव संरक्षण कायदे पास करण्यात आले. आज भारतात विविध प्रकारच्या वनस्पती व प्राण्यांच्या संरक्षण व संवर्धनासाठी २३ व्याघ्रप्रकल्प, ९२ राष्ट्रीय उद्याने, ६५० अभयारण्ये आणि १५ राष्ट्रीय जंगले तयार करण्यात आली आहेत. आज भारतात या सर्व प्रकल्पांसाठी एक लाख ४४ हजार हेक्टर जमीन वनाच्छादीत आहेत. त्यात वन्यजीवांना अभय मिळते आणि त्यांचा संख्या वाढते आहे.

जैव संवर्धनासाठी संकरीत पद्धतीने नवीन जाती तयार केल्या जातात. परंतु त्यासाठी लोकल, जंगली जातीचा खूप उपयोग होतो. त्या जातीतील जनुक हा सर्वात महत्वाचा अनुवांशिक भाग म्हणून जंगली प्राणी व वनस्पतींचे जनुक जपण्यासाठी अशा मजीवांचा संरक्षण करणे ही काळाची गरज आहे. त्यालाच 'जोन बँक' किंवा 'जनुक बँक' असे म्हणतात. आर्थिक नैसर्गिक जनन प्रक्रियेला डावलून क्लोनिंग पद्धतीने सजीव प्रयोगशाळेत तयार केले जातात. त्यामध्येही जनुकाचा संबंध येतो. त्याला जनुक संवर्धन असे म्हणतात.

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A STUDY OF EMOTIONAL INTELLIGENCE ON THE PERSONAL VALUES OF B.ED. TRAINEES

ABSTRACT

Education and values are interdependent and inseparable. The Cherished values serve to become light and provide direction to the educative process. The most important responsibility of an educator is the inculcation of higher values in the minds of the students. To provide effective value of education, the teacher should have great and unshakable faiths in the values which he proposed to transmit and he should incorporate those values in his very personality. The general purpose of the study was to measure the influence of emotional intelligence on the personal values of B.Ed. trainees. The sample of 200 B.Ed. trainees was drawn from the four education colleges in Amravati District of Maharashtra state by applying random sampling method. Standardized personal value Questionnaire by Dr. Jaya and Dr. Yadav, Emotional intelligence scale developed by Anukool and Upinder Dhar was used as a tool for data collection. Mean, S.D. and 't' test were used to analyze the data. The study inferred that, the emotional intelligence and personal values are not associated with each other on all the personal values among the B.Ed. trainees.

Keywords :- Values, Emotional Intelligence, Personal values

INTRODUCTION :-

Education modifies the social and moral characters of students. In one sense teachers are inevitably social and moral educators. Whatever institution restraints exist within a school, teachers are faced with taking positions on a variety of social and emotional issues and are therefore developing values that are informed by these challenges. More generally a teachers selection of subject content and his choice of strategies and structures to impart that content are values- laden. Real education reflects teacher values and sends significant messages about the teachers values to students.

Personal values provide an internal reference for what is good, beneficial, important, useful, beautiful, desirable, constructive etc. values generate behavior and help solve common human problems for survival by comparative ranking of value; the results of which provide answers to questions of why people do, why they do and in what order they choose to do them. Over time the public expression of personal values, that groups of people find important in their day-to-day lives, laid the foundations of law, custom

and tradition. Personal values in this way exist in relation to cultural values, either in agreement with or divergent from prevailing norms.

The major purpose of education is to shape the personality of the child in such a way that the individual becomes a better learner, a better person, a better worker, not only in terms of knowledge, understanding and skills but in terms of values and motives which give meaning and significance to one's behaviour. The system of values can be treated from the sources of understanding Viz, cultural, scientific, religious background and life experience.

OBJECTIVES OF THE STUDY:-

- 1) To study the influence of emotional intelligence on the personal values of B.Ed. trainees.
- 2) To study the influence of locality on the personal values of B.Ed. trainees.

HYPOTHESES:-

- 1) There would be no significant influence of emotional intelligence of B.Ed. trainees on their level of personal values.
- 2) Rural and urban B.Ed. trainees would not differ in their level of personal values.

METHODOLOGY :-



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SAMPLE :-

A sample of 200 B.Ed. trainees was drawn by applying simple random sampling method from four education colleges in Amravati District of Maharashtra state.

TOOLS :-

- 1) Emotional intelligence scale developed and standardized by Anukool and Upindhar Dhar (2002) was adopted.
- 2) Personal values questionnaire was developed and standardized by Dr. Jaya and Dr. Yadav (2008) was adopted.

PROCEDURE :-

Emotional intelligence scale and personal values questionnaire was administered to 200 B.Ed. trainees and the responses made by them were scored, tabulated and analyzed using appropriate statistical techniques.

STATISTICAL TECHNIQUES :-

Both descriptive and inferential statistics were employed for analysis of the data. The descriptive statistics such as Mean and S.D. were used.

Inferential statistics such as t- test was employed "t" value was calculated to know significant difference between the variables.

ANALYSIS OF DATA :-

Table 1 :- Means and SDS of personal value scores of the B.Ed. trainees classified on their emotional intelligence.

Personal values	High E.I. (N=43)		Moderate E.I. (N=118)		Low E.I. (N=39)		t Value	Significance level
	Mean	S.D.	Mean	S.D.	Mean	S.D.		
Economic	18.15	4.20	17.85	3.2	20.0	2.29	0.641	N.S
Power	16.70	2.07	15.74	2.3	17.7	3.12	1.573	N.S
Health	19.09	1.46	19.3	2.1	21.0	1.63	0.699	N.S
Social	24.48	3.28	24.8	2.8	25.0	2.73	0.579	N.S
Domestic	23.72	2.22	22.8	2.4	23.2	1.08	0.914	N.S
Hedonistic	19.72	1.31	18.6	2.2	21.0	2.11	1.912	N.S
Religious	17.63	2.34	18.5	2.6	18.3	1.82	0.956	N.S
Knowledge	24.81	2.82	24.2	2.9	25.0	2.72	0.364	N.S
Moral	23.32	2.43	23.0	2.6	23.0	2.51	0.180	N.S

The above table shows that at 198 df, 0.05 level of significance none of the 't' values for the mean personal value scores were significant.

Therefore, it is inferred that, the level of emotional intelligence of the B.Ed. trainees would not show any significant influence on their personal values in any direction.

Hence it is concluded that, emotional intelligence and personal values are not associated with each other on all the personal values among the B.Ed. trainees

Table 2 :- Means and SDS of personal value scores of the B.Ed. trainees classified on their locality.

Personal value	Rural (N=122)		Urban (N=78)		t-value	Significance level 0.05
	Mean	S.D.	Mean	S.D.		
Economic	18.17	3.32	18.11	3.22	0.121	N.S
Power	15.88	2.47	15.52	2.61	0.525	N.S
Health	19.42	1.64	19.58	2.26	0.422	N.S
Social	24.76	2.86	24.63	3.02	0.367	N.S
Domestic	23.11	2.05	22.71	2.42	0.698	N.S
Hedonistic	19.18	2.37	19.08	1.67	0.463	N.S
Religious	17.82	2.43	18.80	2.62	1.662	N.S
Knowledge	24.10	2.84	24.72	2.96	1.121	N.S
Moral	23.20	2.48	22.64	2.55	1.076	N.S

The above table shows that, at 198 df 0.05 level of significance the calculated 't' value is less than the table value 1.97.

Therefore it is inferred that, rural and urban trainees do not differ significantly in their level of personal values. Hence it is concluded that, locality and personal values are not associated with each other on all the personal values among the B.Ed. trainees.

CONCLUSION :-

In view of the present scenario in the country, there is an urgent need to inculcate values among our students studying at different stages of education, which leads full development of student's personality in its physical, mental, emotional and spiritual aspects, a democratic way of thinking and living. In Indian thought the teachers are the source of inspiration and also a model for the development of moral, personal & human values - not only among their pupils, but also in the society. The teachers task is not merely to impart knowledge, they have also to mould the characters of their pupils and through them the character of entire society. Character building includes the development of moral as well as personal values. Teachers should give a universal outlook. They should strive hard to preserve the basic values of our cultural heritage without losing the momentum, which science and technology give to human progress.

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