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From the Desk of the Chief Editor

Dear Readers,

It gives me great pleasure to present the January-March 2025 edition of Omniscient. Each new issue of this journal reinforces my conviction in the power of thoughtful dialogue and the value of sharing ideas that genuinely inspire progress. A journal is not simply a record of research; it is a living space where knowledge meets curiosity and diverse voices come together to explore ideas that can shape a better future.

Our work continues to be guided by India's Vision 2030 and remains closely aligned with the Sustainable Development Goals. These frameworks remind us that research makes its greatest impact when it addresses the real challenges of our time, whether they relate to education, technology, the environment, or social well-being. One of our major priorities for the near future is to achieve Scopus indexing for Omniscient. This will help us reach a global audience, create greater visibility for our authors, and strengthen our standing in the international research community.

We are committed to the highest academic standards. Every submission undergoes a careful and impartial review process where the focus is always on merit. Quality, originality, and ethical standards remain at the heart of our selection. We also safeguard the integrity of our work through strict plagiarism checks and AI writing detection so that every article we publish is genuine and trustworthy.

The articles in this issue reflect innovation, critical thinking, and a deep commitment to solving meaningful problems. They combine academic rigour with practical relevance, showing the strength of our research community. I am grateful to the editorial board for their dedication, to our reviewers for their thoughtful guidance, and to our contributors for sharing their valuable work. Above all, I thank our readers whose engagement makes this effort worthwhile. Together, we can ensure that Omniscient remains a platform for honest, meaningful and forward-looking academic exchange that contributes to both scholars and society.

(Prof. K. P. Singh)

Vice Chancellor

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CONTENT

Promoting Thinking Ability of Upper Primary School Students through Storytelling

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Abstract

This study explores the role of storytelling as a pedagogical tool for promoting thinking abilities among upper primary school students. Traditional education systems have often focused heavily on rote learning and information retention, neglecting the crucial skill of thinking. This research advocates for a shift towards fostering critical, creative, reflective, and moral thinking through engaging and contextually relevant storytelling sessions. Using a quasi-experimental design, two groups of Class VI students from Odisha were selected—an experimental group that received story-based interventions and a control group that followed the standard curriculum. Data was collected using a researcher-developed Thinking Scale and analysed through statistical methods, including U-tests. Findings revealed significant improvements in reflective and moral thinking among the experimental group, while no significant differences were found in critical and creative thinking. Nevertheless, overall thinking scores favoured the experimental group, suggesting that storytelling can effectively enhance cognitive engagement and holistic development. The study supports integrating storytelling into classroom practices to cultivate higher-order thinking skills, align with 21st-century educational goals, and foster more meaningful learning experiences.

Keywords: *Promoting thinking, Thinking ability, School-education, Upper-primary school, Storytelling.*

Introduction

The importance of 'Thinking' in the school has felt from the past few decades only. The traditional thinking has put very high emphasis on critical thinking, argument, and logic, but these are only a part of thinking, and it is not sufficient (Lipman, 2003). That is why the present system of education needs to stress more on thinking development among students. There is a need of a special plan and policy in order to give stress to the 'thinking' area. The situation is not different in our schools. Our rote memory-centric examination system prevented the practice of thinking in our teaching-learning process. Even though it is discouraged to think in our schools. However, NCERT, 2005 stresses on critical and creative thinking. The NPE Draft (2019) stresses the holistic development of learners by the objective of that, in order to minimize the rote learning instead encouraging holistic development and 21st century skills, the entire school education curriculum will be reoriented to develop holistic learners and develop higher order skills of critical thinking, creativity, logical deduction, and so on. There are only a few programmes in their aim that have mentioned the thinking development of students in school (Lipman, 2003). The last decade of the twentieth century was expected to be

one of gathering of momentum by the critical thinking movement. However, this critical thinking promise has not been fulfilled among the majority of students at elementary school. No effort was made to connect the various dimensions of thinking into a whole, both conceptually and developmentally (Lipman, 2003).

And the awareness among educators that something has to be done to improve the quality of thinking in the classroom has prevailed until now. In the primary stage of education, children are very active, and students need freedom to question and explore their environment. At the end of primary or at the upper primary stage, when children reached, they started to think rationally. Here, students develop a feeling of confidence, sharing, rules and regulations, respect, responsibility, interpersonal skills of communication, creative thinking, and so on. So, it is the appropriate stage to provide them opportunity to develop their thinking power. They are curious. They love stories, games, rhythm, songs, colours, etc. This stage is the ideal time for laying foundation of a child's personality, development of thinking, and values. Story can be the best medium to develop the thinking of the students. Everybody loves to hear stories, and it is an inevitable part of childhood. Child enjoys and experience pleasure in stories. Stories could be helpful in the development of skills among children, especially thinking capacity.

Concept of Story

A story is that which transmits information, experience, attitude, or point of view. A story includes purpose, one or more characters, through a series of events, and by the end, it arrives at a target destination, fulfilling its reason for having been seen or told. A story is a narrative account of an event or a sequence of events. A narrative or story is about connections. It connects the actions of individuals with different interrelated events in a comprehensive way. Narrative illustrates the importance of events relating to one with another. It can be true or fictional. Even if a story is fiction, it always contains a fundamental truth. The story's message must be accurate. It needs to be genuine and constant. Simple facts are given emotion, people, and sensory details by a story. That's why a story draws our attention through its plot and captures us by delivering an important message.

Stories are all around us. Our lives are a collection of stories. Stories make engage to the listeners and help them to remember the lessons. It is an effective tool as it allows students to participate actively through the action of imagination, observation, and experience. This enhances students' learning competency and helps them to connect with their environment. The events inside a story can be fictional or non-fictional, including real or fictional incidents. The story may be of all times: past, present, and future. Stories have cultural significance as it has started from ancient ages and have been an important part of human life. Aside from being a

part of every single type of literature, stories are at the foundation of creativity and part of just about everything we do; stories can be shared in all different ways, from oral and written storytelling, to TV, film, and radio, to fine arts, stage performance, and music, and so on.

Concept of Thinking

The present educational system must focus on the thinking of children, and strengthening this thinking should be the chief business of the schools. The school could best prepare children for the world they would face when they grew up. Therefore, 'thinking' in education has been tried to propose. Of course, traditional education involved 'thinking', they acknowledged. But the quality of such 'thinking' was deficient. This was limited only to 'critical thinking' (Lipman, 2003). Benjamin Bloom and his colleagues in 1948 began an effort by recognizing that the brain operates across three domains: Cognitive, Affective, and Psychomotor. The cognitive domain is concerned with thinking.

Thinking, also known as cognition, is the mental activity that occurs in the brain of an individual in organizing understanding and communicating the information to others. Thinking is a cognitive ability, and image & language are closely connected with human thinking. The good poetry, a highly developed computer, or a robot, a beautiful painting, are all the products of thinking. Thinking is a process of internal representation of external events, belonging to the past, present, or future, and may even concern a thing or an event which is not being actually observed or experienced by the thinker. Thinking can be described as a pattern of behavior where we solve a particular, intentional problem by using internal representations (symbols, signs, etc.) of objects and events (Verma & Anurima, 2019). Thinking can shift instantaneously over a span of time and space. Thinking is the mental exploration. The sets induced in our process of thinking are quite often the result of our interests, directions, purposes and goals, or accomplishments. Tools or instruments of thinking are Image, Concepts, Symbols & signs, Language, Muscle activities, Brain function, Problem-solving, Reasoning, Logic. These were some tools, instruments, or elements of the thinking process. The process of thinking takes place when we involve any of these elements (Mangal, 2014). Thinking takes place when we form concepts, engage in problem solving, to reason, and make decisions.

Types of thinking

Promoting thinking among students prepares them to engage thoughtfully with real-life challenges and become responsible, reflective individuals. It makes a child self-reliant, an independent inquirer and discoverer, and a useful and progressive citizen as needed by a rational and democratic society. Thinking supports independent judgment, encourages rational

decision-making, and is essential for personal and academic growth. Thinking is a mental process, usually classified into the following categories:
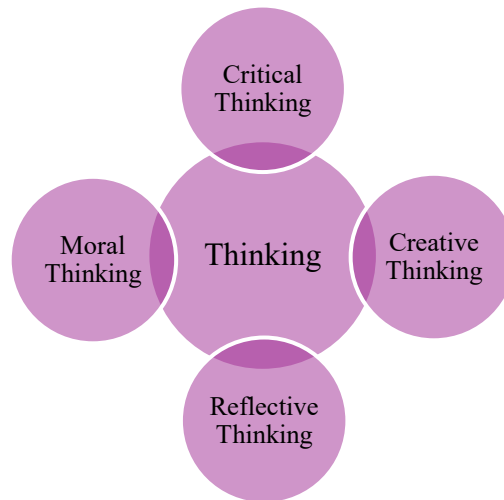
Figure 1: Types of Thinking

1. *Critical thinking:* Critical thinking is a higher-order mental process that involves using advanced cognitive skills to understand, interpret, analyze, synthesize, conceptualisation, and evaluate information. It requires individuals to draw inferences, make judgments, and explain their reasoning in a logical and unbiased manner. Rather than relying on guesswork or assumptions, critical thinking promotes a disciplined and purposeful approach to problem-solving and rational decision making (Bansal, nd).

2. *Creative thinking:* This type of thinking, as the name suggests, is associated with one's ability to create or construct something new, to discover or produce a new idea or object, novel, or unusual. It is not restricted by any pre-established rules. It describes and interprets the nature of things, events, and situations by establishing relationships and associations. Creative thinking in all its dimensions involves divergent thinking instead of the routine and fixed type of convergent thinking.

3. *Reflective thinking:* This is a somewhat higher form of thinking. It aims at solving complex rather than simple problems. Mental activity in reflective thinking does not involve the mechanical trial-and-error type of efforts. There is an insightful cognitive approach in reflective thinking. It takes all the relevant facts arranged in a logical order into account in order to arrive at a solution to the problem at hand.

4. *Moral Thinking:* Thinking by taking ethical principles into consideration can be called moral thinking. Having moral judgment, moral awareness, following rules and standards, and making moral decisions, makes a person aware of right conduct. This moral

development takes place throughout a human's life with some progress and growth.
Knowing right and wrong and taking moral action is combined with moral thought.

With critical thinking, the promotion of creative, reflective, and moral thinking is possible through different methods and techniques by linking it to different content. The content or lesson taught to the students is linked to any story, then the content or lesson will be interesting for them. As the topic demands, the story should fit its dimensions. Stories can make lesson material more approachable and relatable.

Story and Thinking

The school could best prepare children for the world they would face when they grew up. Thinking occurs mostly in our heads, is invisible to others, one indication of becoming an 'effective' thinker is to be able to move on and make thinking visible through speaking or writing. So, if students have not yet learned to express their thinking, teachers need to help them to do so (Richhart & Perkins, 2008). Locke says, the skills of thinking do not occur automatically; they do not develop by themselves. Therefore, the present educational system must focus on the thinking of children, and strengthening this thinking should be the chief purpose of the schools. Methods like storytelling can be helpful in promoting thinking, as it has shown in many research results. A story is a connected series of events conveyed by different forms of communication- written or spoken words, still and moving images, animation, body language, performance, music, etc. Here, students explore human relations problems by enacting problem situations and then discussing the enactments. Together, students can explore feelings, attitudes, values, and problem-solving strategies. A story helps in making lessons lively and interesting to the pupils. It is helpful in their holistic personality development. It makes students active and attentive in the classroom. It is helpful in the thinking and imagination of students.

It boosts the creativity of children and imagination power (Dhingra, 2011; Izzah, 2015; and George, 2016). Stories also develop the different types of intelligence, like EQ and SQ (Izzah, 2015). It increases verbal skills and vocabulary power (Nassim, 2018, and Dhingra, 2011). It makes academic learning easier and increases understanding of a subject. Stories play a significant role in moral development and improve awareness of virtues (NCERT framework, 2005; Alterio & McDurry, 2004; and Dash, 2015). It is helpful in sharpening memory. It creates interest in learning and makes students attentive to the subject matter (Muhhamed, 2016). Bruner (1986) stressed the importance of stories in understanding self and bringing cognition, emotion, and action together to give experience of 'cultural relevance'. Bishop and Glynn (1999) maintained that different stories give different versions and approaches to the truth,

making it more relevant to consider individual differences among learners. Stories enable students to enter into the worlds of real people involved in everyday situations. So, it is still relevant today as it has been proved by psychologists and researchers who say stories help children to understand the difference between knowing and doing (Alterio & McDurry, 2004). There are different developmental stages of thinking ability of children, where the age 11 to 12 and afterwards, the formal operational stage is there (Piaget, 1948). It is the last stage of cognitive development. The intellectual development and functioning take a very sophisticated shape at this stage as the child learns to deal with abstraction by logical thinking.

Objectives of The Study

1. To compile stories to promote the thinking ability of students at the upper primary school.

2. To implement the compiled stories with the help of a planned story session for promoting of thinking ability of students at the upper primary school.

3. To find out the effectiveness of compiled stories in terms of promoting the thinking ability of students at upper primary school.

Hypotheses of The Study

Based on the objectives of the study and selected types of thinking, the following null hypotheses has been formulated and has been tested at the 0.05 level of significance.

H01. There is no significant difference between the mean thinking scores of the experimental group and the control group of upper-primary school students in terms of Critical Thinking.

H02. There is no significant difference between the mean thinking scores of the experimental group and the control group of upper-primary school students in terms of Creative Thinking.

H03. There is no significant difference between the mean thinking scores of the experimental group and the control group of upper-primary school students in terms of Reflective Thinking.

H04. There is no significant difference between the mean thinking scores of the experimental group and the control group of upper-primary school students in terms of Moral Thinking.

H05. There is no significant difference between the mean total thinking scores of the experimental group and the control group of elementary school students.

Methodology

The method of the present study was experimental. Here, the quasi-experimental research design has been used. This is a non-equivalent design because random assignment to

experimental and control treatments has not been applied. Under this pre-test and post-test non-equivalent groups design was selected as it was convenient for this study. For the present study, the independent variable was the 'Compiled Stories', whereas the dependent variable was the 'Thinking' to be promoted.

Population and Sample

All the elementary school students of Odisha state studying in the vernacular medium Upper Primary schools affiliated with the Board of Secondary Education in Odisha comprised the population of the current study.

A convenient sampling technique from the non-probability sampling types has been used to draw the sample for this study. One school was selected as a control group and one as an experimental group. Two Upper Primary schools of the Bargarh district of Odisha have been selected for the purpose of feasibility of experimentation. Here, the researcher targeted sample 6th class students are the sample for the present study age is 11-12 years. After making equivalent to the two selected groups there were 20 students in each of the groups. So, there are a total of 40 students who constitute the sample of the present study.

Tools for Data Collection

First, for the purpose of group matching, the researcher has applied Raven's Progressive Matrices to experimental and control groups. According to the objectives of the study, the tools used for data collection were: 1. *Intelligent Test:* The standard progressive matrices test prepared by J. C. Raven in 1956 was used as a pre-test. 2. *Thinking Scale.* In order to measure the thinking ability of students, the researcher has developed a thinking scale with 45 items, which includes four sections considering 4 types of thinking- Critical, Creative, Reflective, and Moral. The scale was validated by experts, and later reliability was also checked through the Cronbach Alpha test, with a result was 0.774.

Development and Implementation of Planned Story Sessions

The storytelling intervention has started to be given to the experimental group for the whole academic year of 2023-2024. Story sessions are conducted at least two days every week, preferably Friday and Saturday, up to the end of their academic session. On the other hand, after conducting a pre-test of the control group, they were not introduced to any of the story sessions, which means they were not given treatment by the researcher.

After developing a model for the present study, the researcher made lesson plans for finalizing 32 number of stories. These Plans were developed based on Herbartian principles, but were in a Cognitive lesson plan style. Different topics of subjects of standard VI have been tried to be integrated with the developed stories session, but informally. In order to make research

effective, a lesson plan for one story session has been made. These plans were prepared in English but later translated into the Odia language with the help of Odia language experts, as the study was meant for Odia medium students in Odisha.

The plan has been made considering these important points.

1. General Objectives
2. Specific Objectives
3. Mode of Presentation
4. Thinking type to be inculcated
5. Student's introduction to Story
6. Story Presentation
7. Story session Discussion
8. Instrument used in the Story
9. Teacher's Behaviour
10. Students' behaviour
11. Evaluation Activities

After taking permission from the sample schools, the researcher has implemented the compiled stories on the experimental group for a period of one academic year. Then, from the Month of April 2023, the researcher started giving intervention to the students of the experimental groups. The planned story sessions were delivered informally without their strict linkage to academic activities. Weekly 2 periods have been allotted by the school in the timetable for this purpose. Those allotted periods of 40-45 minutes in a day were engaged by the researcher for delivering the stories. At the end of the implementations of all the planned stories sessions, the post-tests have been administered upon both control and experimental group through Thinking scale. The data related to this have been analysed and interpreted, that described here.

Analysis and Interpretation of Data

All the data which are collected through the implementation of test have been quantitatively analysed. Statistical tests like Mean, SD and at the last U test have been applied. The use of popular software like SPSS has been used for this purpose. Data analysis done by the researcher Quantitative techniques. Both descriptive and inferential data analysis have been emphasized in this study. There were four types of thinking selected for this study that is Critical, Creative, Reflective, and Moral thinking. For this scale, there were five different hypotheses that had been formulated, for which statistical tests have been applied.

The following eight tables dedicated to Thinking Scale analysis. Here ten separate tables dedicated to each type of thinking as hypothesis formulated separately for them. Here, table number 1 and 2 is statistical score of 'Critical Thinking' of both experimental and control group. Table number 3 and 4 is about statistical score of 'Creative Thinking' of both experimental and control group. Table number 5 and 6 is about 'Reflective Thinking'. Table 7 and 8 is about total scores of thinking scale and its calculation 'Moral Thinking'. And at last, overall scores of all

types of thinking of both experimental and control group provided in the table number 9 and 10.

Table 1: Distribution of Critical Thinking Score

Groups	N	Mean	Median	SD	SE
Experimental	20	29.10	29.0	4.52	1.012
Control	20	27.30	27.5	2.95	0.660

This above table provided data related to Critical thinking under the Thinking Scale of both experimental and control groups. Mean of the experimental group is 29.10 whereas mean of control group is 27.30. The median of experimental group and control group are 29.0 and 27.5, respectively. The SD and SE of experimental groups are 4.52 and 1.012 respectively, likewise the SD and SE of control group are 2.95 and 0.660, respectively. The difference between the means of both groups have been identified that is why it needs to be checked this significant whether difference or by chance and to test null hypothesis, the U-test has been applied, which related data given in the next table.

Table 2: Distribution of U-test results related to Critical Thinking

Groups	N	Sum of Ranks	U-Value	z- Value	Probability (p)
Experimental	20	461	149.00	-1.388	0.169
Control	20	359			

The above table provides information about U-test results. The sum of ranks of experimental groups is higher, which is 461, than the control group, which is 359. The calculated U-value is 149.00, and the z-value score is 1.388. After this, the p-value checked from the table is 0.169, which is greater than the decided value that is 0.05. That is why the U-value was found to be not significant. The null hypothesis formulated for this, "There is no significant difference between the mean gain thinking scores of experimental group and control group elementary school students in terms of Critical Thinking," has been accepted here at the 0.05 level of significance. A visual representation of the score secured by both groups is provided below here. Here, it can be interpreted that the difference between the two groups is not there because of the story sessions. But there is no negative impact of the story session as because there is no difference between two groups. The previous table No. 4.17 showed the difference between mean scores of two groups, where scores of experimental group students were high, which means the story telling intervention was not much but little effective to experimental group while considering critical thinking scores.

Table 3: Distribution of Creative Thinking Score

Groups	N	Mean	Median	SD	SE
Experimental	20	29.40	30.0	3.53	0.789
Control	20	29.10	29.0	4.03	0.901

The table provided here details information about descriptive calculations of the Mean, Median, SD, and SE relating to Creative Thinking inside the Thinking scale. The SD and SE data of the experimental group are 3.53 and 0.789, respectively. The SD and SE data of the control group is 4.03 and 0.901. The medians of the experimental group and the control group are 30 and 29, respectively. The means of both the experimental group and the control group are 29.40 and 29.10, respectively. There is a small difference between the two groups that have been identified here. The non-parametric calculation can give clearer idea about the differences. Whether the difference between the mean gain score of Creative Thinking of both groups is significant or by chance, and to test the null hypothesis U-test for this purpose has been applied. To check if the mean difference between the two groups is significant, the data related to this have been given below.

Table 4: Distribution of U-test results related to Creative Thinking

Groups	N	Sum of Ranks	U-Value	z- Value	Probability (p)
Experimental	20	414.50	195.50	-0.122	0.913
Control	20	405.50			

After applying the U-test, the above table shows data related to the U-test result about the Creative Thinking Score under the Thinking scale of both groups. There is very little difference between the sum of ranks of both groups, as the Experimental group has 414.50 and the control group has 405.50. The result of the U-test value found is 195.50. Here, the z value is 0.122. The probability from the test result of the z-value ascertained from the table of probabilities(p) is 0.913. which is not less than the decided significance level of 0.05. It means the test is not significant at the 0.05 level. Thus, the null hypothesis formulated for this "There is no significant difference between the mean gain thinking scores of experimental group and control group elementary school students in terms of Creative Thinking" has been accepted. It means the story sessions were not so much impactful, but it was helpful for experimental group students, which is why they scored high and performed well on Creative thinking under the Thinking Scale. To understand the differences clearly, here is a graph of students' performances in both groups provided below.

Table 5: Distribution of Reflective Thinking Score

Groups	N	Mean	Median	SD	SE
Experimental	20	29.50	29.5	3.99	0.893
Control	20	25.30	27.0	3.61	0.807

The above table provided data related to Reflective thinking under the Thinking Scale of both experimental and control groups. The mean of the experimental group is 29.50, whereas the mean of the control group is 25.30. The medians of the experimental group and control group are 29.5 and 27.0, respectively. The SD and SE of experimental groups are 3.99 and 0.893, respectively; likewise, the SD and SE of control groups are 3.61 and 0.807, respectively. The difference between the means of both groups has been identified, which is why it needs to be checked this significant whether this difference or by chance or to test the null hypothesis. So, for this, the U-test has been applied, and its related data has been given in the following table.

Table 6: Distribution of U-test results related to Reflective Thinking

Groups	N	Sum of Ranks	U-Value	z- Value	Probability (p)
Experimental	20	528.50	81.50	-3.218	0.001
Control	20	291.50			

The above table is about the data of the U-test results. This includes the sum of the ranks of both groups. The sum of ranks of the experimental group is 528.50, whereas the sum of ranks of the control group is 291.5. Its U-test value result showed 81.50. After this, the z-value result came out, which is 3.218, which is greater than the decided table value that is 1.96. Again, from its p-value shown 0.001, it is less than the decided value of 0.05. That is why the null hypothesis formulated to apply the U-test on it, "There is no significant difference between the mean gain thinking scores of experimental group and control group elementary school students in terms of Reflective Thinking," has been rejected here at the 0.05 significance level. It means that the story sessions were helpful to experimental group students, while considering the reflective thinking category, and that is why there is a significant difference found in the Reflective Thinking Score between the two groups because of the storytelling intervention.

Table 7: Distribution of Moral Thinking Score

Groups	N	Mean	Median	SD	SE
Experimental	20	28.40	29.0	3.23	0.723
Control	20	26.10	26.0	2.76	0.618

Table 7 gives information about the Mean, Median, SD, and SE of Scores of experimental and control groups. Means of both groups are 28.40 and 26.10 for the experimental and control

groups, respectively. The Median of the experimental and control groups is 29.0 and 26.0, respectively. The SD of the experimental group is 3.23, and the SD of the control group is 2.76. After this, the SE of the experimental group and control group are 0.723 and 0.618, respectively. Here, the mean difference between the two groups is 2.3. Whether the difference is significant or by chance, and to test the null hypothesis it needed to be tested through a statistical formula that is U-test. The following table is dedicated to the data related to the U-test results.

Table 8: Distribution of U-test results related to Moral Thinking

Groups	N	Sum of Ranks	U-Value	z- Value	Probability (p)
Experimental	20	483.50	126.50	-2.006	0.046
Control	20	336.50			

This table includes the data related to the U-test which involves sum of ranks, u test result, z-value, and p-value also. The sum of ranks of Experimental group is 483.50 and Control group is 336.50. The calculated U-value is 126.50. The z-value which is 2.006 indicated that it is greater than the table value 0.05 which is 1.96. Again, the probability of test found is 0.046, which is just less than the decided value that is 0.05. That is why the null hypothesis formulated for this "There is no significant difference between the mean gain thinking scores of experimental group and control group elementary school students in terms of Moral Thinking" is supposed to be rejected at 0.05 level. It means that there is a significant difference between Moral Thinking mean scores of experimental group and control groups at 0.05 level due to story sessions, where the students of experimental group performed well.

Table 9: Distribution of Total Thinking score

Groups	N	Mean	Median	SD	SE
Experimental	20	116	117	9.31	2.08
Control	20	108	109	8.11	1.81

Table here provided detailed information about descriptive calculation of the Mean, Median, SD and SE relating to all the sections inside Thinking Scale. The SD and SE data of experimental group are 9.31 and 2.08, respectively. The SD and SE data of control groups are 8.11 and 1.81. The Median of experimental group is 117, and control group is 109. The means of both experimental group and control group are 116 and 108, respectively. The difference between the means of both groups has been identified here. There is the difference of 8 points, so the non-parametric calculation needed here to check whether the difference between mean gain Total Score of Thinking Scale of both groups is significant or by chance and to test the null hypothesis U-test for this purpose has been applied. The mean difference between two

groups is significant or not, the data related to the statistical applications of these have been provided below.

Table 10: Distribution of U-test results related to Total Thinking Score

Groups	N	Sum of Ranks	U-Value	z- Value	Probability (p)
Experimental	20	515.0	95.00	-2.844	0.005
Control	20	305.0			

The data had been tested applying U-test, then the above table provided with data of U-test result about Total Thinking Score under the Thinking Scale of both the groups. There is a big difference between the sum of ranks of both groups, as Experimental group having 515 and control group having 305. The result of the U-test value is 95.00. Here, the probability(p) value after test result of z-value ascertain is 0.005. This is less than the decided value that is 0.05 value. Also, z value which is 2.846 is greater than significance level of 0.05 which Table value is 1.96. It means the test is significant at 0.05 level. Thus, the null hypothesis formulated for this "There is no significant difference between the mean gain total thinking scores of experimental group and control group elementary school students," has been rejected. It means the story sessions were helpful for experimental group students, that is why they scored high and performed well on overall sections of Thinking Scale. To understand the differences clearly, here is a graph of students' performances in both the groups provided below.
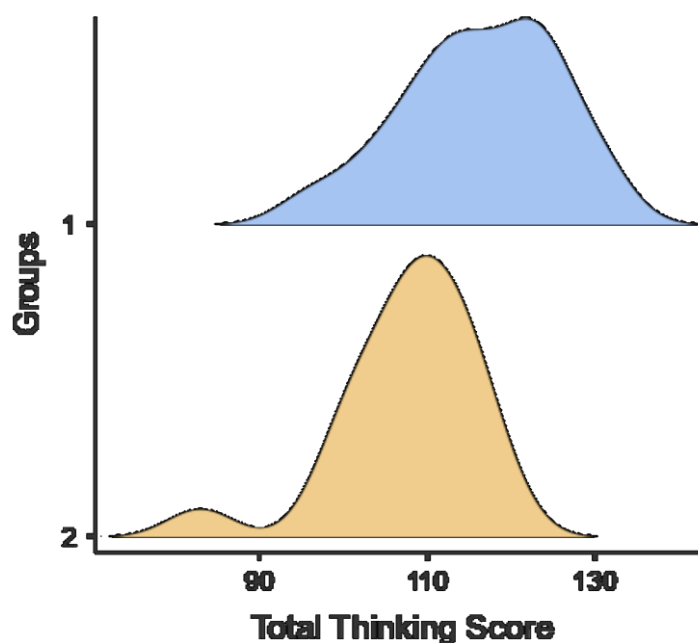
Figure 2: Total Thinking score of Experimental Group (1) and Control Group (2)

The above density graph has been made based on the total scores of students in the Thinking Scale. All types of Thinking that are included in this study; Critical, Creative, Reflective and

Moral Thinking under the Thinking Scale has been calculated together, which result is already elaborated in previous tables that is 4.25 and 4.26. So, in this graph it can be assumed that experimental group students' graph which is blue coloured and named as group 1, its performance is much better than the control group students which is yellow in colour and named as group no. 2.

Results and Discussion

The above analysis and discussion about thinking enhancement and the test results of thinking scale indicated that though the differences between experimental and control groups did not recognize in the critical and creative thinking (from table No. 2. and 4) but the overall score differences noticed in table no. 10, it was total scores of thinking scale. The main differences are also observed in table no. 6 and 8 that were dedicated to the Reflective and Moral type of thinking. The differences found are due to the storytelling and not by chance as calculated data showed. Students have enhanced their thinking ability. The storytelling intervention was effective in terms of overall thinking scores to the experimental group students.

Here it can be said that, through the structured implementation of storytelling over an academic year, it was observed that students in the experimental group demonstrated significantly better performance in reflective and moral thinking compared to those in the control group. Although the differences in critical and creative thinking were not statistically significant, the overall enhancement in thinking ability suggests that storytelling has a positive influence on cognitive development. The research findings of Hunter & Eder (2010), Andrews & Martin (1995), Jones & Sanguedolce (2013) was similar to the present research, as they had to say that story can promote moral thinking and higher order thinking skill. These findings have implications for curriculum reform, teacher training, and pedagogical strategies focused on developing thoughtful, responsible, and imaginative learners. Students should encourage to possess the 'Ability to think', this could be the important human resource. From result it has revealed that storytelling could be a way to enhance students' thinking ability.

Conclusion

Now a days, education needs to be integrated so that it can focus on development of child's language competence: issues related to articulation and literacy, and the ability to use language to create, to think and to communicate with others. The present study highlights the potential of storytelling as an effective pedagogical tool to promote thinking abilities among upper primary school students. The research confirms that stories not only engage students emotionally and intellectually but also provide opportunities for deeper understanding, moral reasoning, and imaginative exploration. Integrating stories into the teaching-learning process

can make education more meaningful, relatable, and aligned with the holistic goals of the National Education Policy. This study calls for a rethinking of classroom strategies and curriculum design to move beyond rote memorization and foster a learning environment that cultivates independent thinking, creativity, and values. Teachers should be encouraged and trained to use storytelling as a dynamic and impactful medium to nurture thoughtful and well-rounded individuals equipped for the demands of the 21st century.

References

Alterio, M., & McDrury, J. (2004). *Learning through storytelling in higher education: Using reflection and experience to improve learning* (2nd ed.). Taylor & Francis e-Library, USA

Andrews, S. V. & Martin, D. (1995). *Value education in elementary school: A practical application of research.* https://eric.ed.gov/?id=ED382379

Bansal, P. (n.d.). Developing critical thinking skills: A thinking journey. Retrieved from https://www.academia.edu/7296750/Developing_Critical_Thinking_Skills_A_Thinking_Journey

Bishop, R., & Glynn, T. (1999). *Culture counts: Changing power relations in education*. Dunmore Press.

Bruner, J. (1986). *Actual minds, possible worlds*. Harvard University Press.

Dash, D. (2015). Effectiveness of storytelling approach in inculcating values identified by NCERT among the 6th grade learners of Odisha state. *Scholarly Research Journal for Interdisciplinary Studies, 3*(16), pp. 2583-2590.

Dhingra, K. (2011). *Effect of cuento storytelling technique on social maturity and moral values in students.* http://shodganga.inflibnet.ac.in/handle/10603/240352

George, K. M. (2016). *Impact of play, brainstorming and storyline on creativity among middle school children.* https://shodhganga.inflibnet.ac.in/handle/10603/201002

Government of India. (2019). *Draft National Education Policy 2019*. Ministry of Human Resource Development. https://www.education.gov.in/sites/upload_files/mhrd/files/Draft_NEP_2019_EN_Revised.pdf

Hunter, C & Eder, D. (2010). The role of storytelling in understanding children's moral/ethic decision-making. *Multicultural Perspectives, 12* (4), pp. 223-228. DOI: 10.1080/15210960.2010.527593

Izzah, L. & Mutiarani, M. (2015). *The power of storytelling in teaching English to young learners* [Conference Paper], 1. https://doi.org/10.5281/zenodo.1214962

Jones, S. L. & Sanguedolce, P. (2013). *Developing higher order thinking skills through story gathering.* https://www.researchgate.net/publication/281116300

Lipman, M. (2003). *Thinking in education* (2nd ed.). Cambridge University Press, UK.

Mangal, S. K. (2014). *Advanced educational psychology*. PHI Learning Pvt. Ltd.

Muhammed, A. I. (2016). The impact of storytelling on young ages. *European Journal of Language and Literature Studies, 2* (3).

Nassim, S. (2018). Digital storytelling: an active learning tool for improving students' language skills. *Pupil: International Journal of Teaching, Education and Learning 2* (1), pp. 14-29.

NCERT. (2005). *National Curriculum Framework 2005*. National Council of Educational Research and Training. https://ncert.nic.in/pdf/nc-framework/nf2005-english.pdf

Piaget, J. (1948). *The Moral Development of the Child*. New York: Free Press

Ritchhart, R., & Perkins, D. N. (2008). Making thinking visible. *Educational Leadership, 65*(5), 57–61.

Verma, R., & Anurima. (2019). *Role of thinking style in concept formation*. Retrieved from https://www.amity.edu/aien/aijte/articles2019/role%20of%20thinking%20style%20in%20concept%20formation.pdf

Are Heutagogy and Peer-led learning Synergistic in Fostering Lifelong Learning Skills among Higher Education Students?

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Abstract

The inevitability for lifelong learning competencies grows progressively significant in dynamic educational and work environments.

Objectives: *This study looks at prospective applications of heutagogy paired with peer-led learning (PLL) as an approach for supporting higher education learners obtain the competencies needed to pursue lifelong learning.*

Methods: *A narrative literature review and deductive thematic analysis were utilised. Boolean operators with specified terms were used for browsing academic databases. To identify significant patterns and integration possibilities, 55 peer-reviewed publications (2010–2024) that discussed heutagogy, PLL, and lifelong learning in higher education were selected and thematically analysed.*

Results: *The review indicates that combining PLL with heutagogical principles fosters dynamic, learner-centered environments. Peer-led strategies enhance collaboration and communication, while heutagogy promotes autonomy and reflective engagement. This dual approach appears to support higher levels of learner motivation, deeper conceptual understanding, and readiness for lifelong learning. Key implementation strategies include structured flexibility, educator facilitation, and the integration of digital tools to accommodate diverse learning needs.*

Conclusions: *A possibility for a pedagogic approach that is in line with higher education's lifelong learning objectives is suggested by the conceptual synergy between heutagogy and PLL. For further studies to confirm this paradigm and examine its applicability in different kinds of learning contexts, empirical studies are required, especially in line with National Education Policy 2020.*

Keywords: *Heutagogy, Peer Learning, Lifelong Learning, Higher Education, Synergy Model.*

Introduction

The premise of "lifelong learning" pertains to the continuous, self-motivated desire for knowledge for one's own professional or personal growth, with a special focus on adaptation in dynamic contexts (Thwe & Kálmán, 2023). *Heutagogy*, or self-determined learning, advances on these principles and can assist in stimulating learner autonomy and the capability to determine their own learning trajectory while cultivating critical thinking and problem-solving skills (Aspin & Chapman, 2000; Lucas & Venckute, 2020; Verma, 2024). By means of linked experiences and perspectives, learners work together to guide and support each other in *Peer-led learning*, potentially increasing retention and participation (Sutherland & Crowther, 2008; Tuckett, 2023). These notions tend to enrich the vibrant and appealing learning environments. The significance of lifelong learning competencies in higher education

and today's workplace has grown partly because of rapid technological advances and evolving job demands. Colleges and universities are integrating these principles into their curriculum, prioritising project-based learning and reflective methods in order to prepare learners for contemporary issues (Alt et al., 2022; Güven, 2020).

Some research suggests that lifelong learning may enhance adaptability and resilience, both of which are mandates for managing job dynamics (Mejía-Manzano et al., 2022; Nguyen & Zarra-Nezhad, 2023). Moreover, as industries go through evolution prompted by the 4th Industrial Revolution, there appears to be an increasing demand for critical thinking and autonomous learning, emphasising the necessity for educational frameworks that enable constant skill development (Cogavin, 2023; García-Martínez et al., 2023). It has become essential for individuals to remain adaptable and self-directed in light of advancements in technology and shifting work expectations (Çilek et al., 2023; Swain-Oropeza et al., 2023).

According to Dorfman-Furman & Weissman (2024) and Gandhi (2022), lifelong learning encompasses more than simply acquiring knowledge; it additionally covers an array of cognitive and behavioural competencies that promote continuous growth throughout lifespan. These involve critical thinking, problem-solving, adaptability, and continuous learning. Individuals possibly examine evidence, identify biases, and reach rational decisions via critical thinking (Çilek et al., 2023). Recognising problems and arriving upon feasible solutions are essential elements of problem-solving, which can be an asset associated with both operational effectiveness and creativity (Dunham, 2015; Swain-Oropeza et al., 2023). Resilience and sustained achievement are progressively associated with adaptability, characterised by the ability to adjust actions in accordance with unpredictable situations (Al-Hassan & Omari, 2023; Baleca, 2023). Continuous learning refers to the act of moving forward to engage in formal as well as informal learning opportunities as a means to remain pertinent in areas which evolve rapidly (Gandhi, 2022; Murugova et al., 2021). Collectively, these competencies serve a basis to navigate uncertainty and complexity, promoting learner autonomy, and enabling individuals to continue pursuing their own professional and personal growth.

Learners are able to customise their learning experiences through heutagogy, which encourages learner agency. Peer-assisted simulations in nursing school is a prime example wherein PLL may encourage collaboration and reinforce knowledge through directions, thereby improving learners' confidence and competence (Madrazo et al., 2019; Valler-Jones, 2014). Integrating these strategies may result in adaptive learning environments that learners feel encouraged to steer their preferred learning and enjoy collaborative interactions with their peers (Bhardwaj et

al., 2024; Mulisa & Mekonnen, 2018). Considering heutagogy's strong focus on learner autonomy, minimal has been discovered concerning how it operates using a peer-led approaches. There don't appear much comprehensive frameworks that incorporate multiple teaching designs; most prior study has examined at each one separately (Aprobato et al., 2014; Shete et al., 2023; Xu et al., 2018). The work of Irfan et al. (2024) and Robert et al. (2016), highlights that empirical investigation is needed to verify the possibility of such blends to enhance learner engagement and outcomes. Likewise, the effects of such blends on various learning environments, particularly in higher education, remain to be fully explored.

Educational institutions might comprehend the synergy between heutagogy and peer-led approaches for education as they stimulate greater involvement and ownership of the learning process. This combined approach may boost academic achievement and prepare learners for difficulties they might face in the real world through cultivating lifelong learning habits. The present study attempts to explore the following research questions so as to thoroughly investigate this synergy:

1. How do heutagogical strategies contribute to the development of lifelong learning skills in higher education students?

2. What role does peer-led learning play in promoting lifelong learning skills among higher education students?

3. Is there a synergistic association between heutagogy and peer-led learning models in enhancing lifelong learning skills in higher education students?

Methodology

Through a qualitative, narrative review method, this study looked at how heutagogy and PLL connect to foster lifelong learning competencies in higher education. Deductive thematic analysis was employed to conceptually analyse how these methods encourage each other and assist in learner development.

Review Protocol and Selection Criteria

A thorough search of academic databases, such as Google Scholar, JSTOR, ERIC, ScienceDirect, Semantic Scholar, and others, uncovered relevant results. Several keywords were applied: "heutagogy," "peer-led learning," "lifelong learning," "self-determined learning," and other pertinent terms. To optimise the retrieval of targeted and relevant studies, certain keyword searches (e.g., "heutagogy AND peer-led learning," "self-determined learning OR autonomous learning") and Boolean operators (AND, OR) were employed.

Inclusion Criteria: The studies were selected given the application of peer-led and autonomous learning methods, particular attention to higher education environments, and contributions to lifelong learning skills. The requirements for inclusion were conference papers, peer-reviewed publications in journals, review studies, and other works published from 2010 to 2024.

Exclusion criteria: Studies having limited significance for higher education that primarily cover K–12 or vocational training. Publications in languages other than English. Articles that do not concern lifelong learning skills or competencies.

Data Extraction and Analysis

After reviewing titles, abstracts, and full texts, 55 of the initial pool of 80 documents had been identified that satisfied the criteria for inclusion. The definitions, application methods, indicated benefits, and constraints related to heutagogy and peer-led learning have been taken into account while retrieving findings.

Synthesis Approach

Recurring themes such as autonomous learning, collaboration, critical thinking, and adaptability were identified through performing deductive thematic analysis on the data. The synthesis attempted to critically examine the theoretical foundations of both the methods' integration and the conceptual synergies between them.

Heutagogy and the Imperative of Lifelong Learning

The capability of learners to take on accountability for their own education and learning materials is made explicit by heutagogy. This method of instruction stimulates autonomy, reflection, and learner agency, extending beyond traditional instructional approaches (Blaschke, 2012; Glassner, 2019; Verma, 2024). The method closely matches the requirements of contemporary knowledge-based economies, which emphasise a high value on flexibility, autonomy, and lifelong learning (Verma & Verma, 2023).

Research suggests that learners' enthusiasm and involvement tend to improve as they have the freedom to determine their own learning pathways (Blaschke, 2012; Sujati et al., 2023). Self-reflection serves as a vital tool given that it encourages learners to look at their own growth and development critically, resulting in deeper comprehension and personal improvement (Nguyen & Zarra-Nezhad, 2023). These aspects are particularly significant in preparing learners for challenges in contemporary society that require problem-solving, time management, and resilience.

Adjustable course designs and collaborative learning projects serve as two prominent instances of heutagogy at action in higher education. According to Lock et al. (2021) and Vinayan et al.

(2020), these boost autonomy and authenticity by allowing learners to choose their areas of interest, establish targets, and take action on relevant issues. Learner autonomy is additionally facilitated by internet-based resources, which encourage collaboration among peers and knowledge creation, such as blogging and collaborative platforms (Agonács & Matos, 2019; Glassner, 2019).

Considering the widely recognised benefits associated with heutagogy, including enhanced motivation and the development of lifelong learning skills, there are some setbacks to its efficient application. Administrative norms and teacher preparedness can often be questioned, whilst teacher-led models give way to learner-centred alternatives. Furthermore, disengagement or cognitive overload could originate from the absence of the fundamental self-regulation abilities expected for proficiency in heutagogical environments (Hainsworth et al., 2022; Vinayan et al., 2020).

This means that although heutagogy offers a captivating framework for fostering lifelong learning, contextual variables like learner preparation, organisational flexibility, and the presence of supportive environments influence how effective it works. To maximise its transformational possibilities, heutagogical strategies need to be critically linked with scaffold and facilitation training.

Peer-Led Learning as a Collaborative Learning Pedagogy

Peer-led Led Learning (PLL) pertains to instructional approaches in which learners actively assist others as they learn in collaborative contexts, which are directed by their peers. PLL frequently results in welcoming and motivating learning environments by leveraging the simplicity and resemblance of interaction among peers (McAlpin et al., 2023). By establishing a feeling of competence and belonging, this interactive approach is being proven to boost student motivation and academic engagement (DSouza et al., 2023; Servin et al., 2023).

Several kinds of models highlight the significance of PLL. According to Graewingholt et al. (2023), peer tutoring promotes reciprocal learning perks, which include knowledge reinforcement and skill articulation through enabling learners to assist each other across the subject at hand. Group assignments involve collaborative enquiry methods to encourage critical thinking and understanding of subject matter (DSouza et al., 2023). In scholastic groups, on the other hand, unstructured study circles stimulate collaborative thought and meaning-making (Yin, 2023).

While addressing lifelong learning, PLL offers a significant contribution to the development of fundamental abilities, including empathy, teamwork, leadership, and communication.

Programmes such as Peer-Led Team Learning (PLTL) and Peer-Assisted Learning (PAL) create regulated environments in which learners assist peers while working collaboratively to address challenges, modelling real-world professional interactions (Brown et al., 2018; Martinez, 2022; Zha et al., 2019). These initiatives enhance learners' capacity to take part in self-reflection, collaborative leadership, and constructive criticism (Allison & Thompson, 2023; Dreyfuss et al., 2023).

The effectiveness of PLL differs based on the context. Although it emphasises peer accountability and collaborative responsibility, interpersonal relationships, facilitator training, and institutional frameworks may have a significant effect on outcomes. In contexts involving poor facilitating, peer competence variability may end up in inconsistent engagement or superficial involvement (Watts et al., 2023; Zha et al., 2019). As a result, for one to optimise the potential for learning from peer-led initiatives, professional guidance remains needed. PLL models, if properly organised, offer a possible pedagogic avenue for developing critical lifelong learning skills, even though they occasionally fail to be effective without careful planning and support.

Collaborative Autonomy: Synergistic Learning Approaches

A rising focus on synergistic approaches to enhance learner autonomy and engagement has been observed as a blending of heutagogy and PLL. PLL encourages collaboration and the acquisition of interpersonal abilities, while heutagogy puts a greater value on self-determined learning, wherein learners proactively lead their own learning. This intersection coincides with theories of social learning that highlight the significance of peer influence and modelling in learning contexts (Joo & Park, 2023) and constructivist perspectives that see the creation of knowledge as an outcome of social interactions (Sebatana & Dudu, 2021).

The notion that collaborative learning spaces strengthen learners' critical thinking, communication, and sense of belonging is backed by empirical evidence (Chukwuere, 2023; Murniati et al., 2023). Learners who had been participants of learning communities, for instance, exhibited a higher tendency to engage in autonomous and collaborative learning (Joo and Park, 2023). Peer-led attempts are additionally associated with stronger conceptual understanding and increased academic motivation (Caramori et al., 2019; Cheng et al., 2024).

The practical applications of these approaches in higher education is further shown through case studies. A problem-based learning framework in medical education that strengthened clinical reasoning and autonomy in learning (Kemp et al., 2022). Afandi et al. (2023) likewise mention a cross-institutional workshop that effectively implemented autonomous learning

concepts into curriculum reform attempts between McMaster University and Brazilian universities. The above instances generally indicate that heutagogical and peer-led approaches may be utilised to nurture adaptable, reflective learners who are capable of handling complex professional and educational environments.

The model, which centres on constructivist and social learning theories, illustrates how heutagogy and PLL could potentially be linked to encourage collaborative autonomy in learning (see figure 1). Improved academic performance is primarily an outcome of increased motivation and engagement prompted by the development of critical thinking, communication, and a sense of connection.

Figure 1. Conceptual Model of Synergistic Learning Approaches Integrating Heutagogy and PLL
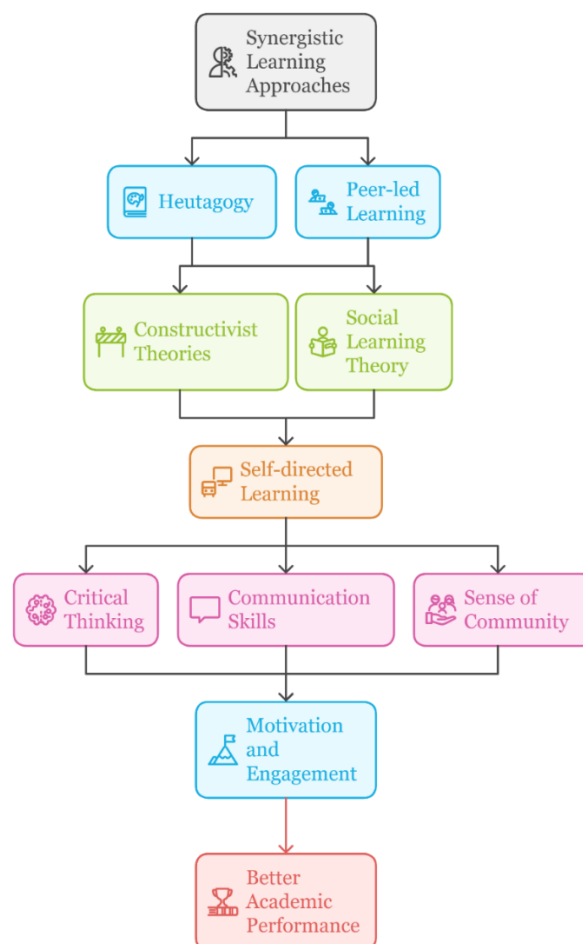
The Knowles Andragogical Model, which claims that adult learners thrive when they have authority over their learning process, especially while the learning is hands-on, problem-driven, and relevant to actual tasks, can be utilised to further comprehend this integration of autonomy and collaboration. Illeris' Three Dimensions of Learning, which takes into consideration social,

emotional, and cognitive aspects, presents a theoretical framework for recognising the way social interaction and autonomous learning interplay. Peer-led methods add to the interpersonal aspect through fostering discussions and collective knowledge creation, whereas heutagogy stimulates learners' cognitive and emotional engagement via individual action. The combined approach seems to be theoretically justified and feasible in practice to foster lifelong learning in higher education, as both approaches assist in the conceptualisation of a framework wherein learners are interpersonal and independent.

Synergy Conceptual Framework: An Ecosystemic View

While PLL and heutagogy have their roots in distinct pedagogical practices, they both seek to encourage lifelong learning by blending social collaboration with autonomy. When properly combined, these approaches may improve collaboration and offer a dynamic learning environment that promotes simultaneous self-reliance and interpersonal relationships. Constructivist and social learning theories facilitate this blend. While Bandura's social learning theory prioritises learning by interaction and observation, constructivism places a greater emphasis on the active creation of knowledge through experience. A combined approach draws from both, encouraging learners to direct their learning while engaging in critical dialogue with peers.

A layered learning ecosystem model (see Figure 2) may be utilised to illustrate this synergy, showing how peer-led collaboration and heutagogical autonomy interact in an encouraging learning space. The learners, who embrace autonomy in steering their learning process (heutagogy), are at the centre. Peers, who create opportunities for discussion, collaboration, and knowledge sharing, which encourages solidarity with one another and critical engagement (PLL), constitute the second layer. Both are enveloped by the educator layer, which assists and scaffolds the whole learning ecosystem without taking control.

Figure 2. Learning Ecosystem
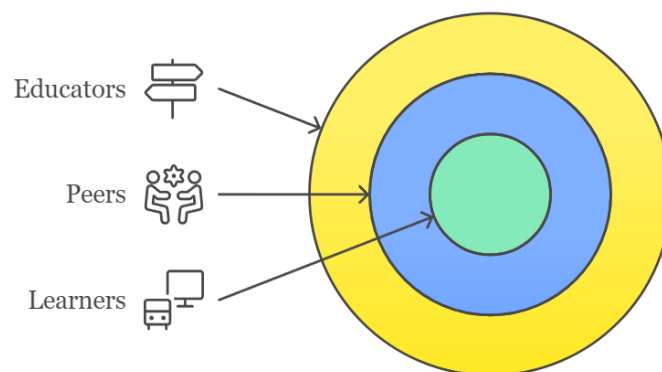
With heutagogical learning, learners may aim for personalised aims in a setting like this, while they may also benefit from the varied viewpoints of those around them. In this regard, engaging in a peer-led workgroup that offers feedback and shares solutions may lead to better outcomes for a learner working on a project on themselves. Such dual engagement equips learners for job environments in the workplace, where creativity and collaboration are necessary. Transferable skills, including interpersonal interaction, collaboration, and critical thinking, are nurtured by integrating heutagogy and PLL, enabling learners to effortlessly navigate difficult academic and professional challenges with flexibility and constant involvement.

Designing Synergistic Learning Environments: Concerns and Considerations

A steady push towards learner-centred education is symbolised by the integration of PLL and heutagogy. Despite their combination having considerable educational possibilities, it also presents structural and cognitive conflicts that need to be carefully weighed. A simple, uplifting perspective overlooks numerous problems that educational institutions and teachers must address for effective implementation.

Rethinking the Learning Environment: Beyond Participation

This model's core concept is to reinterpret the learning environment to be transformative instead of simply participative. In theoretical terms, such integration ought to end up in a vibrant, dynamic ecosystem that achieves an equilibrium between reliance and autonomy. However, one shouldn't assume such synergy. The complex nature of learner and institution preparedness is oversimplified by the belief that higher levels of autonomy and engagement inevitably result in increased engagement.

Pedagogical Tensions and Design Challenges

Facilitation, not Instruction, is a Paradigm Shift

The shifting responsibilities of the educator represent one of the most significant challenges. The equilibrium between autonomy and structure needs to be mediated through facilitation. While excessive engagement may result in an inevitable retreat to conventional methods of instruction, insufficient engagement might lead to uncertainty and obstruct learning. The dual responsibility to encourage constructive collaboration among peers and guide autonomous learning conflicts with conventional pedagogical practice.

Autonomy vs. Collaboration: A False Dichotomy?

The perceived tension between autonomy and collaboration requires thoughtful deliberation. In fact, learners demand each. Learners who are given excessive autonomy can grow detached, which reduces their exposure to criticism and opposing perspectives. The frequent use of

collaborative endeavours, on the other hand, may end up in superficial consensus and a dilution of individual work. If one wants to maintain individual agency while encouraging learners to make effective use of social learning frameworks, a pedagogically sound model should purposefully establish connections between them.

Learner Diversity as a Design Imperative

Likewise, the integration takes a belief that learners are competent and motivated, which might not be true for all pupils. The extent to which learners seem comfortable with digital interaction, collaborative responsibilities, and unstructured learning differs considerably. It has been desirable and challenging to establish comprehensive ecosystems that are responsive to a variety of learning needs while resorting back to one-size-fits-all models.

Toward Pragmatic Solutions: Scaffolding Synergy

Pedagogical designs require structured autonomy as a way to cope with these problems, enabling learners with micro-level choice while upholding macro-level goals. This approach offers an adequate framework to promote collaboration among peers while maintaining the fundamental principles of heutagogy. The teacher additionally has to assume the role of facilitator, involving constant constructive criticism, provocative enquiries, and flexible instruction.

Fostering a positive mindset for learning requires diligence and shouldn't be taken carelessly. Peer accountability, psychological safety, and universal norms for communication and collaboration have all been essential for maintaining interactional complexity. Both heutagogical and peer-led paradigms equally necessitate learners to have the ability to articulate their thoughts clearly, question preconceived notions, and explore intellectual risks.

Of course, technology needs to be utilised deliberately instead of exclusively as an instrument. Asynchronous forums, collaborative papers, peer review tools, and digital portfolios are a few instances of ways in which learning systems may encourage both autonomy and collaboration. Rather than simply improving instructions, these technologies must additionally modernise how the learning is organised, accessed, and evaluated.

Implications for Higher Education

Pedagogical Implications

Higher education demands a paradigm shift in learning design so as to integrate heutagogy and PLL. Learner-centred strategies, which make autonomy, collaboration, and reflective practice a priority, should take the place of traditional, teacher-centered strategies. Teachers are more

than just knowledge carriers; they also create learning environments wherein learners may proactively steer their very own learning pathways.

Flipped classrooms are a kind of pragmatic learning practice wherein learners engage alone on fundamental subjects while reinforcing their understanding through collaborative learning. autonomy is likewise supported with learning through projects, which includes constructive criticism and collaboration within the learning process. These approaches foster transferable skills that are required for lifelong learning, alongside stimulating critical thinking.

As opposed to simply optional, utilisation of digital technologies has been considered intentional. Discussion forums and Google Workspace are a few instances of such tools that could facilitate both individual study and group collaboration. These media offer potentially individualised, easily accessible, and socially engaged learning environments, provided they've been carefully integrated.

Policy Implications

Implementing these pedagogies requires supporting regulations from the administrative standpoint. Offering faculty development involves offering them 0specialised instruction that empowers them with the skills to be reflective facilitators instead of dominating lecturers. To be able to accommodate each autonomous and collaborative learning style, the curriculum needs to be adaptable in how they are delivered and evaluated.

On a wider scale, these methods correspond with the objectives outlined in national policy documents like the NEP 2020. Heutagogy and PLL closely supplement the NEP's ambitions for moving towards learner autonomy, critical thinking, interdisciplinary, and lifelong learning. Consequently, localised modifications fall in sync with national educational goals when these pedagogies are integrated into institutional practices.

 Implementing such approaches further assists in developing a workforce that is prepared for tomorrow's demands. Higher education institutions encourage educational and socioeconomic aspirations through providing learners the means required to learn on their own, collaborate with others, and adapt to varying contexts. These modifications involve deliberate inputs in national capacity-building in lieu of mere enhancements to training.

Limitations

This study presents a conceptual inquiry lacking empirical backing, which limits the extent to which its findings could be generalised. The practicality of the integrated heutagogy–peer-led approach in various kinds of cultural and institutional contexts remains unclear, given disparities among technological infrastructure, teacher and learner readiness. Despite the

theoretical basis of the framework, concerns such as inconsistent digital access, varied pedagogical capacity, and distinct individuality and collaboration capabilities may arise during actual implementation. The study leaves out procedures for assessment within this integrated framework, and the convergence between heutagogical and peer-led principles could lead to conceptual uncertainty.

Conclusion

The synergistic potential of integrating PLL and heutagogy for developing lifelong learning skills in higher education has been thoroughly explored in this study. It anticipated an integrated framework that establishes an equilibrium between learner autonomy and collaborative engagement, drawing on theoretical foundations found in constructivist, andragogical, and social learning theories. The findings obtained from this review indicate that PLL facilitates social interaction, communication, and collaborative meaningfulness, whereas heutagogy fosters self-direction, critical reflection, and adaptations. Together, these strategies offer a learner-centred culture which encourages the development of the skills required for effectively navigating challenging academic and professional situations. A shift in the responsibilities of educators from instructors to facilitators, meticulous preparation, and administrative adaptation are required, enabling the implementation of such a dual approach. To appropriately put into effect this synergy, limitations concerning assessment design, technology infrastructure, and learner diversity need to be addressed. The integration enables a pedagogical approach that is adaptable to contemporary educational requirements and predictive of future learning needs, and it is in line with national policy goals. Ultimately, this study calls on educational institutions to welcome, adjust, and analyse integrated pedagogies that enable learners to become autonomous, collaborative, and lifelong learners. It further establishes the groundwork for future empirical investigation.

References

Afandi, N. T. Y., Surindra, N. B., Irmayanti, N. E., Arifin, N. Z., Prastyaningtyas, N. E. W., & Anggraini, N. a. S. N. (2023). Development of Autonomous Learning-Based bank and Financial institution textbooks to improve the quality of learning. *International Journal of Humanities Education and Social Sciences (IJHESS)*, *2*(6). https://doi.org/10.55227/ijhess.v2i6.524

Agonács, N., & Matos, J. F. (2019). Heutagogy and self-determined learning: a review of the published literature on the application and implementation of the theory. *Open Learning the Journal of Open Distance and e-Learning*, *34*(3), 223–240.

https://doi.org/10.1080/0268051
3.2018.1562329

Al-Hassan, M., & Omari, E. A. (2023). Simulation as a tool for continuous professional development Unveiling excellence: Harnessing simulation for lifelong learning in nursing practice. *Saudi Journal of Nursing and Health Care*, *6*(10), 346–353. https://doi.org/10.36348/sjnhc.2023.v06i10.005

Allison, C., & Thompson, K. (2023). Increasing capacity by moving away from one-to-one clinical supervision: using peer-assisted learning and a group model of student placements in community paediatric speech and language therapy to enable student-led service delivery. *International Journal of Language & Communication Disorders*, *58*(6), 2200–2211. https://doi.org/10.1111/1460-6984.12936

Alt, D., Raichel, N., & Naamati-Schneider, L. (2022). Higher education Students' reflective journal writing and Lifelong learning skills: Insights from an Exploratory Sequential study. *Frontiers in Psychology*, *12*. https://doi.org/10.3389/fpsyg.2021.707168

Aprobato, G. S., Lorenzi, L. J., Da Silva Sobrinho, A. C., Ferreira, L. K., Schwenger, L. L., Coco, T. G. D. S., Guerra, P. H., & De Oliveira Gomes, G. A. (2024). Characteristics of peer-led physical activity programs for older adults: a scoping review. *Geriatrics Gerontology and Aging*, *18*. https://doi.org/10.53886/gga.e0000154_en

Aspin, D. N., & Chapman, J. D. (2000). Lifelong learning: concepts and conceptions. *International Journal of Lifelong Education*, *19*(1), 2–19. https://doi.org/10.1080/02601370029342 1

Baleca, M. (2023). Considerations for national validation mechanism of lifelong learning outcomes in non-formal and informal contexts. *Acta Et Commentationes Ştiinţe Ale Educaţiei*, *31*(1), 164–173. https://doi.org/10.36120/2587-3636.v31i1.164-173

Bhardwaj, N., Lee, W., & Campbell, K. M. (2024). Using the jigsaw method to improve resident confidence and medical knowledge about osteoporosis in men. *Journal of CME*, *13*(1). https://doi.org/10.1080/28338073.2024.2384546

Blaschke, L. M. (2012). Heutagogy and lifelong learning: A review of heutagogical practice and self-determined learning. *The International Review of Research in Open and Distributed Learning*, *13*(1), 56. https://doi.org/10.19173/irrodl.v13i1.1076

Brown, J., Stringer, N., Anderson, R., & Whisler, L. (2018). Supporting Student Learning Through Peer-led Course Support Initiatives. In *2018 ASEE Annual Conference & Exposition*. ASEE. https://doi.org/10.18260/1-2--31036

Caramori, J. C. T., Abbade, L. P., Weber, S. a. T., Neto, A. a. P., Reis, G., Oliveira, R., & Thabane, L. (2019). Sharing best practices in applications of evidence-based medicine,

problem-based learning and autonomous learning principles in medical training: A McMaster-Brazil collaboration workshop report. *MedEdPublish*, *8*, 67. https://doi.org/10.15694/mep.2019.000067.1

Cheng, C., Hung, C., Chen, Y., Liou, S., & Chu, T. (2024). Effects of an unfolding case study on clinical reasoning, autonomous learning, and team collaboration of undergraduate nursing students: A mixed methods study. *Nurse Education Today*, *137*, 106168. https://doi.org/10.1016/j.nedt.2024.106168

Chukwuere, J. E. (2023). Exploring the application of autonomous and cooperative learning in information systems education: a critical analysis. *Journal of Science and Education (JSE)*, *3*(3), 232–249. https://doi.org/10.56003/jse.v3i3.216

Çilek, A., Çoban, F. N., & ÇetiN, E. (2023). Examining the lifelong learning competencies of teachers. *Journal of Teacher Education and Lifelong Learning*, *5*(1), 439–447. https://doi.org/10.51535/tell.1312486

Cogavin, D. (2023). Labour-power production and the skills agenda in lifelong learning: A critical policy analysis of the Skills and Post-16 Education Act 2022. *Policy Futures in Education*, *22*(5), 774–792. https://doi.org/10.1177/14782103231183282

Dorfman-Furman, G., & Weissman, Z. (2024). Engineering the Future: Student Perceptions on Soft Skills and Lifelong Learning in Electronic Engineering Education. In *2024 IEEE World Engineering Education Conference (EDUNINE)*. IEEE. https://doi.org/10.1109/edunine60625.2024.10500680

Dreyfuss, A., Barlow, A., Fraiman, A., & Becvar, J. E. (2023). Instructional engagement in person and online: making the case for Peer-Led team learning. *Advances in PLL*, *3*, 77–89. https://doi.org/10.54935/apll2023-01-06-77

DSouza, K., Zhu, L., Varma-Nelson, P., Fang, S., & Mukhopadhyay, S. (2023). AI-Augmented Peer Led Team Learning for STEM Education. In *2023 IEEE 17th International Symposium on Applied Computational Intelligence and Informatics (SACI)*. IEEE. https://doi.org/10.1109/saci58269.2023.10158609

Dunham, S. (2015). Developing Lifelong Learning Skills through Self-Directed Learning in the Gross Anatomy Laboratory using Narrated Digital Slideshows. *The FASEB Journal*, *29*(S1). https://doi.org/10.1096/fasebj.29.1_supplement.551.8

Gandhi, R. (2022). Significance of New Education Policy (NEP) 2020 for Adult Education and Lifelong Learning Program. *International Journal of Management Technology and Social Sciences*, 79–95. https://doi.org/10.47992/ijmts.2581.6012.0179

García-Martínez, J. A., González-Sanmamed, M., & Muñoz-Carril, P. (2023). Lifelong

learning and personal learning environments: a productive symbiosis in higher education. *Revista Complutense De Educación*, *34*(1), 167–177. https://doi.org/10.5209/rced.772 32

Glassner, A. (2019). Heutagogy (Self-Determined Learning): New approach to student learning in higher education. *Proceedings of the 2019 AERA Annual Meeting*. https://doi.org/10.3102/1429487

Graewingholt, M., Cornforth, J., & Parramore, S. (2023). Better together: experiential learning in peer-led research services. *Reference Services Review*, *51*(2), 151–170. https://doi.org/10.1108/rsr-09-2022-0043

Güven, Z. Z. (2020). LIFELONG LEARNING SKILLS IN HIGHER EDUCATION: A CASE STUDY BASED ON THE STUDENTS' VIEWS. *Turquoise International Journal of Educational Research and Social Studies*, *2*(2), 20–30. https://files.eric.ed.gov/fulltext/ ED610205.pdf

Hainsworth, N., Dowse, E., Cummins, A., Ebert, L., & Foureur, M. (2022). Heutagogy: A self-determined learning approach for Midwifery Continuity of Care experiences. *Nurse Education in Practice*, *60*, 103329. https://doi.org/10.1016/j.nepr.20 22.103329

Irfan, M., Asim, N., Fouda, S. S., & Alberto, I. (2024). 369 Addressing inconsistencies in surgery teaching at UK medical schools through near Peer-Led interventions. *British Journal of Surgery*, *111*(Supplement_6). https://doi.org/10.1093/bjs/znae 163.628

Joo, H., DO, & Park, S. H. (2023). Analysis of the Effectiveness of Learning Community Program for College students: Focusing on autonomous learning ability, self-regulatory efficacy, collaboration preference, and communication skill. *Korean Association for Learner-Centered Curriculum and Instruction*, *23*(8), 741–758. https://doi.org/10.22251/jlcci.20 23.23.8.741

Kemp, K., Baxa, D., & Cortes, C. (2022). Exploration of a Collaborative Autonomous Learning Model in Medical Education. *Medical Science Educator*, *32*(1), 195–207. https://doi.org/10.1007/s40670-021-01493-7

Lock, J., Lakhal, S., Cleveland-Innes, M., Arancibia, P., Dell, D., & De Silva, N. (2021). Creating technology-enabled lifelong learning: A heutagogical approach. *British Journal of Educational Technology*, *52*(4), 1646–1662. https://doi.org/10.1111/bjet.131 22

Lucas, B., & Venckute, M. (2020). Creativity â a transversal skill for lifelong learning. An overview of existing concepts and practices: Literature review report. *RePEc: Research Papers in Economics*. https://doi.org/10.2760/557196

Madrazo, L., Lee, C. B., McConnell, M., Khamisa, K., & Pugh, D. (2019). No observed effect of a student-led mock objective structured clinical examination on

subsequent performance scores in medical students in Canada. *Journal of Educational Evaluation for Health Professions*, *16*, 14. https://doi.org/10.3352/jeehp.2019.16.14

Martinez, G. S. (2022). The impact of Peer-Led Team Learning (PLTL) on the life of a Latina. *Advances in PLL*, *2*, 9. https://doi.org/10.54935/apll2022-01-09-111

McAlpin, J. D., Kulatunga, U., & Lewis, J. E. (2023). Using social influence models to characterize student interest in a general chemistry peer-led team learning setting. *Chemistry Education Research and Practice*, *24*(3), 1003–1024. https://doi.org/10.1039/d2rp00296e

Mejía-Manzano, L. A., Sirkis, G., Rojas, J., Gallardo, K., Vázquez-Villegas, P., Camacho-Zuñiga, C., Membrillo-Hernández, J., & Caratozzolo, P. (2022). Embracing thinking diversity in higher education to achieve a lifelong learning culture. *Education Sciences*, *12*(12), 913. https://doi.org/10.3390/educsci12120913

Mulisa, F., & Mekonnen, S. K. (2018). *The roles of a peer-led collaborative learning approach in Ethiopian secondary schools*. https://www.ajol.info/index.php/bdje/article/view/248724

Murniati, C. T., Hartono, H., & Nugroho, A. C. (2023). The challenges, supports, and strategies of autonomous learning among college students. *Journal of Education and Learning (EduLearn)*, *17*(3),

365–373. https://doi.org/10.11591/edulearn.v17i3.20744

Murugova, E., Bulankina, N., Molokova, A., & Mishutina, O. (2021). Comprehensive model of safe educational spaces and lifelong learning for educators: regional approach. *E3S Web of Conferences*, *273*, 12156. https://doi.org/10.1051/e3sconf/202127312156

Nguyen, H. L., & Zarra-Nezhad, M. (2023). Enhancing sustainable lifelong learning in higher education for uncertain transitions: a mixed method investigation into Vietnamese undergraduates' strategies. *International Journal of Lifelong Education*, *42*(4), 389–405. https://doi.org/10.1080/02601370.2023.2226346

Robert, J., Lewis, S. E., Oueini, R., & Mapugay, A. (2016). Coordinated implementation and evaluation of flipped classes and Peer-Led team learning in general chemistry. *Journal of Chemical Education*, *93*(12), 1993–1998. https://doi.org/10.1021/acs.jchemed.6b00395

Sebatana, M. J., & Dudu, W. T. (2021). Exploring collaboration as a 21st-century skill to enhance autonomous learning while teaching particulate nature of matter through problembased learning. In *NWU autonomous learning series* (pp. 193–210). https://doi.org/10.4102/aosis.2021.bk279.08

Servin, C., Pagel, M., & Webb, E. (2023). An Authentic Peer-Led Team Learning Program for Community Colleges: A

Recruitment, Retention, and Completion Instrument for Face-to-Face and Online Modality. In *SIGCSE 2023: Proceedings of the 54th ACM Technical Symposium on Computer Science Education*. Association for Computing Machinery. https://doi.org/10.1145/3545945.3569851

Shete, K., Raisharma, S., Khandare, A., Kharwat, G., & Patil, D. (2023). Strategies for Engineering Pedagogy to Improve Peer-based & Autonomous-learning through Technical Student Clubs. *Journal of Engineering Education/Journal of Engineering Education Transformations/Journal of Engineering Education Transformation*, *35*(S2), 35–43. https://doi.org/10.16920/jeet/2022/v35is3/22136

Sujati, K. I., Syamsudin, A., Pulungan, D. A., Apriani, E., & Puspitaningrum, N. P. D. (2023). Promoting Freedom Learning Implementation through Self-Determined Learning: A Study of Students' Perspectives. *Jurnal Kependidikan Penelitian Inovasi Pembelajaran*, *7*(1). https://doi.org/10.21831/jk.v7i1.37374

Sutherland, P., & Crowther, J. (2008). Lifelong learning. In *Routledge eBooks*. https://doi.org/10.4324/9780203936207

Swain-Oropeza, R., Galván-Galván, J. A., Lara-Prieto, V., Román-Flores, A., & Forte-Celaya, M. R. (2023). Tec21: Developing Skills for Lifelong Learning – Focusing on Essential Skills, Upskilling and Reskilling. In *2023 World Engineering Education Forum - Global Engineering Deans Council (WEEF-GEDC)* (pp. 1–6). IEEE. https://doi.org/10.1109/weef-gedc59520.2023.10344292

Thwe, W. P., & Kálmán, A. (2023). Lifelong Learning in the Educational Setting: A Systematic Literature review. *The Asia-Pacific Education Researcher*, *33*(2), 407–417. https://doi.org/10.1007/s40299-023-00738-w

Tuckett, A. (2023). Lifelong learning, young adults and the challenges of disadvantage in Europe. *International Review of Education*, *69*(4), 583–587. https://doi.org/10.1007/s11159-023-10022-0

Valler-Jones, T. (2014). The impact of peer-led simulations on student nurses. *British Journal of Nursing*, *23*(6), 321–326. https://doi.org/10.12968/bjon.2014.23.6.321

Verma, V. (2024). The Art of Learning How to Learn: A Heutagogical Approach to Lifelong Learning in Higher Education. *University News: A Weekly Journal of Higher Education*, *62*(34), 33–39. https://www.researchgate.net/publication/384890408_The_Art_of_Learning_How_to_Learn_A_Heutagogical_Approach_to_Lifelong_Learning_in_Higher_Education

Verma, V., & Verma, R. (2023). Nurturing Learning Agility: Investigating Self-Determined Learning and Skill Enhancement during COVID-19. *Journal of Teacher Education and Research*, *18*(02), 12–16.

https://doi.org/10.36268/jter/18204

Vinayan, N. G., Harikirishanan, D., & Ling, N. S. M. (2020). Upskilling and reskilling the workforce via industry driven technical and vocational education and training: Strategies to Initiate Industry/Institution Partnership in Malaysia. *Journal of Economic Info*, *7*(2), 94–103. https://doi.org/10.31580/jei.v7i2.1438

Watts, N., Farman, N., & Van Woerden, N. (2023). Learning the lessons for public health from the COVID-19 pandemic across British island communities: findings of a peer support group based on action learning. *Rural and Remote Health*. https://doi.org/10.22605/rrh7136

Xu, C., Kwon, O., But, J., Mendoza, B., Liou-Mark, J., & Ostrom, R.

(2018). Peer-led Team Learning Bridges the Learning Gap in a First-Year Engineering Technology Course. In *2018 ASEE Mid-Atlantic Section Spring Conference*. https://doi.org/10.18260/1-2--29471

Yin, X. (2023). Promoting peer learning in education: Exploring continuous action iterated dilemma and team leader rotation mechanism in peer-led instruction. *Electronic Research Archive*, *31*(11), 6552–6563. https://doi.org/10.3934/era.2023331

Zha, S., Estes, M. D., & Xu, L. (2019). A meta-analysis on the effect of duration, task, and training in PLL. *Journal of Peer Learning*, *12*, 2. https://ro.uow.edu.au/cgi/viewcontent.cgi?article=1153&context=ajpl

The Child Sex Ratio in India: Real Improvement or a Statistical Illusion?

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Abstract

This paper highlights the importance availability of appropriate data on the child sex ratio and sex ratio at birth. Using secondary data such as the Census of India reports, Sample Registration System Report-2020, and NFHS-I, II, III, IV, and V, it tries to examine the difference in the SRB among them. It has been found that the recent NFHS-V reports the SRB higher than that of the Sample Registration System-2020 report, which estimates the birth and death rates comparatively more accurately. The result of the Paired T-test also shows the statistical difference in the state-wise SRB. Generally, the NFHS records the SRB higher than that of the SRS. Son preference is still shaping the couple's attitudes toward girl children. Most of the women who had two daughters wanted another child. But if they have two sons, they prefer no more children. The enumeration of the Census data is the need of the hour. Only then, the actual situation be known.

Keywords: *Child Sex Ratio, Sex Ratio at Birth, Female Foeticide, Infanticide.*

Introduction

India has a long history of female infanticide, and it has turned into foeticide after the widespread availability of new technologies. The female-to-male ratio (0-6), commonly known as the child sex ratio, has been consistently lower in all census enumerations since independence. For the first time, the Government of India took this matter seriously and enacted the PNDT Act, in 1994, and later amended it as the PC and PNDT Act in 2003. This act provided more teeth to the legal authority to deal with the matters of sex-selective abortions in India. However, the next census in 2001 alarmed the county once again. It showed that the child sex ratio has fallen sharply. The subsequent Census again shocked the government, policymakers, and academicians. There was a huge drop in the CSR in 2011. After that, there are no official Census estimates. However, recent data from the National Family Health Survey-5 show a significant improvement in the sex ratio at birth, another measure of the female-to-male ratio in the child population. The government has welcomed this finding and shown it as the outcome of its Beti Bachao, Beti Padhao scheme. This is the main point from which this paper tries to advance its argument. It focuses on a single basic question. Whether the child sex ratio is improving or it is only a data mirage?

Review of Literature

Clark (2000) worked to test the connections between the desire for sons and the fertility that directly or indirectly affects the size and sex composition of the child population. She opined that the effect of son preference on gender imbalance is undetectable through the national estimates. Arnold et al. (2002) studied the child sex ratio using the Census 2001 and NFHS-2 data. They argued that even after enacting the law for stopping sex elective abortions, it has increased in the last decade. Masculinizing the child sex ratio is a clear indication of the gender-induced abortions in India, particularly in Gujarat, Haryana, and Punjab. They claimed that ultrasound and amniocentesis techniques are aggravating the situation. They estimated that approximately 1.3 million female fetuses were aborted per year in India. The PNDT Act of 1994 has not worked due to strong son preference in India. Bhat and Zavier (2007) in their study searched for factors behind the usage of prenatal diagnostic techniques and the falling sex ratio at birth. They argue that the SRB is normal in the Southern and Eastern parts of India. Although there is a possibility of a low difference in the SRB between rural and urban areas, the highly educated class has the lowest SRB. Their multivariate analysis rules out the possibility of a clear-cut relationship between the usage of PNDT and urbanization, women's education, higher standard of living, working status, and exposure to media. This is because of the inadequate sample size of PNDT users in the NFHS survey. Srinivasan and Bedi (2012) carried out a study in Tamil Nadu. They concluded that the improvement in CSR is the outcome of the decline in gender differentials in the mortality rate along with a stable child sex ratio at birth. They also favored the government's proactiveness and the efforts of NGOs in solving the problem. Kumar and Satyanarayana (2012) worked to find out the relationship between the sex ratio at birth and the crude birth rate to examine the effect of fertility transition. They concluded that the districts with a low birth rate exhibited a small decline in their SRB, and the districts with a high birth rate recorded a larger deterioration in the SRB. They strongly predicted that a falling fertility rate would necessarily masculinize the CSR. Yadav et. al (2020) analyzed the relationship between CSR and total fertility rate (TFR) using the panel data fixed effect model. They concluded that the child sex ratio is strongly correlated with fertility rates. They estimate that, for every one-unit increase in the TFR, there is an 8.6-unit increase in the CSR. The higher fertility districts have a high child-sex ratio. The percentage of urban population, female literacy rate, and female work participation rate have a positive relationship with CSR, and the percentage of SC population to the total population also shows a positive association.

Objective

The paper tries to examine the appropriateness of available data on the child sex ratio in India. Using two major sources, the Sample Registration System and the National Family Health Survey, it explores the possibility of overestimation of the sex ratio at birth in the NFHS-V.

Hypothesis

Because the NFHS does not release data exactly on the child sex ratio, the researcher has used the data of the sex ratio at birth, which is a more refined measure of female foeticide and attitude toward daughters. The following hypothesis has been formulated-

Ho.- There is no significant difference in the SRB data of SRS-2020 and the NFHS-V report.

Ha..- There is a significant difference in the SRB data of SRS-2020 and the NFHS-V report.

Methods and Data Source

The paper is solely based on secondary data. Data have been taken from the various Census reports, NFHS-I, II, III, IV, and V, and the Sample Registration System reports. The Census is a decennial exercise of collecting the entire population's demographic, social, cultural, and economic information. It is a routine survey that has been conducted since 1871. The last Census was conducted in 2011. The National Family Health Survey is a large-scale sample-based survey. It has been conducted since 1992-93 by the National Institute of Population Sciences, Mumbai, under the Ministry of Health and Family Welfare. It provides information on fertility, infant and child mortality, reproductive health, family planning, etc. The sample registration system is also a large-scale survey that provides information on demographic indicators such as birth and death rates in the country.

The descriptive method has been used in this paper. Various techniques such as tables, bar diagrams, and trend lines have been used to depict the information. Additionally, the Paired T-test has been employed to compare the difference between the state-wise SRB data available in both SRS-2020 and NFHS-V reports.

Results and Discussion

Female infanticide has a long history in India and is rooted in its socio-economic and cultural life. It gained attention when the British government started conducting Census activities. After independence, the female-to-male ratio in every census was recorded as falling until 2011. The National Family Health Survey's various rounds also show the same trends in that period. As Graph 1 shows, the child sex ratio was 945 in 1991, decreased to 927 in 2001, and finally reached 918 in 2011. Graph 2 shows the sex ratio at birth, which is a more refined estimate of the sex ratio. The SRB has fallen in every survey period, except in the last survey. The SRB was 929 in NFHS-I, then increased minimally to 930 in the NFHS-II. It decreased at a faster

pace in NFHS-III and reached 918. It showed a very small improvement of 1 point in the NFHS-IV, then it impressively increased to 929.

Graph 1: Trends in Child Sex Ratio
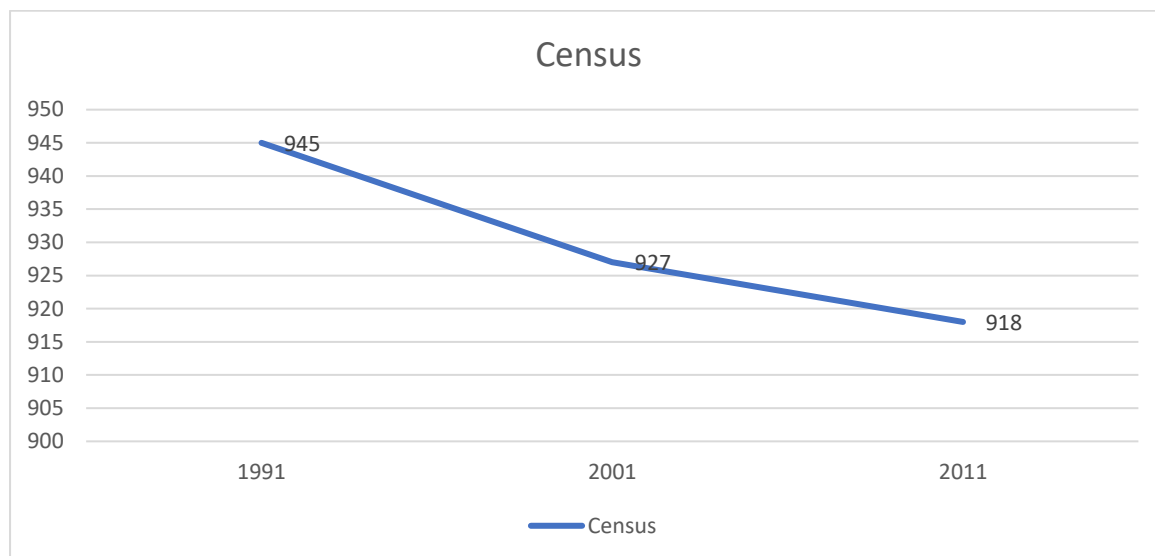
Source: Census of India- 1991, 2001, 2011

Graph 2: Sex Ratio at Birth
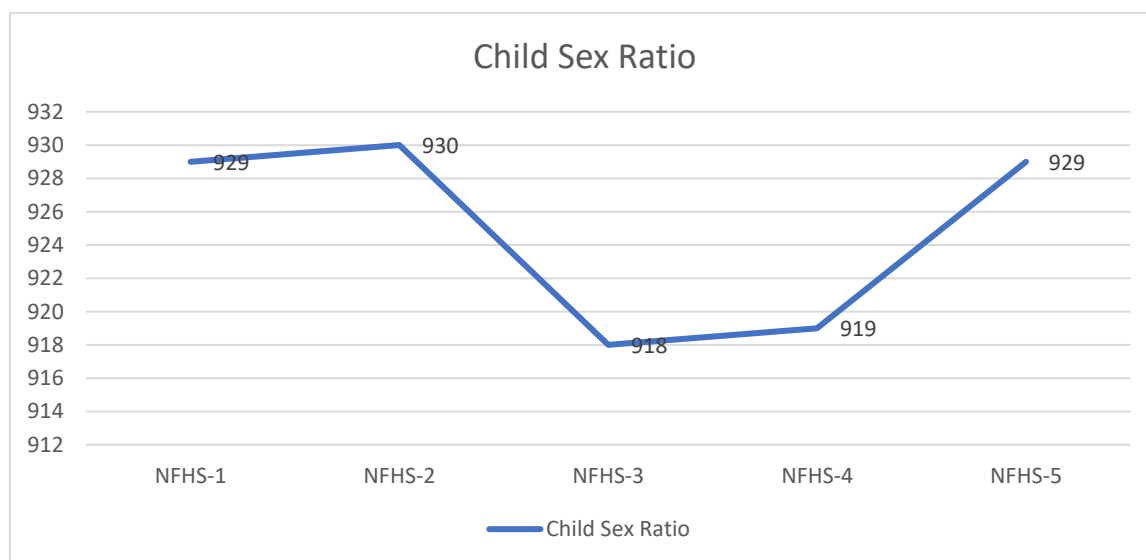
Source: NFHS-I, II, III, IV, V

The above arguments demonstrate the improvements in the sex ratio at birth from 2004-05 onwards. However, just six years after it, the Census 2011 recorded a huge deterioration in the child sex ratio. Another point that must be taken into consideration is that the normal SRB should be 952. It shows a healthy demographic profile of the country. But it is still 929 in NFHS-5, 22 points below the average. The NFHS rounds are survey-based enumeration exercises. There is a possibility that it may give an overestimation of a particular variable, particularly sex ratio, child sex ratio, or sex ratio at birth. This is what this paper tries to argue.

The Census provides more accurate data on population parameters. Therefore, NFHS findings are indicative, not the real picture of the problem ("Sex Ratio at Birth," 2021).

Variation in SRB data

There are two important sources available for estimating SRB: the Sample Registration System and the National Family Health Survey. Both reports present a different picture of the sex ratio at birth in India.

Table 1: Sex Ratio at Birth

India/States	SRS(2020)	NFHS-V (2019-21)	Difference
India	**907**	**929**	**22**
Andhra Pradesh	926	934	8
Assam	923	964	41
Bihar	895	908	13
Chhattisgarh	958	960	2
Gujarat	877	955	78
Haryana	870	893	23
Himachal Pradesh	950	875	-75
Jammu & Kashmir	921	976	55
Jharkhand	914	899	-15
Karnataka	916	978	62
Kerala	974	951	-23
Madhya Pradesh	919	956	37
Maharashtra	876	913	37
Orissa	925	894	-31
Punjab	897	904	7
Rajasthan	911	891	-20
Tamil Nadu	917	878	-39
Telangana	892	894	2
Uttar Pradesh	905	941	36
Uttarakhand	844	984	140
West Bengal	936	973	37

Source: Sample Registration Report (2020), National Family Health Survey-V (2019-21)

Table 1 shows the sex ratio at birth data shown in two different reports- the Sample Registration System and the National Family Health Survey. There is a difference in the SRB recorded by these two reports. In the SRS (2020) the SRB is 907 at the national level, while it is 929 in the NFHS-5 report. Even at the state level, the difference can be traced out. In most of the Indian states, the NFHS has recorded the SRB higher compared to the SRS. If we consider the data enumeration methodology of both reports, the sample registration system has a significant advantage over the NFHS. It is based on the dual record system and continuous collection of births and deaths in selected rural and urban areas.

The researcher has used the Paired T-test to give statistical insights. State-wise data from the SRS report (2020) and the NFHS-V report have been used to show the statistical difference. The data from twenty-one states are taken for analysis.

Table 2: Results of Paired T-test

Paired Sample Test						
Pair SRS (2020) 1 NFHS-V	Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
	-17.85	46.37	10.12	-1.70	20	.093

Source: Computed by the researcher

The above results show that the mean difference in the sex ratio at birth recorded in the two reports is -17.85. It means the SRS (2020) reports an SRB 17.85 points lower than the NFHS on average. The standard deviation is 46.37 and the standard error of the two means is 10.12.

At 20 degrees of freedom, the calculated value of t is -1.70. The p-value is .093. It means the difference is statistically significant at the 10 percent level of significance but not at the conventional 5 percent level. Hence, the null hypothesis is rejected and it can be concluded that there is a statistically significant (at 10 percent significance level) difference in the SRB of the two different sources. Since both reports employ different methodologies for collecting data, the findings of NFHS-V should be interpreted cautiously.

Son preference in India

Son preference is the main reason for the low sex ratio at birth. It indicates socio-economic and cultural causes. Since it is very complicated to measure it in numerical form, the NFHS uses several techniques to give a proxy measure of it.

Table 3: Married women with two living children wanting no more children

Sex Composition of Children	NFHS-I (1992-93)	NFHS-II (1998-99)	NFHS-III (2005-06)	NFHS-IV (2015-16)	NFHS-V (2019-21)
Two sons	71	82.7	89.9	89	91
One son, one Daughter	66	76.4	87	87	89
Two daughters	36.9	47	61.4	63	65

Source: NFHS-I, II, III, IV, & V

The above table shows the percentage of married women who already have two children and do not want another child. According to NFHS-I, seventy-one percent of women do not want another child if they have two sons. But sixty-six percent want no other child if they have one son and one daughter. Only 36.9 percent want no further children if they have two daughters. It means 63.1 percent want another child if they have only two daughters and only 29 percent want another child if they already have two sons in their family. In the NFHS-II, 82 percent of women reported no further children if they had two sons. 76.4 percent want no other children if they are raising one son and one daughter. But only 47 percent want no other children if they have two daughters. According to the NFHS-III report, 89.9 percent of women having two sons reported the desire for no other children. While 87 percent of women who had one son and one daughter reported the same. 61.4 percent of women who had two daughters reported no more desire for children in the family. According to the NFHS-IV report, 89 percent of women who had two sons did not want another child. However, 87 percent who had one son and one daughter did not want further children. Only 63 percent of women who had two daughters responded no further children. According to the NFHS-V, 91 percent of women who had two sons do not want the next child. 89 percent of women respondents who had one son and one daughter said the same. Only 65 percent of women who had two daughters wanted no more children in their family. Overall, the acceptability of daughters has increased over the years. But in each NFHS report, acceptance is low compared to sons. A higher percentage of women with two sons who don't want another child shows that sons are still preferred more in the country. Their socio-economic and cultural advantages still shape the fertility preference of couples. So, the deep exploration of NFHS data shows the presence of son preference and raises some concerns about the SRB data.

Conclusion

This paper aims to highlight the data concerning the sex composition of child population in India. The National Family Health Survey-V shows an improvement in the sex ratio at birth.

It is giving a comparatively more favorable situation for the girl child population. But, if the Sample Registration System Report-2020 is taken into consideration, it is quite clear that the SRB reported in the NFHS-V is high. The paper has shown a statistically significant difference between the SRB of both reports. The time period of both reports is more or less the same, but the methodology to collect data is different. Scholars regard the findings of SRS-2020 as more appropriate than those of NFHS-V in the context of the SRB. Discussion on son preference also shows its presence. Moreover, the NFHS finding should be treated as indicative. The Census enumeration has not been conducted since 2011. It counts each individual and his socio-economic characteristics. It gives a comparatively more appropriate measure of the child sex ratio and sex ratio at birth. So, the Census should be conducted immediately. Only then, the country can know whether the situation has improved as claimed in the NFHS-V report or it is only a data mirage.

References

Arnold, F., Choe, M. K., & Roy, T. K. (1998). Son Preference, the Family-building Process and Child Mortality in India. *Population Studies*, *52*(3), 301–315. https://doi.org/10.1080/0032472 031000150486

Bhat, P. N. M., & Zavier, A. J. F. (2007). Factors Influencing the Use of Prenatal Diagnostic Techniques and the Sex Ratio at Birth in India. *Economic and Political Weekly*, *42*(24), 2292–2303.

How the NFHS gets India's sex ratio wrong. (2025, January 7). Data For India. https://www.dataforindia.com/nf hs-sex-ratio/

Kumar, S., & Sathyanarayana, K. M. (2012). District-Level Estimates of Fertility and Implied Sex Ratio at Birth in India. *Economic and Political Weekly*, *47*(33), 66–72.

Sex Ratio at Birth: NFHS & SRS report different numbers across States. (2021, December 9). *FACTLY*.

https://factly.in/sex-ratio-at-birth-nfhs-srs-reports-present-different-numbers-across-states/

Srinivasan, S., & Bedi, A. S. (2012). Tackling Female Infanticide and Sex Selection in Tamil Nadu: A Failure? *Economic and Political Weekly*, *47*(45), 80–82.

Visaria, L. (2008). Improving the Child Sex Ratio: Role of Policy and Advocacy. *Economic and Political Weekly*, *43*(12/13), 34–37.

Yadav, A. K., Singh, A., & Ram, F. (2020). Association between the total fertility rate and under-five child sex ratio in India: A panel study among districts of the major states. *Journal of Biosocial Science*, *52*(4), 514–522. https://doi.org/10.1017/S002193 2019000592

CBCS in Higher Education: An Impact Analysis

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Abstract

The Choice-Based Credit System (CBCS) represents a major shift in the Indian higher education framework, aiming to enhance flexibility, encourage student-centred learning, and align curricula with global standards. Despite its potential, the impact of CBCS on faculty perceptions and its effectiveness in diverse academic streams remains a subject of debate. This study seeks to analyse the impact of CBCS on higher education at Chhatrapati Shahu Ji Maharaj University (CSJMU), Kanpur, focusing on faculty members from the Arts and Science streams. The objectives were to assess overall faculty perceptions of CBCS and to compare views between these two academic groups. A mixed-methods design was adopted, utilising a Teachers' Perception and Attitude Scale towards CBCS (TPAS-CBCS) and semi-structured interviews. Quantitative data from 70 faculty members were analysed using descriptive statistics and an independent samples t-test. Results indicated no significant difference in opinions between Arts and Science faculty members, suggesting a broadly shared perspective on CBCS. Qualitative insights highlighted both appreciation for flexibility and concerns over resource availability and implementation challenges. The findings imply that while CBCS is generally perceived positively and has the potential to promote interdisciplinary and student-centred approaches, its success depends on continuous faculty development, student guidance, and infrastructural support. This study offers valuable insights for policymakers and institutions aiming to strengthen CBCS implementation and improve higher education quality in India.

Keywords: CBCS, TPAS-CBCS, Grading System, Elective Subjects, Art Stream, Science Stream.

Introduction

The Choice Based Credit System (CBCS) has proved to be a milestone for the education system in India (Reddy, P.K., 2020). The CBCS is aimed at steering a multi-disciplinary approach to the class (Gupta, S., 2023). The class under the CBCS system has been designed in such a way that it can be reestablished as per the requirements of the education system and also ensure globalisation (Kumar, R., & Sharma, P., 2018). The curriculum includes optional studies in addition to basic subjects. Whereas the core subject is one of the required subjects that students must take to receive the designated degree, the optional subjects allow students to select any subject that interests them (Sharma, R., & Verma, K., 2017). Through rigidity in the classroom, this kind of CBCS program assists students in realising their potential and can consequently increase students' productivity at work. The class structure and credit allocation are rigid, based on the hours of tutoring and the course material. Relevant guidelines are also provided for the CBCS's incorporation of vocational chops, which will allow the campaigners to acquire these

skills (Sharma, P., & Reddy, K., 2018). Piecemeal from all of these, an offer has also been made to incorporate soft skills and value-added programs into the CBCS program, and plans have been made to periodically provide faculty members with relevant training to enable their successful implementation. CBCS equips students with the skills, knowledge, and capacities by coordinating the classroom with assiduity requirements and norms (Kumar, S., & Singh, R., 2019). Aside from this, several recommendations were made to raise the standard of education, like allowing students to select the courses they want to study.

Fig. 1- Conceptual Terminology Inherited in CBCS

Main Component of CBCS

Academic Year

The Choice-Based Credit System (CBCS) operates on the principle of two consecutive semesters, one odd and one even, which together constitute an academic year. A comprehensive grading system is implemented, wherein the assessment and evaluation of student performance in each subject are conducted after every semester.

Credit and Credit Points

Credit is a measure used to quantify the coursework. It establishes how many lesson hours must be completed each week. One credit is equal to one hour of tutorial or lecture instruction, or two hours of fieldwork or practical work each week.

Credit points serve as a metric to quantify the extent of coursework undertaken by a student. They indicate the number of instructional hours required per week. Specifically, one credit corresponds to one hour of lecture or tutorial instruction, or two hours of practical or fieldwork, per week throughout the semester.

Cumulative Grade Point Average (CGPA)

The same formula is used to determine the CGPA, accounting for every course that a student has taken during a program's semesters.

$$CGPA = \frac{\text{Total credit points secured by a student}}{\text{Total credit points for the semester}}$$

$$CGPA = \frac{Ci*Si.}{\text{Sum of Ci}}$$

Where Ci = Total Number of Credits in a semester.

Si = Semester Grade Point Average (SGPA)

Semester Grade Point Average (SGPA)

It serves as a gauge for the calibre of work completed over a semester. It is the proportion between the overall number of course credits taken during a semester and the total number of credit points earned by a student in all of the courses they registered for.

$$SGPA = \frac{\text{Credit Points secured by a student in a sem.}}{\text{Total course credit for that sem.}}$$

$$SGPA = \frac{Ci*Gi.}{\text{Sum of Ci}}$$

Where Gi = Grade point secured in a semester.

CGPA and SGPA shall be rounded to 2 decimal points.

Grade Point and Letter Grade

Each letter grade has a numerical weight on a 10-point scale. It gauges how well students performed in that particular subject.

Table 1 (Allocation of Later Grade and Grade Point)

S. No.	Letter Grade	Grade	Grade Point
1.	O	Outstanding	10
2.	A+	Excellent	9
3.	A	Very Good	8
4.	B+	Good	7
5.	B	Above Average	6
6.	C	Average	5
7.	P	Pass	4
8.	F	Fail	0
9.	Ab	Absent	0

Semester

A semester system was used by CBCS instead of a year-long academic plan. There will be 15–18 weeks of academic work in a semester, which is equal to 90 real teaching days. It is possible to schedule the even semester from January to June and the odd semester from July to December.

Transcript or Grade Card, or Certificate

After each semester, every enrolled student will be issued a grade certificate reflecting their academic performance. This certificate will include detailed information such as course code, course title, number of credits, and the grade secured in each course. Additionally, it will display the Semester Grade Point Average (SGPA) for that particular semester, as well as the Cumulative Grade Point Average (CGPA) attained up to that point.

Assessment

CBCS uses a new method in place of the traditional assessment system, where the basis of the traditional assessment was only the examination result. On the other hand, CBCS is based on classroom attendance, Co-Curricular Activities, and Extracurricular activities, so self-discipline is encouraged in the students.

Importance of CBCS

The Choice Base Credit System was introduced by the University Grant Commission (UGC-2015) to bring reforms in Higher Education, enhance learning opportunities, Providing Inter-university transfer of students, enhance educational quality, encourage vocational education in India, and give students the freedom to choose subjects in higher education according on their interests (Singh, R., & Kaur, P., 2018). After the CBCS system, Indian Education Started to be conducted according to the Semester System instead of annual, based on global standards (Kumar, S., & Srikant, S., 2016). Students can add interdisciplinary and intradisciplinary subjects to their curriculum voluntarily, so that the students can make school education interesting by including subjects of interest in their curriculum. and this way, a student affiliated with the science department can become a writer, and a student of the literature department can take Computer Education. In this sense, vocational education can be promoted in schools as well (Gupta, S., Sharma, M., & Shukla, P., 2025).

Shahid Mazid Bhat (2017) stated that the implementation of CBCS is a great initiative to improve higher education. The basic purpose is to enhance Academic Quality in all aspects, right from the curriculum to the teaching process to the examination and evaluation system. According to Chahal D. & Muneeb Manan (2017), it can be observed that very dull students, when kept engaged, may be able to get mastery over the subject and skill, and workload is not

the problem among the students. More involvement increases the ability of students. Aithal & Suresh Kumar (2016) suggest that the CBCS maintain the level of the Indian education system at per the global level and redefine the curriculum to keep pace with liberalisation and globalisation in Education. Along with the ability to transfer credits acquired, CBCS offers students a convenient way to go to other educational institutions located all over the world. So that CBCS is effective in the overall progression of the students, and also observe that teachers' experience varies experiences vary due to a different range of elective courses. Sanghi (2010) observed the CBCS system as a fair system, where students progress in the academic program not in terms of time but in terms of courses. Chaudhary (2012) defines CBCS as providing students with the option to choose additional subjects not related to core courses and therefore advocates CBCS, which can accommodate diverse choices of the students. Significant changes to the assessment and evaluation system are brought about by CBCS. The absence of an interdisciplinary approach has led to India losing its best students to other nations, according to Naidu & Sreedevi (2016). By enabling students to learn in an interdisciplinary way, where teachers from a variety of fields create a curriculum, teach the class, and grade the students, the CBCS will address this issue. Students are free to select the courses they want to take, learn at their own speed, enrol in extra classes, and earn more credits than they need. They contend that CBCS is essential to producing employable university graduates.

The researchers conducted a thorough analysis of various forms of relevant literature to establish a solid basis for their investigation of the CBCS system. The review of prior studies provided valuable guidance in shaping the framework and direction of this research. As CBCS has been relatively recently introduced in India, there is still a scarcity of comprehensive empirical studies exploring its practical implementation and impact across different academic streams (Gupta, S., & Singh, V., 2024). Therefore, this study plays a significant role in understanding the impact of CBCS in higher education in the context of Chhatrapati Shahu Ji Maharaj University (CSJMU). In this context, the study aims to examine the perceptions and attitudes of faculty members towards the implementation of CBCS at CSJMU, to investigate whether there is a significant difference in opinions between faculty members from the Arts and Science streams, and to explore the challenges and opportunities perceived by faculty members in the effective implementation of CBCS.

Objectives

1- To analyse the Impact of the Choice Based Credit System (CBCS) on the Indian Education System.

2- To compare the opinions on the impact of CBCS of faculty members of the Arts and Science departments.

Hypothesis

1- H0: There is no significant difference in mean scores of the opinions on the impact of CBCS between faculty members of the Arts and Science departments.

Methodology

In this study, the researchers collect and analyse both qualitative and Quantitative data therefore **Mixed Approach** (i.e. To elaborate on the impact of CBCS in higher education by qualitative approach and to compare the opinion on the impact of CBCS of the faculty members of the Arts and Science Stream by Quantitative Approach) is used by the researchers. In this study, the researchers want to know the Impact of the Choice Based Credit System on the Education System of different departments of CSJMU and compare the opinion on CBCS of Faculty Members of the Science and Arts Stream of CSJMU. therefore, this study is a **Descriptive type** of Research. In this study, the researchers gathered the opinions of the faculty members regarding the orientation of CBCS at different departments of CSJM. The researcher used the **Survey Method** in this study, and the researchers used the **T-Test** as a statistical technique for analysis of data.

The primary data related to the various objectives of the study have been collected from the sample drawn from faculty members of different departments of CSJM University. Therefore, this study relates to the following two populations to which the results of the study will be applicable:

Population-1: Faculty Members of the Arts, Humanities, and Social Science departments of CSJM University.

Population-2: Faculty Members of Science departments of CSJM University.

Sample

The study examined teachers' opinions on the Impact of CBCS on different aspects of the CBCS System. To elaborate on the impact of CBCS in higher education by a qualitative approach and to compare the opinion on the impact of CBCS of the faculty members of the Arts and Science Stream, 70 faculty members drawn from different departments constituted the sample.
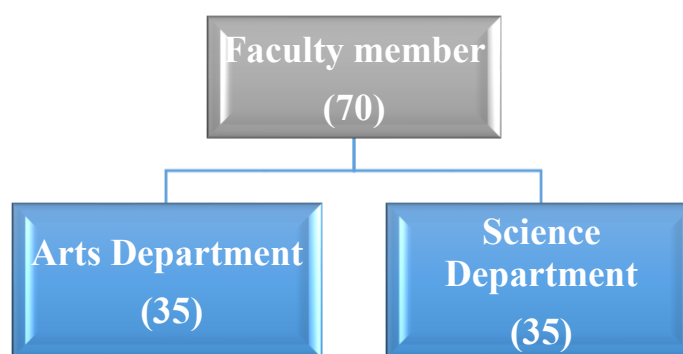
Fig. 2 Distribution of Sample

Sampling procedure

To study the actual challenges to implementing the CBCS, a comparative study of the opinions of faculty members of the Arts, Humanities, Social Science and Science departments. So, there will be 2 types of sampling procedures used for the selection of faculty members and the College and university.
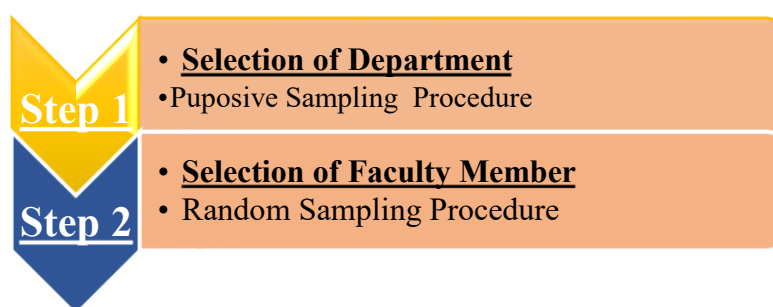
Fig. 3 Distribution of Sampling Procedure

Tool

The TPAS-CBCS scale consisted of 10 final statements after expert review, designed to measure faculty perceptions across key dimensions such as flexibility, student autonomy, interdisciplinary approach, grading satisfaction, and resource adequacy. Sample items included: "CBCS enhances the dynamism of higher education," "CBCS supports the development of vocational skills among students," and "The grading system in CBCS is better than the traditional system." Respondents rated their agreement on a 5-point Likert scale ranging from Strongly Disagree to Strongly Agree. The scale's content validity was ensured through expert review, and internal consistency was evaluated.

Finding and Analysis

The Researcher used not only a descriptive analysis but also an inferential analysis, which uses the researcher to draw inferences based on the table values and 't' values. The researcher used mean, standard deviation, and t-tests.

Table 2 Comparison of Opinions on CBCS Arts and Science Stream Faculty Members

Test	N	Mean	S.D.	Df	T-Value	P- Value
Art Stream	35	38.97	6.16			
				68	2.03	.36
Science Stream	35	40.38	6.11			

Df=6, Significance level at 0.05 level

The above table 2 and Figure 5 show that the mean score of faculty members of the Arts Stream was 38.97 and the mean score of faculty members of the Science Stream was 40.38, with a standard deviation of 6.16 and 6.11 respectively. The calculated 't' value ('t'= 2.03) is approximately equal to the table value (2.024) at 0.05 with df = 33. Hence, the null hypothesis "There is no significant difference in mean scores of the opinions on the impact of CBCS between faculty members of the Arts and Science departments" is accepted. therefore, it may be concluded that there is no significant difference among the opinions of faculty members of the Arts and Science Stream regarding CBCS implementation. This finding is supported by the findings of Sanghi (2010), Chaudhary (2012), Naidu & Sreedevi (2016), Kaur & Sharma (2016), Aithal & Suresh Kumar (2016), Chahal D. & Muneeb Manan (2017), Shahid Mazid Bhat (2017) used CBCS in their research and found that this change brought by CBCS has proved to be a milestone for the Indian education system.
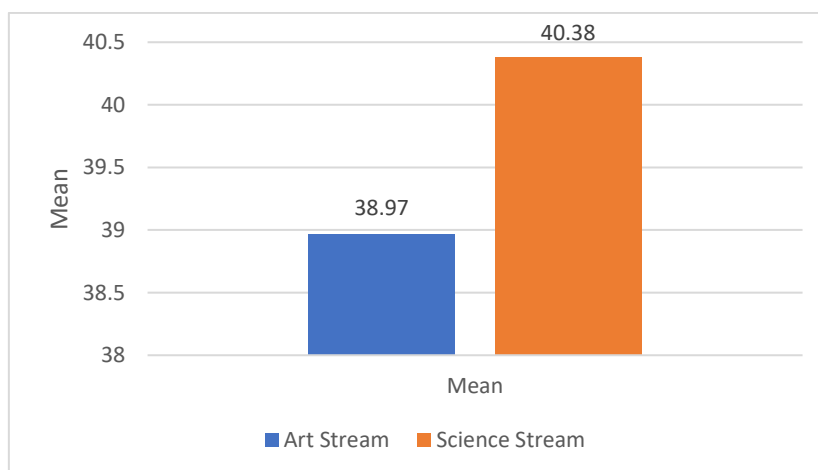
Fig. 4 Graphical representation of the mean scores of faculty members of both streams

Discussion

The curriculum of educational programs offers the option to select elective subjects based on students' interests and preferences in addition to core subjects, but students often lack expertise in this process (Reddy & Sharma, 2019). Therefore, proper guidance and counselling should

be provided to students before they choose their electives. Furthermore, training programs should be organised regularly to help teachers develop a strong understanding of the elective subjects included in the curriculum (Gupta, S., et al., 2025). The presence of such teaching-training programs makes the implementation of the Choice-Based Credit System (CBCS) more effective. Students may also face challenges due to a lack of resources in various educational institutions; thus, providing adequate resources in line with new norms can enhance the overall effectiveness of educational programs (Kumar & Gupta, 2021). Additionally, an overemphasis on elective courses may prevent students from achieving sufficient proficiency in core subjects. Therefore, greater emphasis should be placed on mastery of core subjects to ensure that their academic rigour is not compromised by elective choices (Gupta et al., 2024).

The absence of a significant difference in opinions between Arts and Science faculty members suggests that the implementation of CBCS is perceived similarly across diverse academic streams. This indicates that faculty, regardless of discipline, recognise common benefits such as increased flexibility, student autonomy, and alignment with global standards, as well as shared challenges related to resource constraints and adapting to new pedagogical practices. This finding implies a broadly unified perspective on CBCS, highlighting the need for institution-wide support measures rather than stream-specific interventions to strengthen its effectiveness. Moreover, qualitative data gathered through semi-structured interviews revealed that while faculty members appreciated the flexibility and interdisciplinary opportunities provided by CBCS, they also pointed out challenges such as a lack of training, inadequate resources, and difficulties in adapting to new assessment methods. These insights complement the quantitative findings and provide a deeper understanding of the practical barriers to effective CBCS implementation.

Conclusion

In this research paper, a comparative study is done among the faculty members of the Arts and Science Stream of CSJM University regarding the impact of the implementation of CBCS. The results obtained from this study show that there is no significant difference in opinion on CBCS among the faculty members of the Arts and Science Stream. CBCS has the potential to have a revolutionary effect on higher education in India by encouraging student-centric learning, improving relevance and quality, and encouraging creativity and teamwork in the academic environment. CBCS holds that in today's knowledge-based society, disciplines and subjects cannot be compartmentalised, and that students will gain the most from such a system (Gupta, S., & Singh, V., 2024). It will enable the student to stay up to date on the latest advancements in the subject, learn about it, and use what they have learned in their field (Patel, N., & Singh,

R., 2020). Additionally, it encourages students to explore different interests and, if feasible, pursue innovation in their sector. Graduate and post-graduate students in Western nations frequently study interdisciplinary studies, which aids 21 students in providing a deeper understanding of the applicability of one subject to other related fields (Smith, J., & Taylor, R., 2020). Universities are free to create examination and assessment procedures that best suit their curricula, syllabi, and teaching-learning strategies; nonetheless, a logical framework must be developed (Biggs, J., & Tang, C., 2011). Graduate and post-graduate students in Western nations frequently study interdisciplinary studies, which aids students in providing a deeper understanding of the applicability of one subject to other related fields (Klein, J.T., 2017, and OECD, 2019). Now with the help of the new education system, i.e., Choice Based Credit System, Indian Universities are also free to create examination and assessment procedures that best suit their curricula, syllabi, and teaching-learning strategies; nonetheless, a logical framework must be developed. It also aids in creating a positive learning environment because everyone is expected to participate in the learning process according to their aptitude and competency, cooperation and a positive work attitude are guaranteed and fostered among students, work commitment habits are reinforced, and the internationally recognized educational system is preserved because it allows for the simultaneous offering of multiple courses.

References

Aithal, P. S., & Kumar, P. M. S. (2016). Analysis of Choice Based Credit System in higher education. *International Journal of Engineering Research and Modern Education (IJERME)*, *1*(1), 278–284.

Chahal, D., & Manan, M. (2017). Choice-based credit system: A comprehensive reform. *Journal of Educational Studies*, *5*(2), 45–53.

Chaudhary, R. (2012). Choice-based credit system: boon or bane. *University News*, *50*(2), 6–10.

Gupta, S. (2023). Choice Based Credit System in India. *International Journal for Research and Analytical Review*, *10*(2), 262–268.

Gupta, S., & Singh, V. (2024). Examine the **NEP's initiatives** for improving the quality of education in India. *Navigating NEP 2020 Strategic Implementation and Future Challenges* (pp. 153–162). Luit and Pine. ISBN: 978-81-9740-99-8.

Gupta, S., & Singh, V. (2024). Trajectories of collective intelligence. *Collective Intelligence* (Vol. 1, pp. 97-107)**.** BlueRose Publication. ISBN: 978-93-6452-971-6.

Gupta, S., Desh Deepak, Rashmi Gore, Mishra, B. N., & Singh, V. (2024). Tracing challenges in the pathway of CBCS: A

status study. *Library Progress International*, *44*(3), 10300–10309.

Gupta, S., Sharma, M., & Shukla, P. (2025). From happiness curriculum to skill development: A critical evaluation of Delhi's NEEEV programme. International Journal for Multidisciplinary Research, 7(3), 1–12. http://dx.doi.org/10.36948/ijfmr.2025.v07i03.47674

Gupta, S., Shukla, P., Shukla, S., Deepak, D., Gore, R., & Singh, V. (2025). Environmental concerns in the present scenario and future works of education. *International Journal of Environmental Sciences*, *11*(7s), 697–709. https://theaspd.com/index.php/ijes/article/view/1274

Klein, J. T. (2017). *Interdisciplinarity: History, theory, and practice*. Wayne State University Press.

Kumar, A., & Gupta, S. (2021). Overcoming resource challenges in the implementation of the Choice Based Credit System in higher education. *Journal of Educational Infrastructure and Policy*, *17*(4), 75–90.

Kumar, R., & Sharma, P. (2018). The impact of CBCS on higher education in India: A multidimensional perspective. *Journal of Education Reform*, *34*(2), 120–135.

Kumar, S., & Singh, R. (2019). Bridging the gap: CBCS and its role in skill development and employability. *Journal of Higher Education Studies*, *15*(4), 32–45.

Kumar, S., & Srikant, S. (2016). Semester system and CBCS: A global perspective. *Journal of Educational Change*, *8*(1), 10–18.

Naidu, G., & Sreedevi, D. (2016). CBCS in higher education: Opportunities and challenges. *International Journal of Academic Research*, *3*(2), 55–62.

OECD. (2019). *Trends shaping education 2019*. Organisation for Economic Co-operation and Development. https://www.oecd.org/

Patel, N., & Singh, R. (2020). Keeping pace with advancements: The role of CBCS in preparing students for real-world applications. *Journal of Higher Education Research and Development*, *12*(4), 88–102.

Reddy, P. K. (2020). Impact of the Choice Based Credit System on higher education in India. *Journal of Indian Education*, *46*(3), 45–60.

Sanghi, S. (2010). CBCS: A fair system for quality enhancement. *Higher Education Review*, *2*(1), 15–20.

Shahid Mazid Bhat. (2017). Choice Based Credit System: An initiative for academic reform. *International Journal of Education and Allied Sciences*, *9*(2), 37–42.

Sharma, P., & Reddy, K. (2018). Implementation of the Choice Based Credit System in Indian higher education: Challenges and opportunities. *Journal of Educational Policy and Administration*, *12*(2), 85–102.

Sharma, R., & Verma, K. (2017). Curriculum flexibility in higher education: The role of core and optional subjects. *Indian Journal of Education Policy*, *22*(3), 45–60.

Singh, R., & Kaur, P. (2018). CBCS: An approach to bring reforms in higher education. *Journal of Academic Development*, *5*(1), 22–28.

Smith, J., & Taylor, R. (2020). Interdisciplinary education: Bridging gaps between subjects in higher education. *Journal of International Education and Research*, *15*(3), 120–135.

A Comparative Study of Attitude of Primary School Teachers Towards Inclusive Education

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Abstract

The present study is a comparative study of the attitude of primary school teachers towards inclusive education. The study consisted of 120 primary teachers drawn from 60 government primary schools and 60 private primary schools of the Bulandshahr district. Data was collected with the help of the Attitude Scale towards Inclusive Education developed by Dr. Vishal Sood and Dr. Arti Anand. The data obtained were analysed statistically, and the study revealed that (i) there is a significant difference in the Private primary teachers and the Government primary teachers towards inclusive education. (ii) There is no significant difference in Urban Primary Teachers and Rural Primary Teachers' attitudes towards inclusive education. (iii) There is no significant difference in Male Primary Teachers' and Female Primary Teachers' attitudes towards inclusive education.

Keywords: *Attitude, Inclusive Education, Urban, Rural, Primary Teachers.*

Introduction

Inclusive education represents a transformative approach to education that aims to accommodate the diverse learning needs of all students, regardless of their physical, intellectual, social, emotional, linguistic, or other conditions. Rooted in the principles of equity, human rights, and social justice, inclusive education seeks to create learning environments where every student feels valued, respected, and supported to reach their full potential.

The concept gained global prominence through international frameworks such as the Salamanca Statement (1994) and the United Nations Convention on the Rights of Persons with Disabilities (2006), both of which emphasize the right of all children to access quality education within mainstream settings. In the Indian context, policies such as the Rights of Persons with Disabilities Act (2016) and the National Education Policy (2020) have further reinforced the commitment to inclusive practices by promoting accessibility, flexible curricula, and teacher preparedness.

Inclusive education at the primary level is a foundational step toward building equitable and democratic societies. It ensures that all children—regardless of their abilities, backgrounds, or learning needs—are given equal opportunities to learn and grow together in mainstream

classrooms. Central to the success of inclusive education is the role of primary school teachers, who serve not only as educators but also as facilitators of diversity, empathy, and belonging within the classroom environment.

Primary teachers are often the first point of contact between formal education and young learners. Their understanding, attitudes, and preparedness significantly influence how inclusive education is implemented on the ground. However, despite policy frameworks such as the Right to Education Act (2009) and the National Education Policy (2020) in India—which emphasize inclusive and equitable quality education—many primary teachers face challenges in adapting curriculum, classroom management, and instructional strategies to accommodate learners with diverse needs.

This research paper examines the perceptions, competencies, and challenges faced by primary school teachers in implementing inclusive education. It explores the extent of their preparedness, the support systems available, and the professional development opportunities needed to empower them for inclusive practices. The study also highlights the importance of teacher attitudes, collaborative teaching models, and resource availability in fostering an inclusive classroom culture at the primary level.

Statement of the Problem

Inclusive education is a process of enabling all children to learn and share effectively within mainstream academic systems. It doesn't insulate children who have different capacities or requirements. The problem is stated as "A Comparative Study of Attitude of Primary School Teachers Towards Inclusive Education."

Attitude

An Attitude is generally defined as a tendency to reply appreciatively or negatively towards a certain object, be it a person, idea or situation. Attitudes are closely related to one's opinions and are based upon previous experiences. Attitudes often relate in some way to interaction with others and represent a vital link between social and cognitive psychology.

Objectives of the Study

1. To study the attitude of government primary teachers and private primary teachers towards inclusive education.

2. To study the difference between the attitude of government primary teachers and private primary teachers towards inclusive education.

3. To study the difference between the attitudes of urban and rural primary teachers towards inclusive education.

4. To study the difference between the attitudes of male and female primary teachers towards inclusive education.

Hypotheses of the Study

Ho1. There is no significant difference between the attitude of government primary teachers and private primary teachers towards inclusive education.

Ho2. There is no significant difference between the attitudes of urban and rural primary teachers towards inclusive education.

Ho3. There is no significant difference between the attitudes of male and female primary teachers towards inclusive education.

Methodology

A Survey Method was used for the Collection of Data.

Sample

The sample of the study was selected from schools of Buland Shahr, 120 teachers teaching in primary schools were selected.

Tools

Teacher attitude scale towards inclusive education by Dr. Vishal Sood and Dr. (Mrs.) Arti Anand was used for collecting the data.

The Attitude Scale consists of a set of 47 questions.

Analysis & Interpretation of the Data

Ho1. There is no significant difference between the attitude of government primary teachers and private primary teachers towards inclusive education.

In order to find out the difference between the scores of attitudes of government primary teachers and private primary teachers, mean, S.D. & t value were calculated.

Table 1. Significance of the Difference between the Attitude of Government Primary Teachers and Private Primary Teachers towards Inclusive Education

Gender	Number	Mean	S.D.	t-Ratio
Government Primary Teachers	60	115	8.15	5.17
Private Primary Teachers,	60	106	10.75	

The t-ratio calculated in Table 1 is found to be 5.17, and the needed values to be significant at .01 level is 2.62 and at .05 level 1.98. So, the calculated t-ratio value is greater than the table value at .01 level of significance. Therefore, it is significant at the .01level. Hence, Hypothesis no.1, i.e., there is no significant difference between the attitude of government primary teachers and private primary teachers towards inclusive education, is rejected. It means there is a significant difference in the Government primary teachers' and Private primary teachers' attitudes towards inclusive education.

Ho2. There is no significant difference between the attitudes of urban and rural primary teachers towards inclusive education.

In order to find out the difference between the scores of attitudes of government primary teachers and private primary teachers, mean, SD & t value were calculated.

Table 2. Significance of the Difference between the Attitude of Rural male and female Teachers towards Inclusive Education

Gender	Number	Mean	S.D.	T-Ratio
Urban Primary Teachers	60	110	9.57	0.53
Rural Primary Teachers	60	111	11.05	

Table 2 shows that the calculated value is 0.53, which is less than the table value .01 level is 2.62, and at the .05 level, 1.98. So, the calculated t-ratio value is less than the table value at the .01 level and the .05 level of significance. Hence, hypothesis No.2, i.e., there is no significant difference between the attitude of urban and rural primary teachers towards inclusive education, is accepted. It indicates that there is no significant difference in Urban Primary Teachers and Rural Primary Teachers' attitudes towards inclusive education.

Ho3. There is no significant difference between the attitudes of male and female primary teachers towards inclusive education.

In order to find out the difference between the scores of attitudes of government primary teachers and private primary teachers, mean, S.D. & t value were calculated.

Table 3. Significance of the Difference between the Attitude of Male Rural and Urban Elementary Teachers towards Inclusive Education

Gender	Number	Mean	S.D.	T-Ratio
Male Primary Teachers	60	109	10.13	0.56
Female Primary Teachers	60	108	9.45	

The t-ratio calculated in Table 3 was found to be 0.56, which is less than the table value .01 level is 2.62, and at .05 level, 1.98. So, the calculated t-ratio value is less than the table value at the .01

level and .05 level of significance. Hence, hypothesis No.2 i.e., there is no significant difference between the attitude of male and female primary teachers towards inclusive education, is accepted. It indicates that there is no significant difference between Male Primary Teachers' and Female Primary Teachers' attitudes towards inclusive education.

Main Findings

1. There is a significant difference in the Government primary teachers' and Private primary teachers' attitudes towards inclusive education. Government primary teachers means high showed a more positive attitude toward inclusive Education

2. There is no significant difference in Urban Primary Teachers and Rural Primary Teachers' attitudes towards inclusive education. That means Locality does not play any significant role in the attitude of Urban Primary Teachers and Rural Primary Teachers' attitude towards inclusive education.

3. There is no significant difference between Male Primary Teachers' attitudes towards inclusive education. That means Gender does not play any significant role.

Educational Implications

This review implies the need for the development of a positive attitude towards the successful implementation of inclusive education. Further, the review entails the need for the availability of training, an adapted curriculum, resources, and utmost responsibility of the teachers for the implementation of inclusive education. Another implication is for professionals, practitioners, and policymakers to design programs to intervene in negative attitudes and to control factors contributing to negative attitudes in implementing successful inclusion.

References

Avramidis, E., & Norwich, B. (2002). *Teachers' attitudes towards integration/inclusion: A review of the literature. European Journal of Special Needs Education, 17*(2), 129–147. https://doi.org/10.1080/08856250210129056

Baker, J. M., & Zigmond, N. (1995). The meaning of and practice of inclusion for students with learning disabilities. Journal ofSpecial Education, 29(2), 163-180.

Beattie, J. R, Anderson, R. J., & Antonak, R. F. (1997). Modifying the attitudes of prospective educators toward students with disabilities and their integration into the regular classrooms. The Journal of Psychology, 131(3), 245-260.

Carroll, A. (2003 Summer). Impact of teacher training in special education on the attitudes of Australia preservice general

educators towards people with disabilities. Teacher Education Quarterly, 14, 39-60.

Florian, L., & Black-Hawkins, K. (2011). *Exploring inclusive pedagogy*. *British Educational Research Journal, 37*(5), 813–828. https://doi.org/10.1080/01411926.2010.501096

Forlin, C., Sharma, U., & Loreman, T. (2007). *An international comparison of pre-service teacher attitudes towards inclusive education*. *Disability Studies Quarterly, 27*(4). https://doi.org/10.18061/dsq.v27i4.53

Hastings, R. P., & Oakford, S. (2003). Student teachers' attitudes towards the inclusion of children with special needs. Educational Psychology, 23, 234-250.

Malinen, O. P., Savolainen, H., & Xu, J. (2012). *Becoming an inclusive teacher: Comparing Chinese and Finnish pre-service teachers' attitudes towards inclusive education. Teaching and Teacher Education, 28*(4), 591–601. https://doi.org/10.1016/j.tate.2011.12.004

Sharma, U., Loreman, T., & Forlin, C. (2012). *Measuring teacher efficacy to implement inclusive practices. Journal of Research in Special Educational Needs, 12*(1), 12–21. https://doi.org/10.1111/j.1471-3802.2011.01200.x

Singal, N. (2008). *Inclusive education in India: International concept, national interpretation*. *International Journal of Disability, Development and Education, 55*(3), 293–308. https://doi.org/10.1080/10349120802268379

Subban, P., & Sharma, U. (2006). *Primary school teachers' perceptions of inclusive education in Victoria, Australia. International Journal of Special Education, 21*(1), 42–52.

Effects of Migration and HIV Status of Bridge Groups on their Families in India

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Abstract

Migration is a complex process which has a number of outcomes in terms of positive and negative. When it is carried with deadly or hazardous HIV, it impacts the physical, social, psychological and emotional state of the families. Numerous studies have been done on data has been analysed thematically and results were classified into four themes (i) family status (ii) social stigma: (iii) feeling of isolation and guilt; (iv) coping strategies. The paper recommends to prevent the spread of HIV through sex education, rigorous programs and distribution of condoms, mobile provisions for prevention of STIs with IEC activities in the Country HIV/AIDS and are centred on individuals, focusing on prevention strategies to cope with the disease. At the global level, sex workers of all genders continue to face disproportionately high risk of getting infected with HIV. There are multi-layered reasons for high-risk populations to get infected due to the behavioural and social environment experienced by the sex workers. On the other hand, truckers and migrating workers are highly vulnerable to HIV and are prone to sexually transmitted infections due to the nature of their work. Due to a lack of information on the bridge population's sexual behaviours, it limits the decision to initiate HIV prevention interventions. This paper intends to study the impact of migration and HIV status, especially on families of bridge groups called truckers and migrants. Secondary sources and existing literature have been used.

Keywords: *Migrant workers, HIV, Bridge group, Family & Actual Risk Group.*

Introduction

Migration is increasingly recognized as a multidimensional phenomenon that extends beyond the mere movement of people from one place to another. It encompasses a wide range of economic, social, political, cultural, and environmental factors that influence why and how individuals and communities migrate.

Migration studies have consistently been an interdisciplinary domain, integrating various theoretical frameworks and subfields (Brettell & Hollifield, 2014). Historically, the field primarily focused on the social practices shaped by migration and the political dynamics surrounding it (Zolberg, 2000; Guiraudon & Joppke, 2001). Over time, however, these dimensions have become increasingly interconnected, to the extent that some scholars now refer to this intersection as the *sociology of migration politics* (Sciortino, 2000). This evolution underscores the importance of promoting migration as an interdisciplinary area of study to grasp the complex realities of human mobility (Arango, 2004).

The article is an attempt to understand migration through this multifaceted lens, allowing research to move beyond simplistic push-pull models and address the deeper structural conditions shaping human mobility.

The Sociological Understanding of Migration

Classical theories of migration have faced several criticisms, which have contributed to the development of more nuanced contemporary sociological approaches. One key limitation of classical perspectives is their inability to account for the **transnational nature of migration**, as well as the variation in post-migration experiences across different societies. These theories also lack a **gender-sensitive framework**, leaving many questions about the intersection of gender dynamics and migration realities unanswered. Moreover, classical theories often overlook the experiences of **ethnic minorities**, particularly in relation to their processes of adjustment, assimilation, and conflict within host societies. Additionally, the **socio-psychological dimensions** of migration—especially concerning the migrant as "the stranger" and the emotional experiences of those left behind—receive minimal attention in these early frameworks.

In contrast, **contemporary sociological perspectives** view migration as a dynamic and socially embedded practice. This shift has allowed researchers to explore how specific migratory behaviours are shaped by historical context and how these practices evolve over time. Scholars have introduced classifications such as **short-term and long-term cross-border configurations** to distinguish between different patterns of transnational movement (Faist, 2000; Levitt & Glick Schiller, 2004).

A significant advancement in contemporary theory is the rise of **gender-sensitive migration studies** (Lutz, 2010). These approaches recognize gender as a socially constructed category that interacts with migration processes in complex ways. Among the frameworks within this field, the study of **transnational families** has become especially prominent. This concept reflects the transformation in family dynamics brought about by increased mobility, technological advancements, and more accessible communication. Unlike earlier periods where long separations were common, frequent travel has now become possible, although **economic constraints and job-related obligations** still limit the physical reunification of families in many cases.

In sum, contemporary sociological theories have broadened the analytical lens on migration. They extend beyond the classical view of migration as a routine economic process and instead frame it as a **transnational, gendered, and socially embedded phenomenon**. These

perspectives not only explore the motivations behind migration but also delve into the complex realities migrants face before, during, and after their movement, including assimilation and social transformation.

Objectives

This paper aims to:

1. **Examine migration as a sociological process**, exploring its underlying causes, patterns, and implications within a broader social context.

2. **Analyse the impact of migration** on both the migrant population and the communities they leave behind, focusing on social, emotional, and economic dimensions.

3. **Identify the factors contributing to risky behaviours among migrants**, with particular attention to the link between migration and the spread of HIV.

4. **Propose strategies for early detection of HIV/AIDS**, timely initiation of treatment, and reducing dropouts from healthcare services among migrant populations.

Methodology

This review article is based on **secondary sources**, with a focus on research exploring the relationship between HIV-positive individuals and their families. The time frame of 2000 to 2022 was selected to align with key developments in India's **National AIDS Control Programme (NACP)**, particularly **Phase III**, during which targeted interventions began to take shape.

While precise data on the HIV-positive migrating population in India remains limited, valuable conceptual insights and relevant keywords were obtained from the official websites of **UNAIDS** and **NACO**. Available numerical data were drawn primarily from published research, reputable news sources, and organizations such as the **Hindustan Latex Family Planning Promotion Trust (HLFPPT)** and **END**.
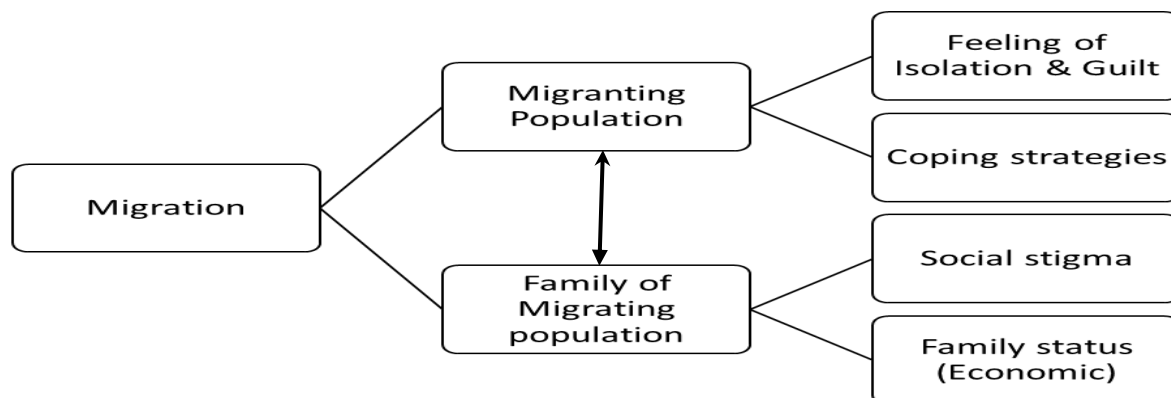
The research problem hence focuses on perspectives of: first, the experiences of HIV-positive individuals who migrate, and second, the situations of those left behind, often the families of

migrants. These themes revealed patterns related to the timing of migration (pre- or post-HIV diagnosis), reasons for mobility, the impact of diagnosis on family members, and their coping strategies.

Viewing HIV through a **social lens** reveals how the disease is exacerbated by **inequality, stigma, marginalization, and prejudice**—conditions that are often entrenched in the social fabric. Public health scholar **Jonathan Mann** strongly advocated for a **Human Rights Approach**, which emphasizes addressing these broader social conditions faced by people living with HIV. His work argued that combating the disease requires more than medical treatment; it necessitates social justice and protection of human dignity (Fee & Parry, 2008; Mann, 1998; Mann & Tarantola, 1998).

The social epidemiology and HIV

Social epidemiology examines how health and disease are influenced not only by biological or behavioural factors but also by broader social and environmental contexts. This perspective is especially critical in understanding conditions like **HIV/AIDS**, where transmission often involves deeply personal and interpersonal interactions. Since sexual behaviours are culturally constructed, each society defines what is considered acceptable or taboo based on its **socio-cultural, religious, and political frameworks** (Kippax, 2008).

It therefore becomes imperative to make a distinction between 'risk' and 'vulnerability'. Theoretically speaking, in the context of HIV, the risk is an epidemiological concept, as it is the possibility that one may acquire HIV infection; on the contrary, vulnerability is a social concept as it is influenced by social and environmental factors that control an individual's behaviour.
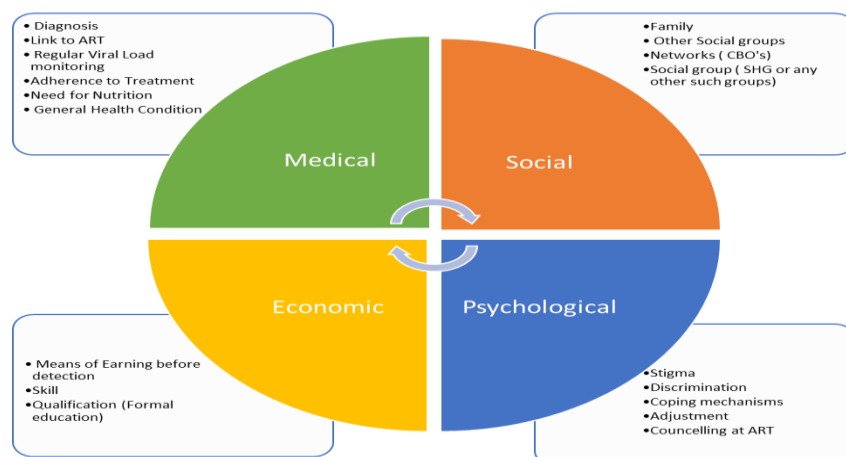
Social Epidemiology of PLHIV

The above diagram is an attempt to identify common factors that act as triggers in the case of the HIV-positive migrant population. It illustrates the multidimensional challenges faced by people living with HIV, highlighting four interconnected areas: medical, social, psychological, and economic. Medically, managing HIV involves timely diagnosis, access to antiretroviral therapy (ART), consistent viral load monitoring, and proper nutrition. Socially, the support from family, peers, and community-based groups (CBOs and SHGs) helps reduce stigma and encourages treatment adherence, strengthening the individual's resilience.

Economically, the impact of HIV can disrupt livelihoods, making skills development and educational qualifications crucial for sustainable income. Psychologically, PLHIV often experience stigma, discrimination, and emotional distress, which demand strong coping mechanisms and counselling support. The interdependence of these four dimensions underscores the need for a holistic and integrated approach to HIV care, addressing not only medical treatment but also the broader social, mental, and economic challenges to ensure better outcomes for individuals and communities.

In order to fully comprehend the situation, it is necessary to understand the situation from the micro level. Many elements act as push-pull factors contributing to different reasons for migration. Since the reason for migration is individualistic in nature, hence its impact on the individual and on the family also becomes personalized.

Migration and HIV: Indian scenario

Various epidemiological studies have indicated that migrant workers and truckers are the strongest influencers on the spread of HIV, which spreads across different geographical boundaries. Although this movement is greatly influenced in terms of frequency of travel, duration, familial conditions, and nature of employment, their role as a Bridge group cannot be undermined.

The research paper intends to study migration and its relation with HIV from a social epidemiological point of view, highlighting the migrant working population, including both truckers and migrant labourers in India, their role in acting as possible spreaders of disease like AIDS/ HIV, and highlighting the risk and vulnerability of their families.

i) Truckers

In the Indian context, the mobility of truck drivers has been increasingly recognized as a significant factor in the spread of HIV. According to the **Annual Report of the Ministry of Road Transport and Highways (2020–21)**, India possesses a vast road network of

approximately 6.2 million kilometres, including 136,440 km of national highways, 176,818 km of state highways, and over 5.9 million km of other roads.

Estimates by the **Asian Institute of Transport Development (AITD)** suggest that India is home to over 5 million truckers, based on the assumption of more than 2.5 million trucks operating with two drivers each. Reports from **Health Management Research** indicate a similar figure of 5 to 6 million truckers, with 40–50% engaged in long-distance transport. Among these, approximately 15–20% are identified as clients of female sex workers (FSWs), categorizing them as a high-risk "sub-segment" within the broader client population. Due to their continuous movement across regions, these truckers often act as **bridging populations**, transmitting HIV from high-prevalence areas to regions with lower prevalence rates.

With the expansion of transport infrastructure, the number of truck drivers is projected to grow significantly in the coming decade. Long-distance truckers and their helpers often remain on the road for extended periods—sometimes over a month—resulting in prolonged separation from their families. This lifestyle contributes to a higher incidence of **risky sexual behaviors** compared to short-distance drivers. These behaviors may include maintaining multiple sexual relationships, some of which involve fixed partners along the route, casual encounters at rest stops, or engagement with sex workers, thereby increasing their vulnerability to **sexually transmitted infections (STIs)**, including HIV.

Several socio-structural factors contribute to the risk-taking behaviour of truckers, which must be considered in understanding their overall vulnerability to HIV. Despite a relatively high level of awareness about HIV/AIDS, many drivers do not translate this knowledge into preventive practices. This disconnect is often attributed to harsh working conditions, including long hours, hazardous routes, risk of accidents, theft, and violence, which diminish concern for personal health and safety.

Key vulnerability factors among truckers include:

- Prolonged separation from spouses or regular partners
- Stress induced by poor road infrastructure, tight deadlines, and long working hours
- Use of alcohol to cope with isolation and fatigue
- Easy access to sex work networks at highway halts and transport hubs
- Ready cash availability, making truckers potential clients of the commercial sex industry
- Limited access to health services and condoms along highways
- Sexual exploitation or high-risk behaviour among helpers and assistants due to deprivation
- Low awareness and denial about male-to-male STI transmission

ii) Migrant Workers

Migrant labour is inherently a difficult concept to define; it can be understood from economic, legal, and social perspectives as well. According to Encyclopaedia Britannica, Migrant workers are those individuals who are usually unskilled and move from one state or country to another, offering their services, which might be on a temporary or seasonal basis. NACO, in order to deal with this potential high-risk group, has defined them as those men and women within the age group of 15- 49 years who travel at least once a year or more from source to destination. Those who return to their source location at regular intervals are called "circular migrants".

There are several factors that contribute to the high levels of vulnerability among migrant workers. The major factors can be identified as under:

1. Relative freedom in the new setting, as well as peer pressure to experiment with new norms.

2. Stressful migration driven by drought/disasters

3. Loneliness, drudgery, and long periods of separation from spouse/sexual partner

4. Having disposable income, clubbed with limited choices for affordable entertainment and recreation. This usually means drinking and, sometimes, drugs as well as sex with FSWs and other casual sex relationships.

Issues and challenges

According to the last HIV surveillance, which was conducted in 2017 by NACO, there were around 0.86% HIV positive truckers and 0.51%Migrant labourers out of the total HIV positive population in India (*SANKALAK: status of National AIDS response*, 2021). The above numbers are just an estimation; however, the actual number can be higher, as these numbers consist of only those who are registered at ART centres, and those who are unaware of their HIV status remain unchecked.

Studies have highlighted a lack of voluntary HIV testing, awareness about the disease and its mode of transmission, and ineffective counselling pertaining to the spread of disease and disease management contribute to the creation of misconceptions and myths related to HIV. Factors such as education, gender, self-perceived knowledge, socioeconomic status also help in the testing services, whereas the major factor that affects the most is the societal factors, which are associated with HIV, is the stigma and its consequences lessen the testing. These factors influence the health-seeking behaviour of the individual and PLHIV as well.

Specifically in the case of India, a consistent pattern whereby men seek testing as a response to the development of symptoms or reflecting on their past risky behaviour, whereas women test following the discovery of their husbands' HIV-positive status was witnessed. The unawareness and uncertainty about the HIV status of the migrating population also contributes to their vulnerability and also of their family. (Dandona et al. 2009; Joseph et al. 2010; S. Solomon et al. 2006; Vajpayee et al. 2009). Furthermore, married women are also largely unaware of their own risk, despite accumulated evidence that marriage is the biggest risk factor for monogamous married women in India. (Gangakhedkar et al. 1997; Mehta et al. 2006)

The non-uniform way in which the epidemic threatens different sub-populations, as with the distribution of power and autonomy between different genders and generations within Indian households (Bloom et al. 2001). The dominance of unsafe Sexual practices, lack of use of condoms and other preventive measures, adds fuel to the fire.

Policies related to HIV positive Migrant population

Recognizing the heightened vulnerability of truckers and migrant workers to HIV, the **National AIDS Control Programme Phase III (NACP-III)** designated these mobile populations as key target groups within its prevention framework. The primary objective was to curb HIV transmission among high-risk groups (HRGs) and prevent further spread to the general population. For truckers, the program was implemented at three strategic levels: (1) **National Networked Targeted Truckers Interventions**, (2) **Structural Interventions** at both national and state levels, and (3) **Localized Interventions** for high-risk truckers. These interventions were supported by clear guidelines covering program selection criteria, infrastructure development, supply chain logistics, human resource management, and financial oversight, aiming to address the unique risks faced by this group and ensure their integration into broader HIV prevention strategies.

In a similar vein, **NACO** designed a comprehensive intervention package for **high-risk migrant populations**. This included (1) **Outreach and Communication** efforts to engage migrants; (2) **Peer-led, NGO-supported behaviour change communication (BCC)** strategies, incorporating differentiated outreach based on risk typology, large-group activities (e.g., street theatre, games), and interpersonal communication; (3) **Essential health services**, such as condom promotion, referrals to STI clinics, and linkage to services like ICTC, ART, and substance use treatment; (4) **Enabling environments**, created through advocacy with stakeholders and connections to welfare programs; and (5) **Community mobilization**,

focusing on empowering migrant communities to take ownership of the intervention through capacity-building and local program centres.

Despite substantial efforts under NACP to raise awareness and deliver services to both high-risk and general populations, challenges remain. According to **SANKALAK (3rd Edition, 2021)**—the flagship empirical report of NACP assessing data from 2020—India had an estimated **23.19 lakh** (ranging between 18.33 lakh to 29.78 lakh) adults living with HIV (PLHIV), with an **adult prevalence rate of 0.22%**. Although this reflects a significant decline compared to earlier decades, several states continue to report rates above the national average. These include **Andhra Pradesh, Delhi, Goa, Karnataka, Maharashtra, Meghalaya, Punjab, Puducherry**, and **Tamil Nadu** (NACO, 2021).

Research Findings

HIV has a very prominent and lifelong effect on the lives of migrating populations. There are four predominant factors that have a direct impact on the lives of PLHIV and their families.
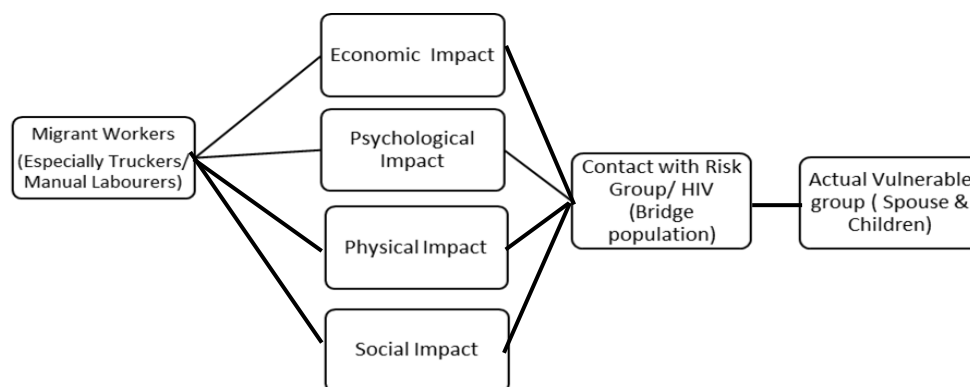
As stated above, there are several factors that might work simultaneously to identify the migrating population as the High-Risk Group. But in the case of those living with HIV, their family appear to be the actual vulnerable group. The impact of being diagnosed with HIV is not restricted to the individual alone; the family also faces the consequences of the isolation and stigmatisation that come as baggage in the case of HIV. Here again, a clear distinction in case of gender difference and acceptance is visible where the males are spared from direct interrogation pertaining to cause of disease whereas females especially in cases where the wife is positive and the husband is not HIV positive, may face severe stigmatisation, discrimination, violence and abandonment (Desai 2005; Saggurti and Malviya 2009).

The process of coping and adjusting to the disease, which is chronic and later terminal, is not easy. It is very difficult to say how an individual copes and adjusts to the sudden shock of being detected with HIV. The stigma attached to being HIV positive sometimes leads to a situation

where the patient socially associates himself with other HIV related diseases like cancer and tuberculosis (Chandra et al. 2003). The impact of being detected with HIV is visible at the level of both the individual and their family:

i) Detection of HIV- (family status and HIV)- As already stated, it is very rare in India that an individual gets himself tested voluntarily for HIV; in other than such cases, an individual is suffering from some kind of medical condition or is pregnant in the case of females. The decline in health, shock, anxiety, and denial all these factors work simultaneously, making it difficult to cope. Apart from this, loss of work/job due to ill health, meeting family or social responsibilities, and the hunt for alternative sources for earning, add to the already deteriorated situation.

(ii) Social stigma- The social stigmatisation of HIV due to its association with sexually deviant and socially disapproved behaviour and on the other hand, the pathological nature of HIV being chronic, incurable and after a given point of time terminal and the individual's experience of this transition is what distinguishes it from other diseases. (Pisani 2008). The family also bears the brunt of stigmatisation, family isolation from community, out casting, abandonment by family (siblings, spouses, parents, etc), change in family dynamics, and the blame (in case of females is quite common.

(iii) Feeling of isolation and guilt- as stated above, the impact of stigma associated with HIV is clearly visible at two levels: self-stigma and stigma by others towards the HIV positive individual. Self- stigmatization is a difficult aspect of an individual's acceptance of their status, and the guilt of involving the family along makes the process even more complicated. The lack of counselling at ART centres and also the self-perceived notions about the disease and half-cooked knowledge about how to live with the disease also isolate the individual from family, friends, and any other social support system.

(iv) Coping strategies- it is very difficult to pinpoint how and what takes an individual to cope and adjust and help them to move on forward in their lives. Similarly, it is very difficult to say how much time one needs to cope; this completely depends upon the individual and the situation they are in. With help from their family, financial and food security, support from the community, counselling, knowledge about their rights, and linkage to the service providers, all can contribute to their sustainable future.

Suggestions

The early detection and treatment of HIV is essential to reduce its rate of prognosis and lead a healthy and long life. However, due to lack of clarity about the HIV status and thereafter lack

of enrolment in ART, and subsequently a large number of dropouts in treatment have resulted in the spread of the epidemic. Despite targeted programs and initiatives by NACO, any member of the general population does not have access to free HIV testing until they become ill or face some other medical complication. The difference in health-seeking behaviour based on class, gender, and education further contributes to the gap in detection and treatment.

The predominance of private health setups over government in matters of male sexual health, especially traditional methods of treatment, access to HIV testing by spouses of migrant workers, particularly women, and, in some cases, misdiagnosis, also adds to the growing number of people living with HIV.

The institutionalised government setups need to make additional efforts in order to connect more and more members of the high-risk groups to take up testing and treatment to reduce not only the rate of incidence but also provide longevity of life to those who are living with it. The following suggestions can be provided on the basis of the paper:

- Need for gap assessment in government policy and implementation.
- Promotion of volunteer testing and promotion of preventive measures.
- Sex education and awareness about modes of HIV transmission and the risk involved in unsafe sexual practices.
- Reducing stigmatization and involving the community to bring their PLHIV back into the mainstream.
- Reducing the doctor-patient ratio, providing specialised training to health practitioners to cater to the needs of specifically HIV patients.

Acknowledgement

References

Alba, R., & Nee, V. (2003). *Remaking the American mainstream: Assimilation and contemporary immigration*. Harvard University Press.

Amelina, A., & Horvath, K. (2017). In

K. O. Korgen (Ed.), *The Cambridge handbook of sociology: Core areas in sociology and the development of the discipline* (Vol. 1, pp. 455–464). Cambridge University Press.

Ministry of Road Transport and Highways, Government of India. (2021). *Annual report 2020–21: Bharatmala—Road to prosperity*. Government of India.

Arango, J. (2004). Theories of international migration. In D. Joly (Ed.), *International migration and the new millennium: Global movement and settlement*. Ashgate.

Baldassar, L., & Merla, L. (Eds.). (2013). *Transnational families, migration and the circulation of care: Understanding mobility and absence in family life*. Routledge.

Benhabib, S. (2002). *The claims of culture: Equality and diversity in the global era*. Princeton University Press.

Bloom, S. S., Wypij, D., & Gupta, M. D. (2001). Dimensions of women's autonomy and the influence on maternal health care utilisation. *Demography, 38*(1), 67–78.

Brettell, C. B., & Hollifield, J. F. (Eds.). (2014). *Migration theory: Talking across disciplines* (3rd ed.). Routledge.

Brockerhoff, M., & Biddlecom, A. E. (1999). Migration, sexual behavior and the risk of HIV in Kenya. *International Migration Review, 33*(4), 833–856. https://doi.org/10.1177/01979 1839903300401

Chandra, P. S., Deepthivarma, S., & Manjula, V. (2003). Disclosure of HIV infection in South India: Patterns, reasons and reactions. *AIDS Care, 15*(2), 207–215.

Dandona, R., Kumar, S. G., Kumar, G. A., Lakshmi, V., & Dandona, L. (2009). HIV testing among adults in a high prevalence district in India. *National Medical Journal of India, 22*(6), 289–293.

Desai, S. (2005). HIV and domestic violence: Intersections in the lives of married women in India. *Health and Human Rights, 8*(2), 140–168.

Faist, T. (2000). *The volume and dynamics of international migration and transnational social spaces*. Oxford University Press.

Farmer, P. (1999). *Infections and inequalities: The modern plagues*. University of California Press.

Fee, E., & Parry, M. (2008). Jonathan Mann, HIV/AIDS, and human rights. *Journal of Public Health Policy, 29*(1), 54–71.

Gangakhedkar, R. R., Bentley, M. E., Divekar, A. D., et al. (1997). Spread of HIV infection in married monogamous women in India. *JAMA, 278*(23), 2090–2092.

Gamlen, A. (2012). Mixing methods in research on diaspora policies. In C. Vargas-Silva (Ed.), *Handbook of research methods in migration* (pp. xx–xx). Edward Elgar.

Geiger, M., & Pécoud, A. (2014). International organisations and

the politics of migration. *Journal of Ethnic and Migration Studies, 40*, 865–887.

Gordon, M. M. (1964). *Assimilation in American life: The role of race, religion and national origins*. Oxford University Press.

Kippax, S. (2008). Understanding and integrating the structural and biomedical determinants of HIV infection: A way forward for prevention. *Current Opinion in HIV and AIDS, 3*(4), 489–494.

Lee, E. S. (1966). A theory of migration. *Demography, 3*, 47–57.

Levitt, P., & Glick Schiller, N. (2004). Conceptualizing simultaneity: A transnational social field perspective on society. *International Migration Review, 38*, 1002–1039.

Link, B. G., & Phelan, J. (1995). Social conditions as fundamental causes of disease. *Journal of Health and Social Behavior, Special Issue*, 80–94.

Lutz, H. (2010). Gender in the migratory process. *Journal of Ethnic and Migration Studies, 36*(10), 1647–1663.

Mann, J. M. (1998). AIDS and human rights: Where do we go from here? *Health and Human Rights, 3*(1), 143–149.

Mann, J., & Tarantola, D. (1998). Responding to HIV/AIDS: A historical perspective. *Health and Human Rights, 2*(4), 5–8.

National AIDS Control Organization (NACO). (2021). *Sankalak: Status of National AIDS Response* (3rd ed.). Ministry of Health and Family Welfare,

Government of India.

Nepal, B. (2007). Population mobility and spread of HIV across the Indo-Nepal border. *Journal of Health, Population and Nutrition, 25*(3), 267–277.

Parker, R. G., Easton, D., & Klein, C. H. (2000). Structural barriers and facilitators in HIV prevention: A review of international research. *AIDS, 14*(Suppl 1), S22–S32.

Pisani, E. (2008). *The wisdom of whores: Bureaucrats, brothels and the business of AIDS*. Granta Publications.

Ravenstein, E. G. (1885). The laws of migration. *Journal of the Statistical Society of London, 48*, 167–235.

Saggurti, N., & Malviya, A. (2009). HIV transmission in intimate partner relations in India. *UNAIDS*.

Saggurti, N., Verma, R. K., Jain, A., et al. (2008). HIV risk behaviours among contracted and non-contracted male migrant workers in India. *AIDS, 22*(Suppl 5), S127–S136. https://doi.org/10.1097/01.aids.0000343771.75023.cc

Sciortino, G. (2000). Toward a political sociology of entry policies: Conceptual problems and theoretical proposals. *Journal of Ethnic and Migration Studies, 26*, 213–228.

Solomon, S., Kouyoumdjian, F. G., Cecelia, A. J., et al. (2006). Why are people getting tested? Self-reported reasons for seeking voluntary counseling and testing at a clinic in Chennai, India. *AIDS*

Behavior, 10(4), 415–420.

Tarantola, D. (1995). Risk and vulnerability reduction in the HIV/AIDS pandemic. *Current Issues in Public Health, 1*(4), 176–179.

Vargas-Silva, C. (Ed.). (2012). *Handbook of research methods in migration*. Edward Elgar.

Wallerstein, I. (1974). *The modern world system I: Capitalist agriculture and the origins of the European world-economy in the sixteenth century.* Academic Press.

Zolberg, A. (2000). Matters of state: Theorizing immigration policy. In C. Hirschman, P. Kasinitz, & J. DeWind (Eds.), *The handbook of international migration.* Russell Sage Foundation

Diversity Climate and Employee Engagement: Unveiling the Mediating Role of Employee Resilience in the IT Sector

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Abstract

As the IT sector grows rapidly, it's important for companies to welcome diversity and keep their employees engaged to enjoy business success. Overcoming obstacles and being adaptable has turned out to play a major role in these changes.

Design: The study explored how employee resilience acts as a bridge between employee engagement and diversity climate for people working in the IT sector. We used a quantitative, cross-sectional survey to gather data from 326 people working in the sector.

Methodology: The data were obtained through the use of standard instruments: the Connor-Davidson Resilience Scale (CD-RISC) for overall resilience, the Utrecht Work Engagement Scale for employee engagement levels, and a tool by McKay et al. for measuring how employees see the diversity climate. The researchers looked at whether employee resilience lies between employee engagement (E.E.) and diversity climate (D.CL).

Findings: The study proved that employee resilience enables companies to respond to new changes, recover after problems, and address difficulties ahead of time. The research implies that IT companies need to focus on both diversity and resilience, as the link between staff engagement and diversity isn't strong without it.

Implications: The research recommends that IT businesses support diversity and inclusion and additionally help workers become more durable. Improving resilience helps people engage more, promotes a healthy environment for diversity, and benefits the organisation as a whole.

***Keywords:** Employee Resilience, Diversity Climate, Employee Engagement, IT Sector, Mediation Model.*

Introduction

As diversity, equality, and inclusion are now highly valued by the global workforce, there is much interest in investigating how the fair treatment and inclusion of different groups impact a company's results. Building an inclusive work environment helps the IT sector stay ahead in its fast-moving world of constant competition. In addition to helping us hire a wider range of applicants, it also supports full engagement from employees, which increases productivity and supports growth for the business. Making employees feel welcomed and respected by the organisation usually helps them become more dedicated to their job.

In addition to diversity climate, how resilient an organisation helps regulate the link between diverse climate and employee engagement. Organisations that support adaptability and team efforts are more able to set up communities that can boost workers' motivation at work.

This point is very important in the IT field, since being strong enables a business to address disruptive technologies, new demands from the market, and a growing variety of workforce

members. By studying how resilient employees impact the IT sector, this study looks at the link between employee engagement and climate diversity. By exploring this relationship, the study wants to understand how resilience and diversity can boost employee involvement in IT companies, which over time will support their innovation and position them ahead of their rivals

Literature Review

Employee engagement

Kahn (1990) was the first to present the concept of employee engagement, and Maslach et al. (2001) examined it from a somewhat different but similar angle. Schaufeli, Salanova, González-Romá, and Bakker (2002) further developed the notion of work engagement, defining it as "a positive, fulfilling, work-related state of mind." The understanding of work engagement is based on this description. Even while there is research on the connection between psychological characteristics and work engagement, it is still insufficient to conclusively show that employee resilience is a crucial component that drives work engagement.

Scholars and practitioners have given employee engagement a lot of attention lately (Bakker et al., 2014), with a growing emphasis on group dynamics and macro-level elements to improve workgroup performance. Work engagement, according to Schaufeli and Bakker (2003), is a positive state that represents an employee's thinking and is defined by three essential components: vigour, dedication, and absorption. Vigour is the capacity for mental adaptability and the resolve to work hard, especially under trying circumstances. Dedication motivates people to approach activities with pride and passion by igniting their enthusiasm and feeling of purpose. On the other hand, absorption is the intense focus on one's work to the point where time seems to pass quickly, and workers are motivated to continue working.

Schaufeli and Bakker's work challenged the traditional burnout-engagement perspective by presenting engagement as a positive, enduring state of mind marked by fulfilment rather than solely the opposite of burnout. Engagement is also conceptualised as a more stable, affective-cognitive state, not tied to specific tasks, individuals, or moments (Schaufeli & Bakker, 2003). Vigour, for example, reflects an individual's resilience and high levels of energy devoted to work, even under difficult conditions. Absorption represents the intense concentration on tasks that allows time to pass quickly, while dedication signifies an active, enthusiastic involvement in work responsibilities, bringing feelings of pride and motivation to employees.

Employee resilience

To properly adapt and react to changes in the environment, employees' resilience needs to be increased (J. Wang et al., 2014). Work results are improved when employees' resilience is increased (Cooke et al., 2019). When firms give their employees the resources they need, they can adapt and use them, according to the idea of employee resilience (Rossi et al., 2013).

Another meaning of resilience is the ability to recover from traumatic or stressful situations and continue in a positive manner. (Tugade & Fredrickson, 2004). Employees may come up with new, unconventional ideas that are more satisfying to them personally as a result of the resilience developed from overcoming difficult circumstances (Meneghel et al.,) According to Windle (2011), resilience is the capacity to adjust to challenging circumstances and the process of adjusting to traumatic and stressful events. Employee resilience is crucial for adjusting to shifting conditions and surroundings that are unstable (J. Wang et al., 2014). Finding innovative answers to unforeseen changes and supporting staff in this way fosters employee resilience. (Sundblad et al., 2013) guidance. Through their past experiences, employees' resilience enables them to develop new concepts and innovations and focus on their future growth (Panpakdee & Limnirankul, 2018).

Employee resilience was created to change the focus of resilience research from internal evaluations of stress management skills to the context of how effectively people exhibit resilience in their day-to-day work life (Kuntz et al.). According to Kuntz et al. (2017), employee resilience is a dispositional feature that controls the psychological processes that allow employees to recover from challenging situations, traumatic events, and adversity. (Shin and others, 2012) To put it another way, it shows how well workers respond to pressure at work and suffer fewer negative effects. One protective aspect of employees' reactions to change is their resilience. Change in the workplace, which helps people deal with and recover from hardships or defeats that are frequently dispositional approaches to employee resilience has been replaced by the scholar's ability approach in recent studies. For instance, Lengnick-Hall et al. (2010) suggested that when seen as a personal skill that can be developed, employee resilience is a useful term in organisational studies. Through relationships between people and their workplace, employees may be inspired to overcome the challenges they encounter. The importance of taking employee resilience into account in a This phrase highlights the desire to survive in an uncertain workplace by focusing on the work-related environment and viewing it as a talent that can be acquired over time.

Employee resilience is important for efficient operation in a "turbulent world." It is now crucial for organisations to support particular strategies for boosting employee engagement and

resilience. Resilient workers are better able to bounce back from setbacks at work and are more open to basic organisational adjustments than non-resilient workers, claims.

The importance of resilience has been emphasised in several case studies, theoretical reviews, and practical publications throughout the years (Langvardt, 2007; Maddi & Khoshaba, 2005; Payne, 2009). Nevertheless, the great majority of resilience research is unexplained and offers few details regarding its origins and real-world workplace applications. The research that has been written about resilience up to this point views it as a quality or asset rather than as a condition and a skill that can be developed in the workplace. Workplace resilience interventions are still in their infancy, and there is not enough data to evaluate their usefulness. Employees, especially those in IT businesses, may therefore benefit from acknowledging policies that promote employee resilience. Research indicates that resilient individuals not only manage difficulties but also have extra abilities to deal with setbacks at work. For instance, resilient individuals exhibit many positive attributes, including curiosity and openness to new experiences (Waugh, Fredrickson, & Taylor, 2008), as well as vitality and optimism (Block & Kremen, 1996). Employees who are confident and full of energy are therefore more equipped to handle obstacles at work, which eventually strengthens engagement at work. Studies conclude that resilient workers are better able to create supportive networks and high-quality interactions at work (Fredrickson et al., 2003).

Diversity climate

The concept of diversity climate reflects how actively a firm promotes equitable human resource policies and fosters social inclusion for employees from underrepresented groups. Cox (1994) expanded on the idea of a diverse climate by identifying it as a combination of factors at different levels: (a) individual-level factors, which include prejudice and stereotyping within the organisation; (b) group and intergroup dynamics, which pertain to the degree of conflict between different groups within the organization; and (c) organisational-level factors, which include things like organisational culture, the inclusion of underrepresented employees in social networks and senior roles, and the likelihood of institutional biases in HR systems. All things considered, the diversity atmosphere reflects how workers collectively perceive how demographic differences, such as colour, gender, age, and other group memberships, affect organisational procedures and interpersonal relationships.

As businesses increasingly look to create settings that recognise and encourage multiple identities, the idea of diversity climate has drawn a lot of interest in organisational studies. Generally speaking, diversity atmosphere refers to how employees collectively perceive the equity, inclusivity, and integration efforts within an organisation, specifically as they pertain

to underrepresented or marginalised groups (Gelfand, Nishii, Raver, & Schneider, 2007). An inclusive diversity climate is often associated with equitable human resource practices and social structures that provide genuine integration for employees across different demographic categories. As per McKay, Avery, Tonidandel, Morris, Hernandez, and Hebl (2007), these include race, gender, age, and ethnicity.

Research indicates that a positive diversity climate can have substantial benefits for organisations. For instance, organisations that promote a strong diversity climate are often seen as more attractive by job seekers and tend to have lower turnover rates, as employees feel more valued and engaged (Avery, McKay, Wilson, & Tonidandel, 2007). Furthermore, a supportive diversity climate correlates with enhanced team performance, as diverse perspectives and experiences aid in better decision-making and more creative problem-solving (Ely & Thomas, 2001). On the contrary, a poor diversity climate, marked by exclusion or bias, may hinder employee satisfaction and negatively affect organisational performance (Roberson, 2006). To establish a robust diversity climate, organisations must implement equitable policies, foster an inclusive culture, and ensure that diversity initiatives are deeply integrated into HR practices, including recruitment, career development, and leadership opportunities (Shore, Randel, Chung, Dean, Ehrhart, & Singh, 2011). Additionally, by fostering an inclusive environment and resolving any prejudices that may exist in organisational procedures and systems, leaders can significantly contribute to the development of a diverse workplace (Nishii & Mayer, 2009).

Mediating effect of employee resilience

According to the literature, resilient individuals are more equipped to deal with unforeseen changes and adjust to demanding jobs, tasks, and circumstances (Shin, Taylor, & Seo, 2012). Employees with resilience are better able to withstand stress and adjust to dynamic, demanding work settings (Rutter,2006). Resilience, according to Luthans, Vogelgesang, and Lester (2006), is the capacity of an individual to "bounce back" from hardship and develop and become stronger as a result of this adaptation building resilience is a contextual, interactive process employee resilience, is a component of personal resources, has a favourable impact on work engagement which is supported by the conservation of resources hypothesis. Numerous studies have shown that employees get engaged when they are given organisational resources like as autonomy, flexibility in their work schedules, feedback on their progress, support from leaders, and an environment of loyalty and trust. Employee resilience will assist employees in dealing with change and adversity and lessen the negative effects of workplace expectations. It has been discovered that employees who are provided continual opportunities to progress their careers show higher levels of job engagement. Additionally, it was suggested

by Luthans et al. (2006) that workplace resilience enables employees to see challenges and failures as opportunities for improvement, education, and progress. Workers will consequently hone their inventiveness and flexibility to accomplish significant corporate objectives, which in turn forecasts employee engagement.

As a result, they exhibit a high level of preparedness to handle challenging circumstances at work, which eventually promotes work engagement. Furthermore, resilient people have several positive traits, including being vivacious enthusiastic curious and open to new experiences These traits have a high propensity to build meaningful relationships at work which in turn encourages effective employee engagement, Employee outcomes, employee resilience, and sustainable HRM practices: Moving toward shared values said that by empowering workers to handle expectations at work, employee resilience may keep people from disengaging. Employee engagement at work is thus predicted by their increased creativity and adaptability in achieving meaningful and organizational goals. Employee resilience demonstrates that a resilient person can handle difficult situations and has extra ability to go beyond obstacles at work. As a result, they exhibit a high level of preparedness to handle challenging circumstances at work, which eventually promotes work engagement. Furthermore, resilient people have several positive traits, including being vivacious and enthusiastic, curious and open to new experiences, active, and self-assured. These traits have a high propensity to build meaningful relationships at work, which in turn encourages effective employee engagement (Lu et. al,2023).

Research Objectives

1. To explore the relationship between diversity climate and employee engagement

2. To study the mediating impact of employee resilience on employee engagement and diversity climate

Hypotheses

(1) Diversity Climate has a direct positive effect on Employee Engagement.

(2) Employee Resilience mediates the relationship between Diversity Climate (D.CL) and Employee Engagement.

Research Methodology

This research employed a quantitative, cross-sectional survey design to investigate the relationship between Diversity Climate, Engagement, and Resilience. The study gathered data from a varied employee pool using validated tools: the Connor-Davidson Resilience Scale (CD-RISC) assessed general resilience, the Utrecht Work Engagement Scale (UWES) measured engagement through vigour, dedication, and absorption, and a scale by McKay et al.

evaluated perceptions of diversity climate. To analyse the data and determine if diversity climate influences engagement through employee resilience as a mediating factor, the researchers utilised Hayes' Process Model 4 in SPSS. The study adhered to ethical standards, including obtaining informed consent from participants and ensuring data confidentiality.

Data Analysis and Interpretation

Respondent Profile Overview

An online survey employing a 5-point Likert scale was administered to 326 participants, recruited through snowball and convenience sampling. The instrument assessed perceptions of employee resilience, diversity climate, and engagement.

Table 1: Summary of Respondents' Profile

Category	Subcategory	Percent	Category	Subcategory	Percent
Gender	Male	62.0%	Years of Experience	> 1 year	22.4%
	Female	37.0%		1–3 years	19.6%
Working Style	Onsite	62.0%		4–6 years	20.9%
	Work from Home	10.0%		7–10 years	19.9%
Age Group	Under 25	28.0%		11 and above	17.2
	25–34	28.4%	Working Location	Delhi	41.4%
	35–45	19.6%		Bengaluru	39.0%
	45–55	22.1%		Mumbai	18.1%
	55 and above	2.0%		Others	1.5%

The study participants exhibited a wide range of demographic and professional characteristics. The gender breakdown showed 449 males, 280 females, and 10 individuals identifying as other. Age-wise, 28% were under 25, 28.4% fell between 25 and 34, 19.6% were in the 45-54 range, and 22.1% were between 45 and 54 years old, with only 2% being 55 or older. Work experience was categorised as follows: 22.4% had less than a year, 19.6% had 1-3 years, 20.9% had 4-6 years, 19.9% had 7-10 years, and 17.2% had 11 or more years. Geographically, 41.4% of participants worked in Delhi, 39% in Bengaluru, 18.1% in Mumbai, and 1.5% in other states. Regarding work arrangements, 62% operated remotely, 10% worked from home online, and 28% had a hybrid remote setup.

Descriptive Statistics

The table displays dependability metrics and descriptive statistics for the three main study variables—diversity climate, employee engagement, and employee resilience. The mean, standard deviation (S.D.), Cronbach's alpha, and the number of items used to measure each variable are presented.

Table 2: Means and Reliability Statistics

Variable	No. of items	Mean	SD	Cronbach's Alpha
Employee Engagement	9	23.46	3.574	.805
Employee Resilience	6	21.67	2.96	.741
Diversity Climate	5	40.71	4.37	.818

Nine questions were used to assess employee engagement, and the results showed strong reliability with a mean of 23.46, standard deviation of 3.574, and alpha of .805,5, respectively. Six items were used to measure employee resilience; the average score was 21.67, the standard deviation was 2.96, and the alpha coefficient was 0.741, all of which are regarded as reliable. Five items were used to measure Diversity Climate; the mean score was 40.71, with a standard deviation of 4.37.

Its internal consistency was high, as evidenced by a Cronbach's alpha of .818. These findings demonstrate that the scales employed in this study provided adequate reliability for measuring the research variables. All Cronbach alpha coefficients surpass the .70 threshold, which is the accepted level for internal consistency among items within each scale. The reported means and standard deviations offer insights into the central tendencies of respondents' perceptions regarding engagement, resilience, and diversity climate within their organisations.

Statistical Model of the Study

This research employs a mediation model as its statistical framework, investigating whether Employee Resilience (E.RE) serves as a moderator in the connection between Employee Engagement (E.E.) and Diversity Climate (D.CL). This method is widely used in psychological and organizational behavior research to investigate the possible impact of an intervening variable on the relationship between independent and dependent variables.
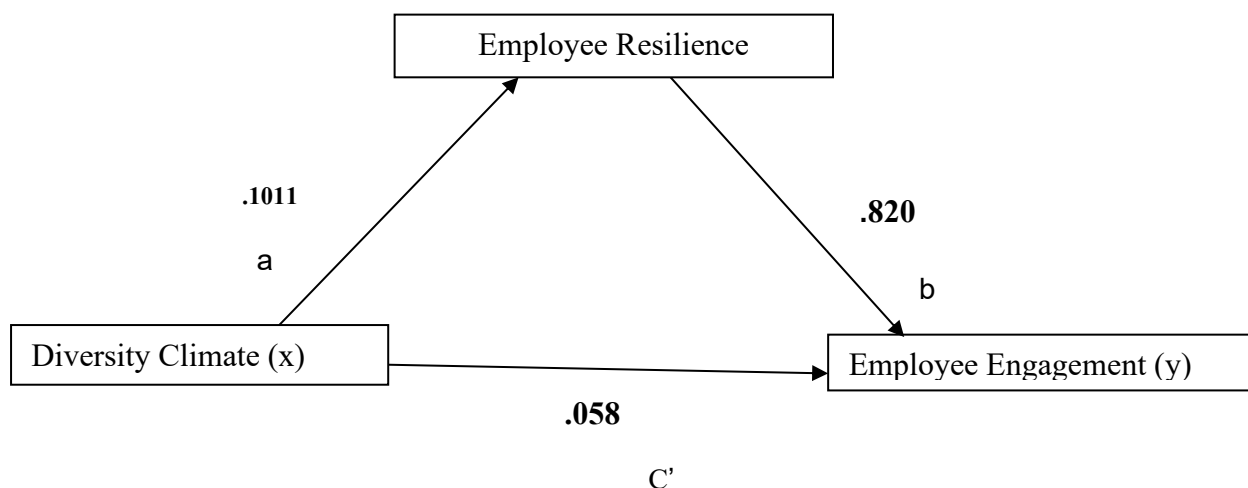
Where,

Diversity climate (D.CL) = IV

Employee Resilience (E.RE) =Mediator

Employee Engagement (E.E) =D.V

Pathway Analysis and Interpretation of Effects

• Direct effect (c'): This shows how the diversity climate affects employee engagement without reference to employee resilience.

Through employee resilience, the indirect effect (a×b) illustrates how the diversity climate affects employee engagement. It suggests mediation if this pathway is significant.
• Total effect (c): This shows how the diversity climate affects employee engagement overall by combining the direct and indirect effects.

Hypothesis 1: Diversity Climate (D.CL) has a direct positive effect on Employee Engagement (E.E).

Interpretation: This hypothesis tests the direct relationship between D.CL and E.E, examining if a supportive diversity climate is associated with higher levels of employee engagement. Given the direct effect coefficient (0.0585, $p < 0.001$), this hypothesis would be supported.

Hypothesis 2: Employee Resilience (E.RE) mediates the relationship between Diversity Climate (D.CL) and Employee Engagement (E.E).

Interpretation: This hypothesis tests if E.RE acts as a mediator in the D.CL → E.E relationship, suggesting that a positive diversity climate enhances employee resilience, which in turn increases employee engagement. Given the significant indirect effect (0.0829, with a 95% confidence interval of [0.0509, 0.1188] and $p < 0.001$), this hypothesis would also be supported.

Table 3: Summary of mediation analysis

Relationship	Total Effect	Direct Effect	Indirect Effect	Confidence Interval	P-Value	t	Conclusion
				Lower Upper Bound Bound	0.00	4.76	
Diversity climate-> Employee Resilience -> employee engagement	0.1414	0.0585	0.0829	0.0509 0.1188			Partial Mediation

The study looked at how employee engagement and diverse climate are mediated by employee resilience. With an estimate of 0.0829 (t = 4.76, p = 0.000), the results showed an indirect effect of diversity climate, indicating that employee resilience modifies the link between these variables. This suggests that despite the diversity atmosphere has a direct impact on employee engagement, it also has an indirect effect of fostering more employee resilience, which raises

engagement levels. Even after adding the mediator, the study discovered that diversity climate was still a significant direct predictor of involvement, confirming the partial mediation hypothesis (b = 0.0585, p = 0.000).

Researchers used a bootstrapping technique with 5,000 resamples to estimate the intervention factor to evaluate the indirect effect. With a bootstrapped SE of 0.0174, the diverse climate's mediated moderating effect on engagement through resilience was 0.0829. The absence of zero made the 95% bootstrap confidence interval for the indirect effect go from 0.0509 to 0.1188, confirming significance. Overall, these findings suggest that a supportive diversity environment encourages greater investment in the organisation, both by boosting resilience and directly through greater interaction.

Conclusion

In all, the study proves that a positive, diverse work environment greatly helps boost employee engagement, especially in IT fields where creative and flexible work is very important. A positive diversity climate supports employee commitment to what they do at work and encourages them to feel included. Since they feel more appreciated, employees perform better and are more involved when they feel their workplace values diversity and equity.

Also, studying employee resilience's role as a mediator helps identify how organisations can improve their gains from a strong, diverse climate. With things moving rapidly in the IT world, employees' ability to handle challenges allows companies to respond to changes, bounce back and face obstacles in advance. The reason workers want to contribute fully in such companies is that they trust the company can handle any surprise difficulties. Because of this trait, employees from all types of backgrounds in a diverse organisation feel safe and certain that what they contribute is valued.

According to the research, IT companies ought to prioritise diversity and inclusion and also prepare employees to cope with challenges. This two-pronged plan could create a team that works harder, comes up with new ideas, and boosts company growth and ability to compete. Leaders and managers should do their best to support a work environment that embraces diversity, boosts resilience, and motivates adaptation. Having this kind of environment can motivate employees to face difficulties and successfully help the organisation reach its objectives. Ultimately, encouraging diversity and strength in the organisation is just as useful as it is important. It supports IT firms in making the most of their diversity, resulting in more involvement, better ideas and sustainable success.

References

Avery, D. R., McKay, P. F., Wilson, D. C., & Tonidandel, S. (2007). Unequal attendance: The relationships between race, organizational diversity cues, and absenteeism. *Personnel Psychology, 60(4)*, 875-902.

Bakker, A. B., Demerouti, E., & Sanz-Vergel, A. I. (2014). Burnout and work engagement: the JD–R approach. *Annual Review of Organizational Psychology and Organizational Behavior*, *1*(1), 389–411. https://doi.org/10.1146/annurev-orgpsych-031413-091235

Block, J., & Kremen, A. M. (1996). IQ and ego-resiliency: conceptual and empirical connections and separateness. *Journal of personality and social psychology*, *70*(2), 349.

Breevaart, K., & Van Woerkom, M. (2024). Building employee engagement and resilience through strengths-based leadership. *The Spanish Journal of Psychology*, *27*. https://doi.org/10.1017/sjp.2024.28

Camps, J., & Torres, F. (2011). Contingent reward leader behaviour: Where does it come from? *Systems Research and Behavioral Science*, *28*(3), 212-230.

Cooke, F. L., Cooper, B., Bartram, T., Wang, J., & Mei, H. (2019). Mapping the relationships between high-performance work systems, employee resilience and engagement: A study of the banking industry in China. *The International Journal of Human Resource Management*, *30*(8), 1239-1260

Cox Jr, T. (1994). Cultural Diversity in Organizations: Theory, Research and Practice, Berrett–Koehler, San Francis-CA.

Desrumaux, P., Lapointe, D., Sima, M. N., Boudrias, J. S., Savoie, A., & Brunet, L. (2015). The impact of job demands, climate, and optimism on well-being and distress at work: What are the mediating effects of basic psychological need satisfaction? *European Review of Applied Psychology*, *65*(4), 179-188

Duchek, S., Raetze, S., & Scheuch, I. (2019). The role of diversity in organizational resilience: a theoretical framework. *BuR - Business Research*, *13*(2), 387–423. https://doi.org/10.1007/s40685-019-0084-8

Elamin, A. M., Aldabbas, H., & Ahmed, A. Z. E. (2024). The impact of diversity management on innovative work behavior: the mediating role of employee engagement in an emerging economy. Frontiers in Sociology, 9. https://doi.org/10.3389/fsoc.2024.1441109

Ely, R. J., & Thomas, D. A. (2001). Cultural diversity at work: The effects of diversity perspectives on work group processes and outcomes. *Administrative science quarterly*, *46*(2), 229-273.

Fredrickson, B. L., Tugade, M. M., Waugh, C. E., & Larkin, G. R. (2003). What good are positive emotions in crisis? A prospective study of resilience and emotions following the terrorist attacks on the United States on September 11th, 2001. *Journal of personality and social psychology*, *84*(2), 365.

Gelfand, M. J., Raver, J. L., Nishii, L. H., & Schneider, B. (2013). Discrimination in organizations: An organizational-level systems perspective. In *Discrimination at*

work (pp. 89-116). Psychology Press

Hodliffe, M. C. (2014). The development and validation of the employee resilience scale (EmpRes): The conceptualisation of a new model.

Hollands, L., Haensse, L., & Lin-Hi, N. (2023). The How and Why of Organizational Resilience: A Mixed-Methods Study on Facilitators and Consequences of Organizational Resilience throughout a crisis. *The Journal of Applied Behavioral Science*, 002188632311657. https://doi.org/10.1177/002188632 31165785

Kahn, W. A. (1990). PSYCHOLOGICAL CONDITIONS OF PERSONAL ENGAGEMENT AND DISENGAGEMENT AT WORK. *Academy of Management Journal*, *33*(4), 692–724. https://doi.org/10.2307/256287

Kuntz, J., Connell, P., & Näswall, K. (2017). Workplace resources and employee resilience: the role of regulatory profiles. *Career DevelopmentInternational*, *22*(4),419–435. https://doi.org/10.1108/cdi-11-2016-0208

Langvardt, G. D. (2007). *Resilience and commitment to change: a case study of a nonprofit organization*. Capella University.

Lengnick-Hall, C. A., Beck, T. E., & Lengnick-Hall, M. L. (2010). Developing a capacity for organizational resilience through strategic human resource management. *Human Resource Management Review*, *21*(3), 243–255. https://doi.org/10.1016/j.hrmr.2010 .07.001

Lu, Y., Zhang, M. M., Yang, M. M., & Wang, Y. (2023). Sustainable human resource management practices, employee resilience, and employee outcomes: Toward common good values. *Human Resource Management*, *62*(3), 331-353.

Luthans, F. (2002). The need for and meaning of positive organizational behavior. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, *23*(6), 695-706.

Luthans, F., Vogelgesang, G. R., & Lester, P. B. (2006). Developing the psychological capital of resiliency. *Human resource development review*, *5*(1), 25-44.

Luthans, F., Youssef, C. M., & Avolio, B. J. (2006). *Psychological capital: Developing the human competitive edge*. Oxford university press.

Maddi, S. R., & Khoshaba, D. M. (2005). *Resilience at work: How to succeed no matter what life throws at you*. AMACOM/American Management Association.

Maslach, C., Jackson, S. E., & Leiter, M. P. (1997). *Maslach burnout inventory*. Scarecrow Education.

Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. Annual review of psychology, 52(1), 397-422.

McKay, P. F., Avery, D. R., Tonidandel, S., Morris, M. A., Hernandez, M., & Hebl, M. R. (2007). Racial differences in employee retention: Are diversity climate perceptions the key?. *Personnel psychology*, *60*(1), 35-62.

Meneghel, I., Borgogni, L., Miraglia, M., Salanova, M., & Martinez, I. M. (2016). Social Context and

Resilience as Predictors of Job Satisfaction and Performance: A Multilevel Study over Time.

Näswall, K. A. T. H. A. R. I. N. A., Kuntz, J. O. A. N. A., Hodliffe, M. O. R. G. A. N. A., & Malinen, S. A. N. N. A. (2015). *Employee resilience scale (EmpRes)*. Resilient Organisations Research Report 2013/06. Christchurch, New Zealand: University of Canterbury.

Nishii, L. H., & Mayer, D. M. (2009). Do inclusive leaders help to reduce turnover in diverse groups? The moderating role of leader–member exchange in the diversity to turnover relationship. *Journal of applied psychology*, *94*(6), 1412.

Okojie, G., Ismail, I. R., Begum, H., Alam, A. S. a. F., & Sadik-Zada, E. R. (2023). The Mediating Role of Social Support on the Relationship between Employee Resilience and Employee Engagement. *Sustainability*, *15*(10), 7950. https://doi.org/10.3390/su1510795 0

Panpakdee, C., & Limnirankul, B. (2018). Indicators for assessing social-ecological resilience: A case study of organic rice production in northern Thailand. *Kasetsart Journal of Social Sciences*, *39*(3), 414-421.

Payne, W. (2009). New approaches to promoting resilience at work. *Occupational Health & Wellbeing*, *61*(11), 31.

Roberson, Q. M. (2006). Disentangling the meanings of diversity and inclusion in organizations. *Group & organization management*, *31*(2), 212-236.

Rossi, A. M., Meurs, J. A., & Perrewe, P. L. (Eds.). (2013). *Improving employee health and well being*. IAP.

Rutter, M. (2006). Implications of resilience concepts for scientific understanding. *Annals of the New York Academy of Sciences*, *1094*(1), 1-12.

Saks, A. M. (2006). Antecedents and consequences of employee engagement. *Journal of managerial psychology*, *21*(7), 600-619.

Schaufeli, W. B., & Bakker, A. B. (2003). Test manual for the Utrecht work engagement scale. *Unpublished manuscript, Utrecht University, the Netherlands*, 44-52.

Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two-sample confirmatory factor analytic approach. *Journal of Happiness studies*, *3*, 71-92.

Shin, J., Taylor, M. S., & Seo, M. G. (2012). Resources for change: The relationships of organizational inducements and psychological resilience to employees' attitudes and behaviors toward organizational change. *Academy of Management journal*, *55*(3), 727-748.

Shore, L. M., Randel, A. E., Chung, B. G., Dean, M. A., Holcombe Ehrhart, K., & Singh, G. (2011). Inclusion and diversity in work groups: A review and model for future research. *Journal of management*, *37*(4), 1262-1289.

Smith, B. W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P., & Bernard, J. (2008). The brief resilience scale: Assessing the ability to bounce back. *International Journal of Behavioral Medicine*, *15*(3), 194–200. https://doi.org/10.1080/107055008 02222972

Sundblad, F., Älgevik, T., Wanther, O., & Lindmark, C. (2013). Leading change without resistance: A case study of Infrafone. *Department of Project, Innovation and Entrepreneurship, Linköping University: Linköping, Sweden*, *1*, 14.

Tugade, M. M., & Fredrickson, B. L. (2004). Resilient individuals use positive emotions to bounce back from negative emotional experiences. *Journal of Personality and Social Psychology*, *86*(2), 320–333. https://doi.org/10.1037/0022-3514.86.2.32

Wang, J., Cooke, F. L., & Huang, W. (2014). How resilient is the (future) workforce in C hina? A study of the banking sector and implications for human resource development. *Asia Pacific Journal of Human Resources*, *52*(2), 132-154.

Wang, Z., Li, C., & Li, X. (2017). Resilience, leadership and work engagement: The mediating role of positive affect. *Social Indicators Research*, *132*, 699-708.

Waugh, C. E., Fredrickson, B. L., & Taylor, S. F. (2008). Adapting to life's slings and arrows: Individual differences in resilience when recovering from an anticipated threat. *Journal of research in personality, 42(4)*, 1031-1046.

Windle, G. (2010). What is resilience? A review and concept analysis. *Reviews in Clinical Gerontology*, *21*(2), 152–169. https://doi.org/10.1017/s0959259810000420

Innovative Pathways in Teacher Education: A New Era of ICT Integration and Digital Literacy

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Abstract

The concept of technology is familiar in education. It has been kept in consideration earlier also, formerly in classrooms in the form of audio devices, later on, computer-assisted instruction used in teaching, and now there has been an innovative and drastic paradigm shift observed in the field of education sector in the form of disruptive digital technologies like AI, Machine Learning, Robotics based, Gamification, AR and VR along with blended and flipped mode of pedagogy approaches. Nowadays, technology plays a pivotal role in the education system. Suppose we want to deliver quality education to the youth who will be the future of tomorrow's world. In that case, we must improve our standard of teacher education—ensuring better access, equity, and quality—to promote digital literacy by including technology. Technology assists our teachers, and with its help, our educators will actively implement the concept of inclusivity. Technology helps to integrate the students by providing a collaborative and engaging environment that includes digital pedagogy. This article aims to give an overview to guarantee that everyone receives an inclusive education. It also offers an in-depth analysis of technology's use in teacher education. It does this by resolving issues and expanding the reach of current online resources and ICT-based educational initiatives. The study carried out in this article looked into the goals that technological innovations can achieve in the arena of instructor education and the suggestions that the National Education Policy 2020 offered for integrating technological advances into the classroom by adopting digital technology. It also emphasizes the difficulties in putting NEP 2020's suggestions about using technology in the classroom into practice by the teacher educator. The study is qualitative, with the document analysis and data collected from various sources to be analyzed.

Keywords: *Teacher Education, Technology Integration, Digital Literacy, ICT, NEP 2020.*

Introduction

As we move from a national to a global educational system, worldwide education impacts the national education system in every way. India's educational system has undergone several vibrant expansion eras, from the Veda to the after-independence era. Renowned Indian philosophers have strongly emphasized helping people realize their true potential by considering what makes each person unique (Bisht, 2013). The primary objective of the twenty-first century is to increase aspirations in society. Still, it also requires wisdom investigation, conversation resolution, technological advances, the integration of science across all aspects of life, and most importantly, the establishment of suitable mindsets in our younger generation (Kamari & Poonam, 2022). The use of ICT in educational settings increases the amount of understanding and knowledge shared

with learners. It also allows for the incorporation of novel perspectives and competencies for students and instructors (Dodmani,2020).

Very few schools use current communicative mediums conceptually for teacher preparation. The trainers equipped teacher trainees to embrace modern technologies and foster more interactive learning environments, as these tools empower educators and learners to take greater control over instruction. One of the strongest arguments for incorporating information and communication technologies in teacher education is their potential to transform teaching and learning (Bisht, 2013). The explosion of information and communication technologies presents an enormous opportunity for professional growth for educators because teachers must possess the necessary technical skills to effectively utilize ICT successfully and to instruct and coach students in its purposeful use. Teachers must gain the pedagogical knowledge to collaborate effectively in a technologically enabled instructional setting (Dhingra & Rahman, 2014)." Instructors must be encouraged to make decisions about their ICT development needs continuously, ensuring more involvement and integration of ICT within the teaching and learning process. Opportunities for professional development must be continuously available for instructors to continue improving their computer knowledge, skills, and attitudes" (Alemu, 2015). Merely acquiring basic digital skills is not enough. Educators must design teacher education programs with a clear purpose: to cultivate digital instructional competencies. These include fostering ICT mindsets, building proficiency in information and communication technologies, enhancing data literacy, and developing a critical awareness of both the advantages and the challenges of integrating technology into classroom practice. Teachers with strong digital competencies are better equipped to integrate technology into their daily teaching practices (Kaminskienė et al., 2022). Only well-prepared teachers can effectively meet learners' evolving needs by adopting various technological advancements to enhance digital literacy.

The need and significance of the Study in Teacher Education program with the help of ICT Integration.

Technology has completely changed our society, and educational endeavors at the academic level have yet to keep pace with this technological advancement. The teacher imparts instruction in our educational setting in an old-fashioned, teacher-centric manner that is frequently dull and fails to pique students' interests. However, student-centric education is the norm in the twenty-first century. Because students absorb knowledge from various sources, using technology and

multimedia in the classroom is crucial, and teachers must also be proficient in these areas. The current study is critical and necessary since it demonstrates ICT teachers' educational functions.

Review of Related Literature

Karunakaran and Dhanawardana (2023) study focuses on assessing the problems and issues faced by social science teachers in the teaching-learning process. Researchers conducted the study in the three education zones of Sri Lanka by conducting online interviews with twenty-four social science teachers who taught junior secondary classes. Researchers found the problems of (i) accessing ICT resources, as access to ICT resources was a problem that teachers experienced; (ii) skill development in the ICT teachers lamented a problem relating to their skill development in the ICT area; (iii) availability of resources, in terms of disparities being evident among schools about the availability of resources in the ICT area; and (iv) quality ICT infrastructure, since disparities were evident in the quality of ICT infrastructure available among schools. The study recommends the necessary steps by education policymakers and other pertinent individuals to address this issue within the school system.

Kaminskienė, Järvelä and Lehtinen (2022) study deals with a challenge and a call regarding teachers' digital skills and technology integration into educational content and processes. It raises questions regarding how technologies have produced new skill gaps in pre-service and in-service teacher training and how that has affected traditional teacher education. This way, we discuss what interventions apply to different contexts to address such challenges. Educators should consider technology as a field in which they develop and apply new competencies to create learning environments for teacher-students.

Alemu (2015) investigated the challenges and promises made for teaching learning practices by integrating ICT into teacher education programs. The researcher tries to enhance instructors' competencies through pre-service and in-service education by imbuing ICTs as pedagogical tools for identifying Adama University instructors using different teaching-learning environments. The researchers followed a mixed-method research design and gathered data through observation, individual interviews, and questionnaires from the school's instructors, deans, and departments selected for the study. The findings revealed a positive attitude toward integrating digital technology into the educational system.

Ghavifekr, Kunjappan, Ramasamy, and Anthony (2016) study the Issues that challenge ICT integration. The study used a quantitative research method in Melaka, Malaysia. Data was

collected randomly from 100 secondary school teachers in the state. The researcher found the key issues and challenges significant in teachers' use of ICT tools were less available with less network connections, a lack of technical support and practical training, limited time to practice the technology to get familiar with it, and a lack of teachers' competency. Researchers found that male teachers use ICT tools more than female teachers in classroom practices.

Objectives of the Study

1. To study the different technology theoretical frameworks served by technology Integration in Teacher Education.

2. To find out the various provisions for ICT integration in teacher education.

3. To find out the challenges to implementing NEP 2020 in integrating Technology in Teacher Education to improve digital literacy.

4. To study the recommendations and suggestions of NEP 2020 for effective implementation of ICT integration in teacher education to enhance digital literacy.

Research Methodology

This study adopts a qualitative method using document and thematic analysis. The researcher collected data from primary sources such as NCF 2005 and the NEP 2020 policy document, and secondary sources including websites, magazines, journals, newspapers, and available e-content. The researcher selected data using databases like Google Scholar, ResearchGate, and official government websites (MOE, NCERT, NCTE, UGC, My Gov for Digital India), applying search strings related to topic keywords. The search was limited to social science subject areas, article document types, English language publications, and journal articles as source types. After reviewing the remaining papers, on such criteria, the researcher removed duplicates and selected 37 articles and eight government reports to meet the study's inclusion criteria for the final review. Drawing on Adam's (2015) and Bloom's (1956) frameworks, a classification or tiering of documents (e.g., policy-level, institutional-level, practitioner-level) would have clarified the cognitive depth and scope of analysis. Employing a structured framework, such as TPACK or SAMR, allowed for identifying levels of ICT integration and pedagogical alignment, offering analytic rigor. Figure generated using Napkin AI based on original text content created by the researcher.

Objective-wise discussion

Objective 1: To study the different technology theoretical frameworks served by technology Integration in Teacher Education.

Theoretical Framework of Technology Integration

❖ Mishra and Koehler (2006) created the **framework known as TPACK,** which places a priority on when teachers can combine the domains of technological knowledge (TK), pedagogical knowledge (PK), and content knowledge (CK) in order to develop engaging experiences for learners, they are integrating technology effectively, Modiba (2024). To enhance learning, TPACK holds that educators must comprehend how technology integrates with pedagogy and subject matter (Mishra & Koehler, 2006). This incorporation ensures that technological innovation is an integral part of education rather than just an add-on (Voogt & McKenney, 2017).

❖ **SAMR(Substitution, Augmentation, Modification, and Redefinition**) (Puentedura,2006) The approach urges teachers to go beyond mere substitutions to accomplish transformational applications utilizing technology that drastically change instructional tasks. It also functions as a tool for measuring the degree of incorporation of Technology (Hamilton et al., 2016).

❖ In online and blended educational settings, where technology-mediated interactions serve an essential role in encouraging cooperative and reflective instruction, the **Communities of Inquiry Framework** developed by Garrison, Anderson, and Archer (2000) demonstrates the three critical components for developing effective educational surroundings: Social Presence, The cognitive domains Presence, and Instruction Presence highlights the significance of designing effective technological connections that facilitate an immersive educational experience (Garrison et al., 2001).

Frameworks for Technology Integration in Education

TPACK
Integrates technology, pedagogy, and content knowledge

SMAR
Sets specific, measurable, achievable, relevant, and time-bound goals

Substitution, Augmentation, Modification, and Redefinition

UTAUT Framework
Evaluates technology acceptance and usage

Diffusion of Innovations
Explores how new ideas spread and are adopted

Communities of Inquiry Framework
Fosters collaborative learning and critical thinking

Connectivism
Focuses on learning through networks and connections

Blooms Technology Enhanced Instruction
Enhances learning through technology-driven activities

Constructivist
Emphasizes active learning and knowledge construction

❖ Intellectual skills are categorized into hierarchy stages according to **Bloom's classification** (1956): Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation. Technology can assist with these cognitive procedures by offering resources that improve the ability to think critically and solve problems (Bloom, 1956). Teachers can create technology-enhanced instruction methods that target different cognitive levels by using this classification as a point of reference(Adams, 2015)

❖ According to **the constructivist theory of Piaget (1973) and Vygotsky** (1978), students build their cognition via connections to their surroundings. The constructivist theory views technology as a tool that facilitates experiments, inquiry, and solving problems, enabling students to take part in building their understandings (Piaget, 1973; Vygotsky, 1978). The theory behind this method emphasizes how technological advances might support student-focused, interactive, and experiential learning (R. Sharma, 2023).

❖ Siemens first proposed **connectivism in 2005**. He outlined how to understand education in the age of technology. According to him, learning is navigating and communicating in those networks, emphasizing networking and digital connections as the route toward constructing

understanding. Due to their continuously changing and spreading nature, these links facilitate the spread nature of information and become possible and sustainable mainly through technologies (Siemens, 2005).

❖ **Venkatesh, Morris, Davis, and Davis (2003)** developed the **UTAUT framework**, which looks at four primary constructs: social influence, performance expectancy, effort expectancy, and enabling conditions. This model looks at how users embrace technology. This theory offers insights into overcoming obstacles and improving technology use by identifying variables that affect the adoption and successful application of technological innovations in education (Venkatesh et al., 2003).

❖ **Diffusion of Innovations:** This theory directs tactics for efficient execution and aids in understanding the elements influencing the acceptance of technology in educational contexts (Rogers, 2003) & (Sahin, 2006)

Objective 2: Provisions for ICT Integration and Technology Pedagogies in Teacher Education Programme in India

Various commissions and committees in national plans and programs have occasionally recognized the integration of ICT in teacher education programs and acknowledged the incorporation of technology in educators' training. To make education as prescribed by National Curriculum Framework 2005 principles to bring flexibility in assessment, following a constructivist approach, learning without burden, holistic development, and out-of-the-classroom learning to keep this teacher education needs to instruct and empower the educator to differentiate between the damaging use of ICT and the beneficial, dynamically appropriate utilization of ICT (*NCf 2005-English.Pdf*). The National Focus Group on Educational Technology (2006) recommended that multimedia and technology-driven education be incorporated into pre-service teacher preparation programs so that they become a natural part of the process of learning and instruction (p. 15). It also recommended proficiency in ICT for administrators, heads of schools, and other educational officials, in addition to teachers (Research & Ncert, 2015). In order to design NCFTE, 2009 NCERT organized two-week orientation programs for educators of teachers and used information technology and IT-based learning resources in partnership with NCTE, which is a step toward integrating information and communication technology in the curriculum for teacher preparation in schools. (Giri, 2022). National Knowledge Commission ensures the availability of additional resources, like broadband and communication capabilities and PCs. It also fully utilizes

technological advances in computer-based learning, and educators and other staff must receive training (Kundu, 2021). The Government of India spearheaded educational initiatives under Digital Mission 2015 through the Ministry of Education to empower teachers with the skills needed for a technology-driven classroom. Launched via the National Mission on Education through Information and Communication Technology (NMEICT), these Digital India programs aim to equip educators with the digital competence required for 21st-century teaching (Kennedy & Thangiah, 2020).ICT can be creatively used to promote pre-service and in-service educators' intellectual and professional growth (NCFTE, 2009) &(Singh, 2020). The Rashtriya Madhyamik Shiksha Abhiyan (RMSA, 2009) and the Sarva Shiksha Abhiyan (SSA,2000) have primarily incorporated ICTs in secondary education.

Objective 3: Integration of innovative practices involved in teacher education programs in the context of the National Education Policy to improve Digital Literacy

❖ National education policy is the major reform in education, especially for the teacher education program, and it is working on the significant aspect of Bhartiya Gayan Parampara NEP's emphasis on developing e-content in the regional languages. NETF (National Education Technological Forum), NEP paragraph 23.3 paved the way for digital technology Integration by building intellectual and Institutional capacities in Education Technology. (Ghosh, 2023).

❖ NEP 2020 states that efficient ICT tools will be provided to educators at institutions so they can successfully incorporate e-content into their lesson plans.

❖ In order to deliver standardized training programs to plenty of educators in a brief period, the National Education Policy 2020 proposes that using technological platforms like SWAYAM/DIKSHA for digital training for educators would be promoted.

❖ Innovations in technology for streamlining education planning, executives, and handling include procedures linked to enrollment, attendance, evaluation, etc.; encouraging teacher training and professional growth; improving educational access, and strengthening instruction, learning, and assessment processes. (NEP,2020; Para 23.5)

❖ NEP 2020 states that instructors will receive extensive instruction in learner-centric pedagogy and how to use online instructional tools and techniques to become proficient online content developers. The importance of the teacher in encouraging students to engage with the material and with one another actively will be emphasized. (Giri, 2022)

Purpose of Technology Integration for Teacher Education

The teaching profession now offers more options due to revolutionary technological breakthroughs in the last few decades. However, educators must also develop themselves to use these resources. **(Tenkorang, 2011) (Robinson & Latchem, 2003).**

❖ Technology helps teachers prepare for the classroom, and educators teach pre-service teachers ICT through various methods and strategies. They use applications like Kahoot, Google Classroom, databases, spreadsheets, and word processors. These technologies assist teachers in delivering hands-on instruction.**(Kamari & Poonam, 2022)**

❖ The University Grant Commission (UGC) has recommended that teachers complete online ongoing professional development (CPD) through simulated situation training on refresher orientation and Android refresher courses via video conferencing and online. This approach promotes ongoing professional growth. **(Kumar, Sunil,2020)**

❖ ICT-based instruction and learning initiatives can help educators conquer feelings of isolation by bringing them outside the educational setting and establishing connections with peers, mentors, curriculum specialists, and the larger worldwide teacher community **(Bisht, 2013).**

❖ Technology integration in teacher education programs helps support multiple learning styles for learners.

❖ Assistance for educators in pursuing ongoing professional growth and imparting knowledge at the learner's pace.

Thematic analysis towards integrating ICT in teacher Education aligns with Education Technology Frameworks.

Three broad themes will be identified based on the literature review. The first central theme is under Institutional and structural foundations; subthemes were (Teacher training, Resource constraints Higher Education, Learner education, and ICT Policy Integration) that mapped with the TPACK Framework and reflect the contextual knowledge (CK PK, TK) teachers must gain in pre-service education—also links to the "Knowledge Domains" of the TPACK model.

The second central theme was Digital Pedagogies and Competencies that relate to subthemes (Digital competencies, digital divide, education technology, technology integration, online education, and e-learning), mapped with **Dig Comp Edu SAMR framework** focusing on teachers' digital skills, tools used, and pedagogical application and **SAMR** Technology used to **augment** or

transform teaching practice—terms like "e-learning" map to **Modification** or **Redefinition** stages.

The third central theme is Professional Development and Learner Focus related to sub-themes (Professional development, Students (childhood to university), and Lifelong Learning), focusing on **professional engagement**, **student-centered learning**, and **reflective practice** (core to DigCompEdu). It also connects to **contextual and pedagogical knowledge** in TPACK.

Challenges In Integrating ICT in Teacher Education

Digital Divide: Not every learner or educator program has the required web access, software, or hardware. Ensuring that learners and teachers have fair distribution of technology and the supplies of resources they need is a significant problem in closing the technological gap (Pathak et al., 2023)

❖ **Infrastructure Challenge:** It can be expensive and expensive to set up and sustain the necessary technology facilities, such as computer laboratories, rapid internet access, and the latest software. (Pathak et al., 2023)& (Karunakaran & Dhanawardana, 2023)**.**

❖ **Time Constraints:** A large body of research found that one of the main obstacles to teachers using ICT in their instruction is time constraints and the challenge of planning enough time to utilize computers for courses (Ghavifekr et al.)**.**

❖ **Teachers' competence:** Qualified teachers who can integrate ICT into instruction are in short supply because teacher training does not include how to use ICT in the classroom. In order to equip pupils with the talents they need for the modern techno-oriented classroom, teachers must learn new abilities due to inadequate instruction. Educators find it challenging to employ ICT resources to enhance teaching and learning (Saha, 2023)**.**

❖ Even with the creation of national or EU frameworks for digital competencies, there is still a tendency among young professionals and educators during service training toward a lack of coherence and continuous advancement of digital expertise.(Kaminskienė et al., 2022)

❖ There is a cognitive divide between inexperienced in-service teachers and seasoned teachers through advocacy, in-service training, and occasional initiatives to build capacity(Sharma, 2022)**.**

❖ There is inadequate training for educator trainers. Lacking educators' complete support and devotion to teaching, we cannot bring ICTs into teacher education. There are not many myths

about employing these tools in the training of educators.(Singh, Gaurav & kumar ,Girijesh., 2010)**.**

Navigating ICT Integration in Teacher Education

Infrastructure Limitations — Lack of adequate ICT infrastructure in schools.

Resistance to Change — Educators' reluctance to adopt new ICT methods.

Insufficient Training and Professional Development — Inadequate ICT training for teacher educators.

Curriculum Constraints — Curriculum not aligned with ICT integration needs.

lacking of coherence and continuous advancement of digital expertise

Digital Divide — Unequal access to ICT resources among students.

Time Constrains

Paradigm Shift in Teaching Learning

Assessment and Evaluation Issues — Challenges in assessing ICT skills effectively.

Ethical Concern

Keeping Up with Rapid Technological Changes — Difficulty in adapting to evolving ICT technologies.

ICT Integration in Teacher Education — Incorporating ICT tools in teacher education programs.

❖ Fixing specific technological problems requires expertise because inexperienced operators sometimes cause issues that interrupt the online session. This situation challenges the person in charge when no one else can resolve the problem (Tyagi, 2023)**.**

❖ Offering Technical Assistance for the Use and Upkeep of Technologies (Vijaykumar, 2011) with Ethical Concerns.

❖ Paradigm Shift in Teaching, Learning, and Availability of Open Education Resources.

Objective 4: Recommendations/Suggestions regarding ICT Integration in the Teacher Education Program

✚ It is preferable to look for more efficient knowledge-sharing strategies. Educators should incorporate these cutting-edge concepts into instructional strategies to satisfy the needs and aspirations of society and learners.

✚ The government should improve the effectiveness and efficiency of education and training. They should connect schools and curricula to the developing networks and information resources.

- The stakeholders and college authorities should have enough facilities and resources to implement ICT integration practically in teacher education.

- There should be proper strategies and policies that open the minds of teachers to adopting ICT.

- Software developers, educators, and teachers should collaborate to design a suitable form of software that addresses diverse teaching and learning competencies for better teacher and student development.

- Study of disruptive Technology and the present scenario of ICT implementation in schools and teacher education institutes, and designing e-contents, strategies, and training modules on content-ICT-pedagogy integration based on the new pedagogical and curricular framework suggested in NEP 2020.

- In-service and pre-service training should reflect ICTs in pedagogical analysis.

- Design and prepare digital education platforms at the national and state levels, including portal learning apps and blockchain technology, per the rising educational needs.

- Collaboration and coordination with national and state-level institutions to ensure better implementation of ICT integration in teacher education.

- Teachers should get enough opportunities to practice using technology more practically during teacher training programs.

Conclusion

ICT calls for a shift in the role of the teachers, who will be endowed with new responsibilities and expertise beyond the classroom walls to allow quality education. The National Education Policy also recommends the successful use of disruptive technology. The government of India is promoting the integration of digital technology at every stage of education, from school age to higher education, by coming up with various digital initiatives. The review has explored the integration of technology in teacher education, such as TPACK, SAMR, Communities of Inquiry framework, Bloom's classification, Constructivist and connectivism approach, UTAUT framework, and the Technological Acceptance Model (TAM), and how these models guide teachers in designing and adopting digital pedagogical approaches. Secondly, various digital initiatives supported by the government of India, like DIKSHA, SWAYAM, Swayam Prabha, National Digital Library, e-Vidya, ARPIT, Virtual Labs Platform, etc., to enable digital infrastructure in teacher training institutes to promote digital competence and capacity building for

pre-service and in-service teachers. The study further identified significant challenges in implementing the NEP 2020 vision regarding digital literacy in teacher education. Finally, the study analyzed NEP 2020's recommendations under the 23rd and 24th bullet, focusing on integrating technology at all stages of teacher education. Policy advocates for continuous professional development through various refresher courses and short-term courses to foster a digitally fluent workforce. In teaching, incorporating technology allows teacher educators to engage in interactive and creative learning methods to address infrastructural disparities and upbringing teacher training programs to support reflective and adaptive teaching practices. Implementing the NEP's digital vision must be holistic and inclusive to ensure that future educators are well-equipped for the demands of 21st-century classrooms.

References

Adams, N. E. (2015). Bloom's taxonomy of cognitive learning objectives. Journal of the Medical Library Association (JMLA), 103(3), 152–153. https://doi.org/10.3163/1536-5050.103.3.010

Alemu, B. M. (2015). Integrating ICT into teaching-learning practices: Promise, challenges and future directions of higher educational institutes. Universal Journal of Educational Research, 3(3), 170–189. https://doi.org/10.13189/ujer.2015.030303

Bisht, D. (2013). Integration of ICT in Teacher Education for Enhancing Competency Based Teaching. Techno LEARN: An International Journal of Educational Technology, paper 54.

Bloom, B. S. (1956). Taxonomy of educational objectives: The classification of educational goals. Longmans, Green.

Central Institute of Educational Technology. (2012). A model curriculum for ICT in education. Ministry of Education, Government of India.

Dodmani, D. S. (2020). ICT Integration In Teacher Education. International Journal Of Creative Research Thoughts, 2238–2242.

Dhingra, K., & Rahman, A. (2014). Integrating ICT in Teacher Education: Suggesting Approaches. International Journal of Education, Society, and Development, 1, 44–54.

Garrison, D. R., Anderson, T., & Archer, W. (2001). Critical thinking, cognitive presence, and computer conferencing in distance education. American Journal of Distance Education, 15, 7–23. https://doi.org/10.1080/08923640109527071

Gaurav Singh and Girijesh Kumar (2010). ICT In Teacher Education In India: Still In Search Of Its Application. I-manager's Journal on School Educational Technology. 5(3), 49-55. https://doi.org/10.26634/jsch.5.4.1153

Ghavifekr, S., Kunjappan, T., Ramasamy, L., & Anthony, A. (2016). Teaching and learning with ICT tools: Issues and challenges from teachers' perceptions. Malaysian Online Journal of Educational Technology, 4(2). http://files.eric.ed.gov/fulltext/EJ1096028.pdf

Ghosh, S. R. (2023). Integration of technology in education in NEP - 2020. The Impression: A Journal on Multidisciplinary Studies, Vol. X (Annual), 34–41.

Giri, S. (2022). ICT in teacher education with reference to OER and NEP, 2020. Zenodo – CERN European Organization for Nuclear Research. https://www.academia.edu/92632518/ICT_in_Teacher_Education_with_Reference_to_OER_and_NEP_2020

Hamilton, E., Rosenberg, J., & Akcaoglu, M. (2016). The Substitution Augmentation Modification Redefinition (SAMR) model: A critical review and suggestions for its use. TechTrends, 60, 433–441. https://doi.org/10.1007/s11528-016-0091-y

Kumari R. & Poonam (2022). Integration of ICT in Teacher Education. Bhartiyam International Journal of Education & Research 11(3), 2277-1255

Kaminskienė, L., Järvelä, S., & Lehtinen, E. (2022). How does technology challenge teacher education? International Journal of Educational Technology in Higher Education, 19(1), 64. https://doi.org/10.1186/s41239-022-00375-1

Karunakaran, S., & Dhanawardana, R. (2023). Integration of ICT in the teaching-learning process: Challenges and issues faced by social science teachers. European Journal of Education and Pedagogy, 4(4), Article 4. https://doi.org/10.24018/ejedu.2023.4.4.696

Kennedy, I. R., & Thangiah, R. (2020). Digital India initiatives in education: An overview. https://doi.org/10.6084/m9.figshare.14398727

Kundu, D. A. (2021). A sound framework for ICT integration in Indian teacher education. Retrieved August 25, 2024, from https://www.academia.edu/49018423/A_Sound_Framework_for_ICT_Integration_in_Indian_Teacher_Education

Ministry of Education. (2010). Guide for the implementation of the ICT@Schools scheme. Government of India.

Ministry of Human Resource Development. (2020). National Education Policy 2020. Government of India. https://www.education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf

Mishra, P., & Koehler, M. J. (2006). Technological Pedagogical Content Knowledge: A Framework for Teacher Knowledge. Teachers College Record, 108(6), 1017-1054.

Modiba, N. S. (2024). The contribution of transformative pedagogy to the learning space of scholars: A case of South African universities. Education, Humanities and Social Sciences, 5(16), 3316–3327. https://doi.org/10.38159/ehass.202451650

National Council of Educational Research and Training. (2005). National Curriculum Framework 2005. https://ncert.nic.in/pdf/nc-framework/nf2005-english.pdf

National Council of Educational Research and Training. (2015). National focus group on educational technology (Working paper No. 7436). https://ideas.repec.org//p/ess/wpaper/id7436.html

National Council for Teacher Education. (2021).National Professional Standards for Teacher Education.NCTE. https://ncte.gov.in/

National Council for Teacher Education (2020) ITEP Curriculum Framework .https://ncte.gov.in/

Pathak, R. K., Yadav, A., Panda, P. C., Kumar, N., & Mishra, D. (2023). The challenges of implementing ICT in teacher education. Boletín de Literatura Oral - The Literary Journal, 10(1), Article 1

Puentedura, R. R. (2006). Transformation, technology, and education. http://hippasus.com/resources/samr/SAMR_Transformations.pdf

Piaget, J. (1973). To understand is to invent: The future of education. Viking Press.

Rogers, E. M. (2003). Diffusion of innovations (5th ed.). Free Press.

Saha, T. (2023). The role of ICT in education: Challenges and issues. International Journal of Emerging Technologies and Innovative Research, 10(2), ppf794–f801. http://www.jetir.org/papers/JETIR2302586.pdf

Sahin, I. (2006). A detailed review of Rogers' diffusion of innovations theory and educational technology-related studies based on Rogers' theory. The Turkish Online Journal of Educational Technology, 5(2)

Sharma, A. (2022). Information and Communications Technology for Teacher Training in India, ICT India Working Paper, No. 64, Columbia University, Earth Institute, Center for Sustainable Development (CSD), New York, NY

Sharma, R., & Shukla, C. S. (2023, March 31). The constructivist approach in education: Projecting the insights of Piaget and Vygotsky into the future. International Journal of Research Culture Society, 7(3), 79. https://ijrcs.org/wp-content/uploads/IJRCS202303016-min.pdf

Siemens, G. (2005). Connectivism: A learning theory for the digital age. International Journal of Instructional Technology and Distance Learning, 2(1), 3–10. https://jotamac.typepad.com/jotamacs_weblog/files/connectivism.pdf

Singh, B. (2020). An analytical study of National Curriculum Framework for Teacher Education—2009. https://doi.org/10.13140/RG.2.2.18693.42724

Shilenge, H., & Ramaila, S. (2020). Assessing TPACK integration in senior phase science teaching and learning at South African township schools. https://core.ac.uk/download/340492951.pdf

Tyagi, J. (2023). Online and digital education under National Education Policy: Ensuring the use of technology. NOUS: A Half Yearly Refereed & Peer-Reviewed International

Journal of Education, Arts, Humanities & Social Sciences, 1(1), 21–27. https://csjmu.ac.in/nousjournals/about-the-journal

University Grants Commission. (2020). Guidelines for innovative pedagogical approaches and evaluation reforms. https://www.ugc.gov.in/pdfnews/1031121_Guidelines-Innovative-Pedagogical-Approaches-Evaluation-Reforms.pdfUniversity Grants Commission+10

University Grants Commission. (2017). Guidelines for developing online courses for SWAYAM. https://www.ugc.gov.in/pdfnews/3885329_MOOCs-Guideline-%28Development--Funding%29.pdf

Wilson, K. B., Ayebi-Arthur, K., & Tenkorang, E. Y. (2011). ICT integration in teacher education—A study of University of Education, Winneba. https://www.academia.edu/67445957/ICT_Integration_in_Teacher_Education_A_Study_of_University_of_Education_Winneba

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. Management Science, 46(1), 186-204.

Vijaykumar, R. (2011). Trends and Challenges of Integrating ICT in Indian Education: A Paradigm Shift in 21st century. Journal on School Educational Technology, 7(2), 13–19.

Voogt, J., & McKenney, S. (2017). TPACK in teacher education: Are we preparing teachers to use technology for early literacy? Technology, Pedagogy and Education, 26(1), 69–83. https://doi.org/10.1080/1475939X.2016.1174730.

Vygotsky, L. S. (1978). Mind in society: The development of higher psychological processes. Harvard University Press.

Partition of India: A Humanitarian Crisis or Political Strategy?

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Abstract

The Partition of India in 1947 is one of the most traumatic events in modern history; it marked the end of British colonialism and the beginning of two independent countries, India and Pakistan. While the actual Partition may have been an unavoidable compromise for the Indian National Congress and the Muslim League, as they were experiencing intense differences and tensions, the reality of Partition went far beyond politics. This thesis will assess the various understandings of the causes of Partition. It is concerned with the colonial practices and policies of the British; the political conversations that did not lead to any understanding; and some areas of colonial and postcolonial communal tensions. The argument not only reveals how the hurried departure of the British coupled with no planning and administrative failure led to violence of extraordinary proportions at the time, forced migration, and irreversible harm to human lives, it illustrates how the mass displacement of nearly 15 million people along with the horrendous communal riots and losses to the people and the countries made Partition one of the largest human catastrophes of the 20th century. The effects of Partition continue to be felt, and the consequences can be observed in Indian-Pakistani relations, refugees' narratives, and public memory for generations since. By interrogating the dynamic interplay between political motivations and human costs, this thesis will contend that although the Partition of India was politically, an otherwise politically contrived construct, it must be primarily understood as a humanitarian catastrophe, along with ongoing and profound social, emotional, and geo-political impacts.

Keywords: *Partition, Communalism, Displacement, British Raj, Congress, Muslim League, Refugee Crisis, Nationalism.*

The Partition of India occurred in 1947. It remains one of the most tragic and complicated moments of history in a modern South Asia. It signified the end of almost two hundred years of British rule and the emergence of two sovereign states - India and Pakistan - in the midst of unprecedented violence, mass movement of people, and anti-communal violence. The Partition was not simply a political changing of the guard; it was a civilizational breach which tore families apart, divided communities, and marked millions of individuals with lasting emotional and psychological scars. When the Indian sub-continent was about to step out of colonialism to take independence, the hope of freedom was drowned out by the gigantic humanitarian disaster surrounding it. Millions were displaced overnight and estimates of one to two million deaths during the collective riots and forced population movements were recorded. The horror of Partition raises a very important and contentious question: Was the division of India the only or natural ending to a trajectory of

communal division? Was it a political tactic that was carried out under time constraints and irresponsibly to the benefit of rogue interested parties? Any hope for a nuanced understanding of what happened during this event requires examination and understanding of a variety of historical, political, religious, and social forces that were working sedimented accumulatively onto each other over decades. The roots of communal discord in India can be traced back to the policies of the British colonial administration which purposely inflamed religions and communities, to make British rule less hazardous (hence the policy of divide and rule). What became the modern form of communalism was aggravated by the British practice of institutionalizing distinct, communal identities, providing separate electorates to Muslims in the Morley-Minto Reforms of 1909, and promoting separate political agendas, such as the Indian National Congress and All-India Muslim League. European (or alien) political ideologies confused and complicated homegrown and historically existent religious and national sentiments. Whereas the Congress puteaed to claim to represent all Indians (including Muslims), in practice, many Muslims felt alienated and marginalized within the emerging definition of an Indian nation—ultimately evident from the need of some Muslims eventually to seek the recognition of the Muslim League's agenda for a nation separate from India. While the Lahore Resolution of 1940 was an extreme moment (in the sense of a proposed demand to identify new form of nation, a conceived Pakistan), and appeared to be justified as a solution based on the preservation of religious and cultural identity, the issue remained...was Pakistan the only solution? Could there have been other serious considerations of alternative frameworks, such as a continuation in colonial spirit with a federal arrangement giving recognition to provinces and semi-autonomous units? Was the inability to reach a consensus due to intractable political positions or was the intent of some leaders to build a nation based on religious exclusivity? And in this resonates the crux of the matter - what was the Partition: Was it an accounting of a long-standing humanitarian crisis in communal alienation, or an act of political strategy manifested through leaders' aspirations and the colonial backdrop of British expediency? There is no simple or straightforward answer to the latter. The Partition was a culmination of the interplay between political negotiation, communal narratives, rationalities, and colonial machinations. One cannot easily overlook the role that the British had in hastening the subcontinent's division. Following the end of World War II, Britain's economic dilemma in the face of waning global power pushed it towards a premature exit from India. The appointment of Louis Mountbatten as the last Viceroy, with the hastily drawn-up plan to instigate the

Independence of India by rendering a date of disengagement to August 15, 1947, provided such little room for a plan for a peaceful disengagement. The guessing of both time required and transition processes for boundary demarcation, hurriedly entrusted to an uninterested and unseasoned Sir Cyril Radcliffe, there should be no understatement to the pace of the boundary demarcation process or its secretiveness. The Radcliffe Line, known for slicing Punjab and Bengal in half, was drawn across villages, rivers, and communities with no really solid rationale or public discussion. The imposition of the arbitrary lines incited one of the largest, but also one of the most horrendous, mass migrations ever witnessed, the lines moving Hindus and Sikhs into India, and Muslims toward Pakistan. The assaults, abduction of women and children, mass murders, and looting perpetrated by mobs, militias, and revenge attack groups did not take place because there were allegedly "Rent-A-Mob" action groups operating, it occurred because there was no adequate administrative arrangements, nor security arrangements in place for the confused populations in the midst of these fresh boundaries. The sheer scale of violence and displacement and the timeframes of the forced migration meant that the Partition represented more than a political movement underpinning borders or countries; it represented a large-scale humanitarian catastrophe. The violence and displacement was unlike anything ever experienced elsewhere in the world. The rail cars of refugees were on their way to become "moving morgues"; complete villages were levelled; women were held hostage, raped and almost always murdered; neighbours became enemies due to the fuelled frenzy of hatred provoked by unverified reports, lies and deceit; the survivors were manipulated by animosity disguised as news stories. And all of this led to human psychologies, the long-lasting trauma, suffered by the survivors – most of whom remain silent about their experiences - reverberating through the generations. Those camps that did exist for refugees were filled, filthy, poorly maintained; to where the governments involved on either side of the desire for rehabilitating the displaced were only partly successful with much of their success proving to be unsuccessful, not to mention the permanent loss of homes, property, and identities. The consequences of this human tragedy extended beyond physical harm to encompass emotional and cultural harm. The trauma from Partition is still apparent in literature and art, cinema and oral histories across South Asia. Certain scholars argue that there was an inevitability to Partition for strategic reasons, while also recognizing the cost of human suffering. They cite the deep-seated communal divisions, the failure of the Cabinet Mission Plan, and the unwillingness of the political actors to compromise where there were indications that a united India was no longer

possible. For leaders such as Muhammad Ali Jinnha, the demand for Pakistan was about more than just politics; it was about survival. Still, there are also compelling arguments that Partition was about political manoeuvring for leaders to achieve their aims. Jinnah's insistence on the two-nation theory, Nehru's centralized vision of post-colonial India, and Mountbatten's regime of artificial time were all seen to represent the prioritization of political power over people. One historian even argues that the British understood what was "best" for them in terms of regional foreign affairs. The legacy of Partition persists in the social and political realities of nation-states of South Asia particularly in India and Pakistan and its long-running hostile relations, including indecision in the fallout over Kashmir. Communal tensions continue to rise in India and Pakistan (often linked to narratives around unresolved Partition issues). For Transnational communities, the pain of forced relocation and longing for lost homelands remains. For Transnationals, notion of partition can be framed around identity, nationalisms, or even geopolitical relationships which shift each decade, day, and minute. In essence, Partition was an "event" without an endpoint; it reconfigured identities, nationalisms, and geopolitical relations. The aim of the research paper is to explore Partition of India and Pakistan as an "event." Next: to review the study of Partition as a contested phenomenon - as both a massive humanitarian crisis, and as an intentional, politically-driven strategy. Our study aims to critically examined if the causes of partition, the communal tensions that surrounded it, the roles of colonial and Indian leaders, and ever-present history continues to plague displaced populations today. Primary and secondary sources will be reviewed, such as archival resources, testimony, literature, art, et al. The goal is not to blame any one actor, but rather to provide a nuanced and balanced portrayal of an event that still resonates in the psyches and politics of South Asia. In closing, the Partition of India was a tragedy of human suffering while also serving as a complicated political transaction. Its legacy is not straightforward and requires a multidisciplinary and empathetic approach. As we reckon with this painful history, we must wrestle with the question: could this disaster have been avoided? Or was it just the unfortunate price of decolonization and competing nationalisms? This research paper seeks to engage the reader with these important questions and contribute to the continuing discussion of Partition as both a humanitarian crisis and a political strategy.

Literature Review

The Partition of India in 1947 has produced an enormous amount of literature that gives a variety of interpretations from nationalist, revisionist, subaltern, and feminist views. The variety of

literature reflects the complexities of Partition - not simply a political event, but a tragic experience for human beings. Bipan Chandra, in India's Struggle for Independence (1989), provides a nationalist perspective on the failure of the anti-colonial struggle, and the failure to maintain unity. He argues that the British colonial "divide and rule" policy deliberately created and encouraged religious splits which ultimately led to the Partition. Chandra puts considerable blame on colonial mismanagement and the communal politics of both the Muslim League and some elements of the Hindu Mahasabha. Yasmin Khan offers a revisionist approach with her important book The Great Partition (2007) that challenges political narratives. She critiques having an under-resourced government in a hurry to leave a colonized territory with poor planning and no administrative discretion, that makes Partition into a disaster. Khan demonstrates that human displacement at a mass scale, communal violence, and the role of panic and rumors, to be the important parts of the violence that can occur, and the chaos of things beyond high-level political actions. Urvashi Butalia looks chiefly from a feminist and subaltern perspective, in her book The Other Side of Silence (1998) and she highlights the erased narratives about women, and marginalized group experience. Butalia highlights how, through oral histories and individual testimonies, during Partition physical dislocation was not the only thing that happened, also emotional and psychological trauma ensued in which especially women suffered through abduction, rape, and conversions. Butalia has shed light on personal sufferings which have been disregarded in political contexts. Ayesha Jalal publishes The Sole Spokesman (1985), which deals with the politics of Partition in terms of Muhammad Ali Jinnah's ambivalence. Jalal takes a critical view when she portrays Jinnah's idea of Pakistan was not so much a demand as an ideological bargaining chip to alter the political calculus of participation; consequently, Partition was a failure of political judgement rather an end deduced from excessive political agency. Even though these perspectives are different, there is a major absence in the scholarship. There is a great deal of work done on the political and ideological aspects of Partition and on the gendered aspects which is particularly important, however, the humanitarian crisis entailing mass displacement, intergenerational trauma, and refugee resettlement, remains secondary. In much of the scholarship there are almost no works which foreground the humanitarian tragedy as the crux of the discussion. The intent of this study is to begin to fill that gap by placing an emphasis on humanitarian suffering due to Partition, and to marry political critique with the lived experience of dislocations, in hopes of achieving a more complete understanding of one of the most consequential events in South Asian history.

Objectives of the Study

The goal of this study is to explore if the Partition of India was a politically planned move or simply a humanitarian catastrophe—or some combination of the two. To do this research has focused on three key areas which help unravel the multiple dimensions of Partition. First, this research looks at some of the political negotiations and miscalculations that contributed to the disintegration of British India. This area deals with pivotal moments of history (Cabinet Mission Plan [1946], Mountbatten Plan [1947], and the aborted Congress-League dialogues) and it reviews the involvement of leaders like Jawaharlal Nehru, Mahatma Gandhi, Muhammad Ali Jinnah, and Lord Mountbatten to unearth how political aspirations, errors in judgment, and assorted ideological rigidities made Partition into an almost inevitable occurrence (Jalal, 1985; Chandra, 1989). Second, the study explores some of the communal tensions and failures of governance that accelerated violence before, and during, the transitional period. The hurried or poorly planned British disengagement, the lack of effective law enforcement, and the uncoordinated response to outbreaks of violence in places such as Punjab and Bengal resulted in unprecedented massacre, arson, and rape. This research seeks to explore how both colonial administrators and local leadership failed to protect non-combatants, and, thereby contributed to the human catastrophe (Khan. 2007). Thirdly, the aim of the research is to explore patterns of displacement and trauma as enduring consequences of Partition. The dislocation of about 15 million citizens makes this the largest forced migration in modern history. To emphasize the terrible toll involving vulnerable groups such as women, children, and sectioned off marginalized communities, oral histories and personal narratives – especially those accounted for by Butalia (1998) – inform this part of the project. These shameful accounts and testimonies demonstrated how people lost their homes and families, but also their lifeways, cultural identity, security, emotional judgements, etc. The ramifications of Partition extend well beyond the political division and continues to manifest in residential and refugee colonies today. For example, beneath the hatred amongst communities and border hostilities surface legacies that injure the lives of families - different families that never met nor had anything to do with this historical injustice and yet they all suffer from the traumatic loss of a bygone community. So projecting the demolished dignity and humanity's ability to be so inhuman can be a valuable objective to identify. The overall mix of objectives provide the raw data layer of a nuanced perspective of Partition by juxtaposing the political history against the humanitarian in order to highlight both sides of the same story. The contemplated research will

return to the grand decisions made by incredible leaders to deny large numbers of citizens their most basic humanity but to add voices of the people dislocated and displaced by those efforts and gently provide an empathetic account of arguably the saddest but normal episode to one of the saddest chapters of modern history of the subcontinent.

Methodology

This study uses qualitative-historical research, which is best for studying complex historical phenomena like the Partition of India. Qualitative research allows researchers to focus on political developments, communal discomforts, and humanitarian effects of the Partition using analytical and interpretative lenses rather than numerical lenses. The historical method is always powerful for reconstructing events, understanding the reasoning of political actors, and understanding how individuals experience events.

1. Research Design- I base the eventual design of this study on three primary axes: political bargaining and political strategies leading to the Partition, the initiation of communal violence, and the long-standing history of displacement and trauma. I refer to a period of chronology to show the pathways of events flowing from the late colonial period to the ancillary violence and aftermath of Partition. I use a chronology also as a way of situating the big picture landscape of developments and mistaken policies and administration that led to the humanitarian crisis.

2. Data Sources- The study uses secondary material, including books, archives, correspondence, articles, public documents, and other journals. Key texts used include:

- **Bipan Chandra's** *India's Struggle for Independence* (1989), which offers insight into colonial policies and nationalist movements;

- **Yasmin Khan's** *The Great Partition* (2007), which provides an analysis of the administrative collapse and ensuing chaos;

- **Ayesha Jalal's** *The Sole Spokesman* (1985), which critically examines the political negotiations between the Congress, the Muslim League, and the British;

- **Urvashi Butalia's** *The Other Side of Silence* (1998), which documents oral histories and the psychological scars of Partition, especially among women.

- These texts are the starting points for examining the relationship between political maneuvering and humanitarian suffering. Archival materials will also contribute to the historicizing and evidentiary aspects of this project, both from the records of the British colonial administration,

Cabinet Mission documents, communications from Mountbatten, and refugee cases from both Indian and Pakistani government sources.

3. Oral Histories & Refugee Testimonies- To create the humanitarian aspect of Partition, this study draws on oral histories and refugee narratives that tell lived experiences about trauma, displacement, and survival. Most of this raw data has been compiled already by others, namely Butalia (1998), Ritu Menon and Kamla Bhasin (Borders & Boundaries, 1998), and the 1947 Partition Archive project. The narratives provide context and, more importantly, in humanizing the numbers reflect the silences surrounding the experiences of everyday people, particularly women and other marginalized communities. Wherever possible, interviews and memoirs are subjected to narrative analysis, as they bring richness to the study of how memory, identity, and trauma are expressed through their stories. This analysis tends to identify forms of suffering evidenced in the intertwined experiences of people that are not commonly reflected in official histories, namely psychological violence, loss of honour, and transgenerational trauma..

4. Data Analysis and Ethical Issues - Analysis is underpinned by thematic content analysis looking for recurring themes such as political miscalculation, communal hatred, trauma of refugees, and policy failure. The researcher adopts a critical lens to dissect preconceived perceptions and biases within the sources while respecting the authenticity of individual narratives. This study is concerned with a sensitive undertaking around historical trauma, so I identify ethical issues to consider. Even though the research is not reliant on in-person interviews, I approach survivor testimonies and oral histories with respect and empathy while ensuring survivors' experiences of Partition remain dignified.

5. Limitations - While the methodology on its own is an innovative way of looking at lived experiences, the limitations should be noted. For instance, by relying on secondary sources I may miss the opportunity to acquire censored or less documented voices. While oral histories can be rich, they also are susceptible to memory distorting over time. Nonetheless, these limitations will be acknowledged and addressed through triangulation and critical analysis.

Discussion and Analysis

A. The inordinate causes for the Partition - The Partition of India in 1947 was not an incident, it was an outcome of ingrained political, religious, and colonial factors. The British in India had a "divide and rule" policy that allowed it to govern billions of people and with each success the British intensified the divide. The British colonial administration forced communities apart

and furthermore fostered fears that each community had about each other. The British built certain identities and recognized them through debate and law (Chandra, 1989) which constructively organized the rise of religious nationalism as stated by organizations such as the Hindu Mahasabha and the Muslim League who rejected the inclusive national identity of the Indian National Congress. This was exacerbated by the emergence of Jawaharlal Nehru who embraced a centralized secular democracy vs. Muhammad Ali Jinnah seeking a separate Muslim state due to Jinnah's fears of a Hindu India that would suppress Muslim influence (Jalal, 1985). The collapse of the Cabinet Mission Plan which sought to maintain a unitary state by fettering a federal constitution marked the end of the last remaining attempts at unity by the British, Congress and Muslim politicians all of whom had considerable power to prevent partition.

B. Communal Tensions and Violence- The political deadlock soon descended into widespread violence. When the Muslim League called for a Direct Action Day in August 1946, true calamity struck. Horrific riots broke out in Calcutta, resulting in thousands of deaths (Khan, 2007). Religious propaganda spread by local leaders, newspapers and pamphlets developed hatred and fear within communities. These riots laid to communal violence that accelerated in places such as Punjab and Bengal where the administration collapsed and civil violence evolved into pogroms. The timeline for British withdrawal was announced with little preparation with the timeline acknowledged, miscommunication about British authority led to chaos. On the 15 August 1947, the announcement of Independence left little time for peaceful transition of power, government, policing, and resettlement, creating a vacuum that unleashed violence and chaos (Butalia, 1998).

C. Displacement as a Humanitarian Catastrophe- The most devastating facet of Partition was the dislocation (and its consequences on individuals) of roughly 10 to 15 million people who were displaced and made to cross newly drawn borders, along with unfathomable violence. Women were particularly singled out for violence: they were raped, abducted, and killed by their own families - often in the name of 'honour' (Menon & Bhasin, 1998). Refugee camps, unhygienic, overpopulated, and filled with sickness and malnutrition, were places for the displaced. Ultimately, survivors were left with lasting psychological scars resulting from their exposure to the violence, dislocation, and loss. Vignettes like the massacre on Amritsar–Lahore refugee

trains, the Noakhali riots, or the effects of the Bengal famine illustrate the vastness of human suffering (Butalia, 1998).

D. Political strategy or colonial abandonment? The question of whether Partition was part of Britain's political strategy or abdication of responsibility remains open to debate. It is clear, however, that many scholars have argued that Britain was tired at the end of World War II, and they wanted to 'let go' of India as soon as possible. The problem was that the hastily undertaken steps were bound to lead to outcomes that were going to negatively affect millions of people, and so the country should at least have guaranteed safeguards for a responsible process; it is also true that Lord Mountbatten made pretty much every decision in haste. For example, escalating the withdrawal date, and handing off all the demarcation to Cyril Radcliffe, a lawyer who had never visited India in his life. It only took Cyril Radcliffe five weeks to allegedly draw the radial lines which divide the communal boundaries, and through all the haste of the demarcation, whole villages, families, and water systems were cut in half. It was the sheer haste of the process, lack of proper groundwork, and more importantly lack of accountability that caused the outcome of Partition not just a political failure, but truly a disastrous collapse.

E. Legacy and Long-term Influence- the legacy of partition has ongoing effects throughout the subcontinent. The unresolved Kashmir issue, the Kargil War, and the frequent conflicts at the border can largely be traced back to that hasty division. Refugee relocation policies in both India and Pakistan have become a basis for questions of citizenship and belonging today, particularly for many minorities. In literature and heritage, the legacy of partition remains cemented. Autobiographies, novels, and poetry such as "Train to Pakistan" by Khushwant Singh, "Tamas" by Bhisham Sahni, and "Ice-Candy Man" by Bapsi Sidhwa all convey the torment, violence, absurdity, and overall emotional state at the time of partition. In the contemporary political theatre, political parties on both sides of the border continue to narrativize partition to produce or incite nationalist fervour. Unfortunately, the humanitarian catastrophe of partition is eclipsed by political agendas, which highlights the need for more humane and human-centric remembrance of partition's legacy.

Conclusion

The Partition of India in 1947 is one of the most ambiguous and horrifying events of South Asian history. It was not simply a grand line drawn across a map at a particular time in history, it was an injury that changed the lives of millions of people. Throughout this research, we have asked

whether Partition was a high-level attraction of political fruit, or whether the Partition was simply a humanitarian disaster; our finding is that both narratives must converge as to the nature of the Partition as both a political decision and a historically great failure of humanitarianism or a humanitarian disaster. At the most basic level, the Partition was a political wound, connected to political struggle, colonial maladministration, and consciousness of religion (indoctrination). The commonality of differentiating people as a plan to keep rule was consistent throughout British colonial rule; therefore, under the banner of 'divide and rule', overarching distrust of religious communities was created. The ideological fight between Indian National Congress, the Muslim League gained momentum through the late decades of British rule where both parties were unwilling to back down from their position and opinion of how to factor the future of India. While Singh, O'Hanlon, N. Nehru, Jinnah, Gandhi, and other big names of nationalism did stake a position on their own ideas for national identity or independence, they were ultimately all leaders who were unable to politically negotiate a way to accommodate the religious and cultural diversity found in the subcontinent. Given that the Cabinet Mission Plan, which represented a compromise relying on uniting as a benefit of a federal structure, failed to produce any outcomes of significance, the situation moved from bad to worse. Political bargaining had shifted into styles of frenzied escapes. There was little doubt that the British wanted to make a hurried retreat from India after being battered by the experience of the Second World War and having been consumed by frantic anti-colonial responses within the colonies. Lord Mountbatten's decision to pull the date of independence forward into August created an instruction for withdrawing from India with extreme haste, which left no time for planning, negotiation, and peacebuilding. Whether by accident or design, Cyril Radcliffe was handed the task of delineating the physical borders without any gut knowledge of sub-continental geography, culture, or population, and this was done You might imagine, in circumstances of extreme chaos and great panic. The borderline known as the Radcliffe Line was not only arbitrary but was drawn with remarkable disdain. The Redcliffe Line was a line that divided villages, families and communities within the context of a single night. To examine the violence and displacement as only administrative failure however, would be an insufficient read. Moreover, the partition and the decolonization of India unleashed, we can assume the unimaginable in terms of humanitarian catastrophe. Tormenting estimates indicate that an estimated 10 - 15 million displaced persons suffered one of the world's largest mass migrations in recorded history. Communal riots, pogroms and extreme gender-based violence, saw the sub-

continent become scenes of horror, with trainloads of both bounded and unbounded refugees travelling between India and Pakistan often arriving at their destination or midway, filled with mutilated corpses. Women were decoupled from acts of abduction, rape and even murder, at the hands of family members, in some distorted sense of honour. The displaced children and the elderly people who were abandoned on roads to die. The cities of Lahore, Amritsar, and Delhi became the stage of slaughter, confrontation, eulogies, despair, and pity and even rural areas, where there was little communal violence in their existence, were not left untouched by mob violence. In this context, we cannot only view Partition through political negotiations and constitution arrangements. To understand Partition, we must view it from the standpoint of human beings, broken family ties, uprooted homes, trauma without end. The literature around Partition, such as Train to Pakistan, Tamas, and Ice-Candy Man, is evidence of the emotional and psychological damage caused to individuals. The oral histories, memoirs, and refugees accounts indicate the silenced woes of ordinary people who had no agency in making decisions that affected all aspects of their lives. In all of this, Partition has, of course, drawn on modernity and become a resource in political mobilisation. More than seventy years later our narratives around Partition continue to be instrumentalised in electoral politics, peace speeches or community conflicts, to conjure up communal hysterias or to define a national identity in oppositional terms. The Indo-Pak confrontations such as the wars fought around the question of Kashmir, the Kargil conflict, and regular border skirmishes would simply be an extension of unresolved issues from 1947. Refugee resettlement policies, minority rights, and citizenship debates continue to be shaped by the historical legacy of Partition. This study is unable to classify Partition as anything other than a calculated political act and a monumental humanitarian disaster. The actions taken by political actors, both British and Indian, had consequences beyond their imaginations. Whether the Indian and British political decisions-makers could not or would not envision or ameliorate the consequences of their decisions is an open-ended question. What is worryingly glaring is that millions of people became refugees in their own land, and many of the traumas of Partition have been generational; people continue to suffer from the legacy of Partition, and trauma continues to inform policies and practices affecting minorities and refugees. Unfortunately, on par with the political benchmarks of Partition, the human effects of Partition have never attracted as much representation in state narratives and formal historiography. There is an imperative to heal our past. Both India and Pakistan must avoid blaming each other and speak to and about the pain of

Partition. Historical memory can only be addressed in the context of regional cooperation, mutual understanding, and shared empathy to forge a less troubled future that treats history as a pathway to peace rather than political conflict. Educational programs in the two nations must provide objective accounts of the Partition, including not just the political dimensions, but also the stories of suffering and of the human spirit. Memorials, museums, and cultural performances should memorialize the memories of the victims and ensure they are not buried in silence. Ultimately, the Partition of India cannot be reduced to a single moment in history, but is best understood as a kaleidoscope of decisions, accidents, and tragedies that have shaped and etched their way into the history of the subcontinent. Seeing it as both a government strategy and humanitarian crisis gives meaning to its scope. Only by grappling with this painful history with integrity and compassion, can we, as people from India, Pakistan, and the diaspora, have a chance at reconciliation, peace and collective futures.

Archives and Appendices

Appendix A: Map of the Radcliffe Line (1947)
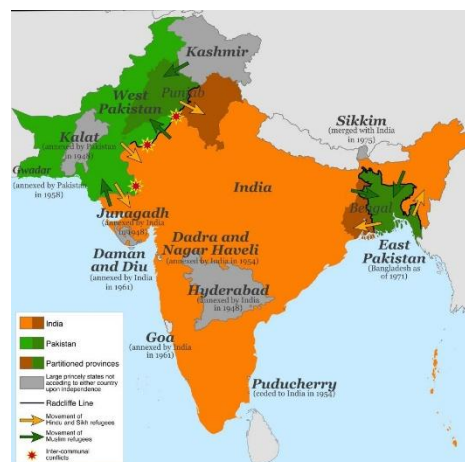
This map shows the **Radcliffe Line**, the hastily drawn border demarcation between India and Pakistan, implemented after Lord Mountbatten's announcement of early British withdrawal. The line divided **Punjab and Bengal**, regions most affected by communal violence and migration.

Key Features:

- Division of **Lahore** and **Amritsar** region
- Eastern Bengal (East Pakistan) and West Bengal (India)
- Areas where boundary decisions were contested or reversed post-announcement

Source: British Library Archives; National Archives of India

Appendix B: Refugee Camp Photographs (1947-1950)

A collection of rare black-and-white photographs from refugee camps in:

- Kurukshetra Camp (Punjab, India)

- Kingsway Camp (Delhi, India)

- Dhaka and Chittagong camps (East Pakistan)

Image Descriptions:

- Mass tents and makeshift hospitals

- Women and children receiving aid

- Trains arriving with refugees—many looted or with casualties

- Volunteers from the Indian National Congress and international aid organizations offering support

    Sources: Nehru Memorial Museum & Library; Photo Division of the Ministry of Information & Broadcasting (GoI)

Appendix C: Table – District-wise Migration Statistics (1947–1948)
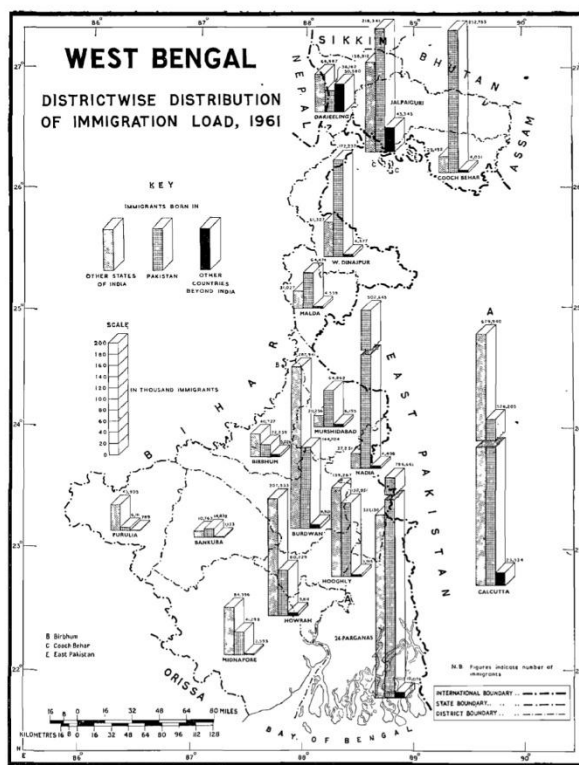
District/Region	Direction of Migration	Estimated Migrants	Primary Cause
Lahore	India → Pakistan	300,000+	Communal Riots & Targeted Killings
Amritsar	Pakistan → India	500,000+	Religious Persecution
Delhi	Pakistan → India	200,000+	Mass Transfer by Trains
East Bengal (Dhaka, etc.)	India → East Pakistan	100,000+	Political Fear
Sindh (Karachi, etc.)	India → Pakistan	150,000+	Urban Exodus of Muslims
Jammu & Kashmir	Bi-directional	250,000+	Armed Conflicts & Riots

Total Displacement: Estimated **10–15 million people** migrated across newly drawn borders.

Source: Ministry of Home Affairs (1948), Talbot & Singh (2009), 1947 Partition Archive.

Appendix D: Oral Testimonies Extracts (1947 Partition Archive)

https://www.1947partitionarchive.org/collections/

Below are excerpts from verified oral accounts recorded by the **1947 Partition Archive**:

"We hid under a bridge while trains full of bloodied corpses passed by… I was 12 then."

— *Rajinder Kaur, Punjab Survivor*

"My mother never spoke of what happened. We only knew she lost her sister on the train to Lahore."

— *Shaista Ahmed, Refugee from Amritsar*

"I was born in the camp. My first photo is with the Red Cross volunteers who saved us."

— *Jameela Bano, Delhi Camp Resident*

References

1947 Partition Archive. (n.d.). Oral Histories of Partition Survivors.

Bhalla, A. (Ed.). (1994). Stories of Partition. HarperCollins India.

Bharucha, R. (2003). Riot: Performances, Politics and Partition. Seagull Books.

Brass, P. R. (2003). The Production of Hindu-Muslim Violence in Contemporary India. University of Washington Press.

Butalia, U. (1998). The Other Side of Silence: Voices from the Partition of India. Penguin Books.

Chakravarty, U. (2005). Trauma and Memory: The Partition in South Asian Fiction. South Asian Review, 26(1), 21–30.

Chandra, B. (1989). India's Struggle for Independence. Penguin Books.

Gilmartin, D. (1998). Partition, Pakistan, and South Asian History: In Search of a Narrative. The Journal of Asian Studies, 57(4), 1068–1095.

Government of India. (1947–1950). Constituent Assembly Debates. National Archives of India.

Guha, R. (2007). India After Gandhi: The History of the World's Largest Democracy. HarperCollins.

Hasan, M. (1997). Legacy of a Divided Nation: India's Muslims since Independence. Oxford University Press.

Jalal, A. (1985). The Sole Spokesman: Jinnah, the Muslim League and the Demand for Pakistan. Cambridge University Press.

Khan, Y. (2007). The Great Partition: The Making of India and Pakistan. Yale University Press.

Menon, R., & Bhasin, K. (1998). Borders & Boundaries: Women in India's Partition. Kali for Women.

Noakhali Relief Committee Reports. (1946). National Archives of India.

Pandey, G. (2001). Remembering Partition: Violence, Nationalism and History in India. Cambridge University Press.

Radcliffe, C. (1947). Boundary Commission Reports: Punjab and Bengal. British Library

Sherman, T. C. (2011). From "Grow More Food" to "Miss a Meal": Hunger, Development and the Limits of Post-Colonial Nationalism in India. South Asia: Journal of South Asian Studies, 34(3), 350–368.

Talbot, I., & Singh, G. (2009). The Partition of India. Cambridge University Press.

Zemindari, V. F. Y. (2007). The Long Partition and the Making of Modern South Asia: Refugees, Boundaries, Histories. Columbia University Press.

उच्च शिक्षा स्तर पर कार्यरत अध्यापकों की प्रभावशीलता के आंकलन पर छात्रों की प्रतिक्रिया का अध्ययन करना

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सारांश

शिक्षा के गुणवत्ता और राष्ट्रीय विकास में अध्यापक निःसन्देह सर्वाधिक महत्वपूर्ण.है। शिक्षक प्रभावशीलता के आंकलन में छात्र मूल्यांकन एक महत्वपूर्ण माध्यम है। जिसको देखते हुये प्रस्तुत प्रपत्र में शिक्षकों की दखता की आंकलन के लिए छात्रों की प्रतिक्रिया प्रयोग किया गया है। जिसके लिए न्यादर्श के रूप में इलाहाबाद विश्वविद्यालय तथा इसके संघटक महाविद्यालयों में पढ़ने वाले छात्र व छात्राओं का चयन उद्देश्यपूर्ण न्यादर्श विधि के द्वारा किया गया है। अध्ययन के उद्देश्य की अभिपूर्ति हेतु स्वनिर्मित उपकरण शिक्षक मूल्यांकन मापनी का प्रयोग किया गया है। आंकणों के विश्लेषण के लिए तथा सार्थकता स्तर ज्ञात करने के लिए काई वर्ग का प्रयोग किया गया है तथा इसके अतिरिक्त प्रतिशत विश्लेषण का भी प्रयोग किया गया है। विश्लेषण के उपरांत परिणाम से स्पष्ट है कि विश्वविद्यालय के छात्रों की अपेक्षा महाविद्यालय में पढने वाले छात्रों द्वारा अपने अध्यापकों को शिक्षक दक्षता क्षेत्र जैसे- अध्यापक की वैयक्तिक दक्षता तथा अध्यापक छात्र अन्तःक्रिया से संबंधित दक्षता क्षेत्र में विश्वविद्यालय के छात्रों के अपेक्षा अधिक प्रभावी माना गया है।

बीज शब्द: उच्च शिक्षा स्तर, अध्यापकों की प्रभावशीलता, छात्रों की प्रतिक्रिया।

प्रस्तावना

शिक्षा के गुणवत्ता और राष्ट्रीय विकास में अध्यापक निःसन्देह सर्वाधिक महत्वपूर्ण.है। उसके वैक्तिक गुणों शैक्षिक योग्यताओं एंव व्यावसायिक अहर्ताओं पर शिक्षा संबंधी सभी प्रयत्नों की सफलता निर्भर है। शिक्षण प्रभावशीलता को स्पष्ट करते हुए कहा जा सकता है कि विभिन्न लक्ष्यों की प्राप्ति के लिए अध्यापक द्वारा अपने ज्ञान, कौशल अभिवृत्तियों का जो प्रर्दशन किया जाता है वह शिक्षण प्रभावशीलता है। शिक्षण प्रभावशीलता का आकलन शिक्षक द्वारा कक्षा शिक्षण में प्रयुक्त विभिन्न कौशलों के उपयुक्त प्रदर्शन से लगाया जाता है।

शिक्षण प्रभावशीलता और शिक्षक प्रभावशीलता दोनों अलग-अलग पद हैं। किंतु दोनों एक ही उद्देश्य की पूर्ति करते हैं। शिक्षण प्रभावशीलता एक पाठ में उद्देश्यों को प्राप्त करने के लिए शिक्षण में शामिल शैक्षणिक तत्वों को संदर्भित करती है। जबकि शिक्षक प्रभावशीलता विषय वस्तु में प्रभुत्व प्राप्त योग्यता में शिक्षक की तत्परता/ तैयारी के स्तर को संदर्भित करती है। जिसमें उपर्युक्त उद्देश्यों को प्राप्त करने के लिए व्याख्यान वितरण और कक्षा में नियंत्रण शामिल है।

शिक्षक के लिए यह आवश्यक है कि वह अपने छात्रों को अध्ययन के प्रति जागरूक बनाये और उनमें ऐसी भावनाएं विकसित करे कि वे हर समय सीखने की जिज्ञासा रखें । प्रभावात्मक रूप से विषय वस्तु का प्रस्तुतिकरण अर्थात् पूर्व निर्धारित उद्देश्यों तथा वांछित व्यवहारगत परिवर्तनों की सरल सुगम तथा वस्तुनिष्ठ रूप से ऐसा शिक्षण जो रोचक हो, आकर्षक हो तथा विद्यार्थियों का पुर्नवलन प्रदान करता हो प्रभावी समझा जाता है।

शिक्षक की प्रभावशीलता में उसकी शिक्षा तथा सामान्य व तत्कालीन कक्षा कक्ष प्रबंध की योग्यता समाज व विद्यालय के अन्य सदस्यों के प्रति मेल मिलाप छात्रों को प्रेरित करने की योग्यता शिक्षण कौशल व्यवसाय से संबंधित ज्ञान निर्देशन की योग्यता नैतिक रूप से कुशल तथा प्रभावशाली व्यक्तित्व को समाहित किया जाता है।

वास्तव में योग्य कुशल एवं प्रभावपूर्ण शिक्षक ही वह धुरी है जिसके चारों ओर सम्पूर्ण शिक्षण प्रक्रिया घूमती है। शिक्षक के सामान्य और कक्षागत क्रियाकलाप शिक्षक व्यवहार की ओर संकेत करते हैं। और इन क्रियाकलापों पर शिक्षक की प्रभावशीलता आधारित होती है।

विभिन्न अध्ययन यह स्पष्ट करते हैं कि अध्यापक दक्षता का मूल्यांकन करने में छात्र पूर्ण रुप से समर्थ नहीं होते हैं। जिन्होने हम विभिन्य अध्ययनों द्वारा स्पष्ट कर सकते हैं। ऐल्डन (1993), वेटन एवं रोसेक (2009) ने अपने अध्ययन में पाया कि छात्र अपने सीमित अनुभव तथा पृष्ठ भूमि के कारण शिक्षक मूल्यांकन में समर्थ नहीं होते हैं। वेस्टली (2007) में अपने अध्ययन से स्पष्ट किया कि छात्रों द्वारा अध्यापकों के मूल्यांकन का सीमित उपयोग किया जाना चाहिए। इन अध्ययनों में पाया गया कि छात्र अध्यापकों का मूल्यांकन अच्छी तरह नहीं कर सकते क्योकि वो बौद्धिक रुप से इतने परिपक्व नहीं होते कि वो अपने अध्यापकों का मूल्यांकन कर सकें।

किन्तु इसके विपरीत विभिन्न अध्ययन जो यह स्पष्ट करतें है कि छात्र वास्तव में शिक्षकों का मूल्यांकन कर सकतें है क्योंकि छात्र ही अध्यापकों की शिक्षण दक्षता से सबसे अधिक प्रभावित होता है। जिसमें से कुछ का वर्णन निम्नवत है। केम्पवे (2005) ने छात्र मूल्यांकन तथा शिक्षक निदेशक सुधार में छात्रों की प्रतिक्रिया पर अध्ययन किया और मूल्यांकन को महत्वपूर्ण माना। सिंह और साहू (2009) ने अपने अध्ययन में शिक्षक प्रभावशीलता के मूल्यांकन करने में छात्रो को समर्थ पाया। सिनीज, सूडिय, कसांगिता 2008 छात्रों द्वारा मूल्यांकन करवाने पर विभिन्न शिक्षकों की प्रतिक्रिया में पाया कि छात्र शिक्षकों का मूल्यांकन कर सकते हैं। इसके अतिरिक्त मूरे (1997) मकीची (1997) पालमर (1998) वेनेट (2008) ने शिक्षक प्रभावशीलता के आंकलन में छात्रों के मूल्यांकन को महत्वपूर्ण मानते हैं।

उपर्युक्त अध्ययनों से प्राप्त निष्कर्ष के अवलोकन से स्पष्ट है कि शिक्षक प्रभावशीलता के आंकलन में छात्र मूल्यांकन एक महत्वपूर्ण माध्यम है जिसको देखते हुए प्रस्तुत प्रपत्र में शिक्षकों की दक्षता के आंकलन के लिए छात्र मूल्यांकन का प्रयोग किया गया है।

उद्देश्य

उपर्युक्त अध्ययन को करने के लिए निम्न उद्देश्यों का निर्माण किया गया है-

1. अधिगम के लिए तैयार करना शिक्षक दक्षता के लिए अध्यापकों का मूल्यांकन विश्वविद्यालय तथा महाविद्यालयों के छात्रों द्वारा करना।

2. शिक्षण अधिगम सामग्री के प्रयोग के सम्बंधी शिक्षण दक्षता के लिए अध्यापकों का मूल्यांकन विश्वविद्यालय तथा महाविद्यालयों के छात्रों द्वारा करना।

3. कक्षा शिक्षण दक्षता के सम्बन्ध में अध्यापको का मूल्यांकन विश्वविद्यालय यथा महाविद्यालय के छात्रों द्वारा करना।

4. शिक्षक की वैयक्तिक दक्षता के सम्बन्ध में अध्यापकों का मूल्यांकन विश्वविद्यालय तथा महाविद्यालयों के छात्रों द्वारा करना।

5. शिक्षक छात्र अन्तः क्रिया से सम्बन्धित दक्षता के लिये अध्यापकों का मूल्यांकन विश्वविद्यालय तथा महाविद्यालय के छात्र द्वारा करना।

6. मूल्यांकन सम्बन्धित दक्षता के लिए अध्यापकों का मूल्यांकन विश्वविद्यालय तथा विश्वविद्यालय के छात्रों द्वारा करना।

परिकल्पना

1. अधिगम के लिए तैयार करना शिक्षण दक्षता के लिए अध्यापक मूल्यांकन में विश्वविद्यालय तथा महाविद्यालय के छात्रों की प्रतिक्रिया में कोई सार्थक अन्तर नहीं है।

2. शिक्षण अधिगम सामग्री के प्रयोग सम्बंधी दक्षता के लिए अध्यापक मूल्यांकन में विश्वविद्यालय तथा महाविद्यालय के छात्रों की प्रतिक्रिया में कोई सार्थक अन्तर नहीं है।

3. कक्षा शिक्षण दक्षता मूल्यांकन के लिए विश्वविद्यालय तथा महाविद्यालय छात्रों की प्रतिक्रिया में कोई सार्थक अन्तर नहीं है।

4. शिक्षक की वैयक्तिक दक्षता के सम्बन्ध में मूल्यांकन के लिए विश्वविद्यालय तथा महाविद्यालय के छात्रा की प्रतिक्रिया में कोई सार्थक अन्तर नहीं है।

5. शिक्षक छात्र अन्तः क्रिया से सम्बन्धित दक्षता के सम्बन्ध में विश्वविद्यालय तथा महाविद्यालय के छात्रा की प्रतिक्रिया में कोई सार्थक अन्तर नहीं है।

6. मूल्यांकन सम्बंधी दक्षता के सम्बंध में अध्यापकों के मूल्यांकन में विश्वविद्यालय तथा महाविद्यालय के छात्रों की प्रतिक्रिया में कोई सार्थक अन्तर नहीं है।

जनसंख्या तथा न्यादर्श

इलाहाबाद विश्वविघालय तथा इसके संघटक महाविघालयों में पढ़ने वाले कला वर्ग के समस्त छात्र व छात्राएं इस अध्ययन की जनसंख्या है।

न्यादर्श के लिए स्नातक स्तर पर पढ़ने वाले कला वर्ग के 100 छात्रों को लिया गया है जिसमें 50 छात्र विश्व विद्यालय के तथा 50 छात्र महाविद्यालय के हैं। इनका चयन उद्देश्यपूर्ण न्यादर्श विधि से किया गया है।

उपकरण-

अध्ययन के उदेश्य की अभिपूर्ति हेतु स्वनिर्मित उपकरण "शिक्षक मूल्यांकन मापनी" का प्रयोग किया गया है। जिसमें कुल 150 प्रश्न हैं तथा चार बिंदु रेटिंग स्केल का प्रयोग किया गया है। सम्पूर्ण प्रश्नावली को छः शिक्षण दक्षता भागों में बांटा गया है। जैसे-अधिगम के लिए तैयार करनाए शिक्षण अधिगम सामग्री का प्रयोग करनाए कक्षा शिक्षण दक्षता, शिक्षक की वैयक्तिक दक्षताए शिक्षक- छात्र अन्तः क्रिया सम्बंधी दक्षता तथा मूल्यांकन सम्बन्धी दक्षता।

आंकड़ों का विश्लेषण - सांख्यिकी आंकड़ो के संग्रहण के लिए शिक्षण मूल्यांकन मापनी को 100 छात्रों पर प्रशासित किया गया तत्पश्चात उनका आंकलन करने के पश्चात आंकड़ो के विश्लेषण के लिए तथा सार्थकता स्तर ज्ञात करने के लिए काई (x^2) का प्रयोग किया गया है इसके अतिरिक्त प्रतिशत विश्लेषण का भी प्रयोग किया गया है।

विश्लेषण एवं व्याख्या

तालिका 1

संस्था भेद के आधार पर छात्रों को अधिगम के लिए तैयार करना दक्षता के सम्बन्ध में छात्रों द्वारा अध्यापक मूल्यांकन x^2 परीक्षण

	ब्र0अ0प्र0	अ0प्र0	प्र0	क्र0 प्र0	व0क्र0प्र0	योग	काई वर्ग
वि0वि0 के छात्र	21	14	9	4	2	50	4.85
	42	27.33	17.00	7	4.67		
महा0 वि0 के छात्र	25	11	5	5	4	50	
	50.33	23.00	10.00	8.33	8.33		

ब्र0अ0प्र0-बहुत अधिक प्रभावी, अ0प्र0-अधिक प्रभावी, प्र0-प्रभावी, क0प्र-कम प्रभावी, ब0क0प्र0-बहुत कम प्रभावी,

संस्था भेद के आधार पर शिक्षकों की वर्तमान शिक्षण प्रभावशीलता पर प्राप्त आंकड़ों का विश्लेषण एवं व्याख्या x^2 परीक्षण के आधार पर किया गया है जिसका विवरण तालिका 1 में वर्णित है

तालिका 1 के अवलोकन से स्पष्ट है कि छात्रों को अधिगम के लिए तैयार करना दक्षता के लिए परिगणित x^2 का मान 4.85 है जो कि मुक्तांश (df)=2 पर 0.05 सार्थकता स्तर के सारणिक मान से कम है। अत: उपर्युक्त दक्षता 0.05 स्तर पर सार्थक नहीं है। असार्थक काई वर्ग के आधार पर शून्य परिकल्पना को स्वीकार करते हुए कहा जा सकता है कि विश्वविद्यालय तथा महाविद्यालय में अध्यनरत सामाजिक विज्ञान के छात्रों द्वारा अध्यापकों की मूल्यांकन पर की प्रतिक्रिया में कोई सार्थक अन्तर नहीं है।

दूसरे शब्दों में कह सकते हैं कि विश्वविद्यालय तथा महाविद्यालय के छात्र अधिगम के लिए छात्रों को तैयार करना दक्षता क्षेत्र के लिए अपने अध्यापकों का समान रुप से प्रभावी मानते हैं।

तालिका 2

शिक्षण अधिगम सामग्री के प्रयोग के सम्बंध में विश्वविद्यालय तथा महाविद्यालय के छात्रों द्वारा अध्यापक दक्षता आंकलन के हेतु x^2 परीक्षण

	ब0अ0प्र0	अ0प्र0	प्रभावी	अ0प्र0	ब0अ0प्र0	योग	काई वर्ग
वि0वि0 के छात्र	20 39.67	12 24.33	9 17.00	6 12	3 6.67	50	1.84
महा0 वि0 के छात्र	22 44.67	11 22.67	7 13.67	5 9.67	5 9.33	50	

तालिका-2 के अवलोकन से स्पष्ट है कि शिक्षण अधिगम सामग्री के प्रयोग से सम्बन्धित अध्यापक दक्षता के लिए परिगणित x^2 का मान 1.84 है कि मुक्तांश (df) -2 पर .05 सार्थकता स्तर के सारणिक मान से कम है। अत: उपयुक्त दक्षता क्षेत्र 0.05 स्तर पर सार्थक नहीं है। असार्थक कई वर्ग के आधार पर शून्य परिकल्पना को स्वीकार किया जाता है।

स्वतंत्र वितरण की परिकल्पना को स्वीकार करते हुए कहा जा सकता है कि विश्वविद्यालय तथा महाविद्यालय में अध्ययनरत छात्रों द्वारा अध्यापकों का मूल्यांकन उनके संस्था भेद से स्वतंत्र है।दूसरे शब्दों में कहा जा सकता है कि विश्वविद्यालय तथा महाविद्यालय के छात्रों द्वारा समान रुप से माना गया कि शिक्षण अधिगम सामग्री के प्रयोग सम्बधी दक्षता में उनके अध्यापक समान रुप से प्रभावी है।

तालिका 3

कक्षा शिक्षण दक्षता के सम्बंध में विश्वविघालय तथा महाविघालय के छात्रों द्वारा अध्यापक की दक्षता के आकलन हेतु x^2 मूल्य का परीक्षण

	ब0अ0प्र0	अ0प्र0	प्रभावी	क0प्र0	ब0क0प्र0	योग	काई वर्ग
विश्व विघालय के छात्र	22 44.33	9 19.00	9 18.33	6 11.67	4 6.67	50	10.27
महा विघालय के छात्र	24 45.67	15 29.67	5 11.00	3 7.67	3 6.00	50	

तालिका 3 के अवलोकन से स्पष्ट है कि कि अध्यापक की कक्षा शिक्षण दक्षता के सम्बध में परिगणित x^2 का मान 10.27 पाया गया जो कि मुक्तांश (df) -2पर 0.05 सार्थकता स्तर पर सारणिक मान से अधिक है। अत: उपयुक्त दक्षता क्षेत्र 0.5 सार्थकता स्तर पर सार्थक है।सार्थक काई वर्ग के आधार पर शून्य परिकल्पना को अस्वीकार किया जाता है। तथा कहा जा सकता है कि विश्वविद्यालय तथा महाविद्यालय मे अध्यनरत सामाजिक विषय के छात्रों द्वारा अध्यापकों का मूल्यांकन कक्षा शिक्षण दक्षता के लिए समान नहीं है। अर्थात विश्वविद्यालय तथा महाविद्यालय के छात्रों द्वारा समान रुप से नहीं माना गया कि उपयुक्त दक्षता क्षेत्र में उनके अध्यापकों की दक्षता एक जैसी है।

तालिका से स्पष्ट है कि 29.67 % महाविद्यालयी छात्रों द्वारा तो वही मात्र 19% विश्वविद्यालय के छात्रों द्वारा माना गया कि उनके अध्यापक कक्षा शिक्षण दक्षता में प्रभावी हैं। इस प्रकार स्पष्ट है कि कक्षा शिक्षण दक्षता के लिए महाविद्यालय के छात्रों द्वारा विश्वविद्यालय के छात्रों की अपेक्षा अपने अध्यापकों को अधिक प्रभावी माना गया है।

तालिका 4

शिक्षक की वैयक्तिक दक्षता जानने के संम्बध में वि0वि0 तथा महा वि0 के छात्रो द्वारा अध्यापको के मूल्यांकन का x^2 परीक्षण

	क0अ0प्र0	अ0 प्र0	प्र0	क0 प्र0	व0अ0प्र0	योग	काई वर्ग
वि0वि0 के छात्र	22	10	9	5	4	50	6.70
	44.33	19.00	18.33	11.67	6.67		
वि0वि0 के छात्र	24	15	5	3	3	50	
	45.67	29.67	11.00	7.67	6.00		

तालिका-4 के अवलोकन से स्पष्ट है कि शिक्षक की वैयक्तिक दक्षता के सम्बंध में परिगणित x^2 का मान 6.70 है जो कि मुक्ताश (df) -4 के 0.05 सार्थकता स्तर के सारणिक मान से कम है।

अत; उपयुक्त दक्षता क्षेत्र .05 सार्थकता स्तर पर सार्थक नहीं है। असार्थक कई वर्ग के आधार पर शून्य परिकल्पना को स्वीकार करते हुए शिक्षक की वैयक्तिक दक्षता के लिए स्वतंत्र वितरण की परिकल्पना को अस्वीकार किया जाता है।

स्वतंत्र वितरण की परिकल्पना को स्वीकार करते हुए कहा जा सकता है कि विश्वविद्यालय तथा महाविद्यालय में अध्यापनरत अध्यापकों के मूल्यांकन के लिए छात्रों के संस्था भेद का कोई प्रभाव नही है। दूसरे शब्दों में कहा जा सकता है कि विश्वविद्यालय तथा महाविद्यालय के छात्रों द्वारा उपयुक्त दक्षता क्षेत्र में अपने अध्यापकों को समान रुप से प्रभावी माना गया।

तालिका से स्पष्ट है कि 44 प्रतिशत विश्वविद्यालय के छात्रों द्वारा वहीं 46 प्रतिशत महाविद्यालय के छात्रों द्वारा भी माना गया कि उनके अध्यापक समान रुप से वैयक्तिक दक्षता में प्रभावी पाये गये हैं।

तालिका 5
संस्था भेद के आधार पर छात्रों द्वारा शिक्षक- छात्र अतः क्रिया से सम्बन्धित दक्षता के लिए अध्यापकों की मुल्यांकन का x^2 परिक्षण

	ब0अ0प्र0	अ0प्र0	प्रभावी	अ0 प्र0	ब0क0प्र0	योग	काई वर्ग
वि0वि0 के छात्र	17 35.33	14 28.33	8 15.33	6 12.00	5 10.00	50	9.83
महा वि0 के छात्र	22 40.67	17 30	6 13.67	3 7.67	2 5.00	50	

तालिका 5 के अवलोकन से स्पष्ट है कि शिक्षक छात्र अन्तः क्रिया से सम्बन्धित दक्षता के लिए परिगणित मूल्यांकन का मान 9.83 है जो कि मुप्तांश (df)-2पर .05 स्तर के सारणिक मान से अधिक है। अत: उपयुक्त दक्षता .05 स्तर पर सार्थक है। सार्थक कई वर्ग के आधार पर शून्य परिकल्पना को अस्वीकार करते हुए स्वत्रंत वितरण की परिकल्पना को स्वीकार किया जाता है।

अत; कहा जा सकता है कि विश्वविद्यालय तथा महाविद्यालय में अध्यनरत छात्रों द्वारा अध्यापकों का मूल्यांकन दक्षता क्षेत्र शिक्षक छात्र अन्तःक्रिया के लिए समान नहीं है। अत: विश्वविद्यालय तथा महाविद्यालय के छात्रों के छात्रों द्वारा समान रुप से अध्यापकों को प्रभावी नहीं माना गया।

तालिका अवलोकन से स्पष्ट है कि 40% महाविद्यालय में अध्ययनरत छात्रों द्वारा जबकि 35 प्रतिशत विश्वविद्यालयी छात्रों द्वारा अपने अध्यापकों को शिक्षक छात्र अन्त:क्रिया से सम्बन्धित दक्षता के लिए प्रभावी माना गया है। इस प्रकार स्पष्ट है कि

महाविद्यालय में अध्यनरत सामाजिक विषय के छात्रों द्वारा विश्वविद्यालय के छात्रों की तुलना में अपने अध्यापकों को अधिक प्रभावी माना गया है।

तालिका-6

संस्था भेद के आधार पर मूल्यांकन सम्बंधी दक्षता के सम्बन्ध में छात्रो द्वारा अध्यापकों के मूल्यांकन का x^2 परीक्षण

	ब0अ0प्र0	अ0प्र0	प्र0	ब0प्र0	ब0अ0प्र0	योग	काई वर्ग
वि0वि0 के छात्र	17	12	11	5	5	50	1.34
	34.33	24.67	20.67	10.33	10.00		
महा वि0 के छात्र	17	13	9	7	4	50	
	34.33	26.00	18.33	12	9.33		

तालिका 6 के अवलोकन से स्पष्ट है कि अध्यापक के मूल्यांकन सम्बन्धी दक्षता के सम्बंध में परिगणित x^2 का मान 1.34 है जो कि मुक्तांश (df) -2 के 0.05 सार्थकता स्तर के सारणिक मान से कम है।

अतः उपयुक्त दक्षता क्षेत्र .05 स्तर पर सार्थक नहीं है। असार्थक काई वर्ग के आधार पर शून्य परिकल्पना को स्वीकार करते हुए उपयुक्त दक्षता क्षेत्र के लिए स्वतंत्र वितरण परिकल्पना को अस्वीकार किया जाता है।

स्वतंत्र वितरण की परिकल्पना को अस्वीकार करते हुए कहा जा सकता है कि विश्वविद्यालय तथा महाविद्यालय में छात्रों द्वारा अध्यापकों का मूल्यांकन छात्रों के संस्था भेद के प्रभाव से स्वतंत्र है। अर्थात मूल्यांकन सम्बन्धी दक्षता के सम्बन्ध में विश्वविद्यालय तथा महाविद्यालय के छात्रों की प्रतिक्रिया में कोई सार्थक अन्तर नहीं है।

दूसरे शब्दों में कहा जा सकता है कि विश्वविद्यालय तथा महाविद्यालय के छात्रों द्वारा अपने अध्यापकों को उपयुक्त दक्षता के लिए समान रुप से प्रभावी माना गया है।

परिणाम एवं विवेचना

परिणाम से स्पष्ट है कि छात्रों को अधिगम के लिए तैयार करना शिक्षण दक्षता के लिए विश्वविद्यालय तथा महाविद्यालय के छात्रों द्वारा अपने अध्यापकों को समान रुप से प्रभावी माना गया। इसी प्रकार अन्य दक्षता क्षेत्र जैसे शिक्षण अधिगम सामग्री का प्रयोग करना शिक्षक की वैयक्ति दक्षता तथा मूल्यांकन सम्बंधी दक्षता के सम्बंध में तालिका परिमाण से स्पष्ट है कि इन दक्षता के दक्षता क्षेत्रों में विश्वविद्यालय तथा महाविद्यालय के छात्रों द्वारा समान रुप से अपने अध्यापकों को प्रभावी माना गया।

कक्षा शिक्षण दक्षता के सम्बंध में तालिका विश्लेषण के बाद निष्कर्ष से स्पष्ट है कि विश्वविद्यालय के छात्रों की तुलना में महाविद्यालय के छात्रों द्वारा अपने अध्यापकों को अधिक प्रभावी माना गया है। ठीक इसी प्रकार का परिणाम शिक्षक छात्र अन्तः क्रिया से सम्बधित दक्षता के क्षेत्र में भी दिखई देता है इस दक्षता क्षेत्र में भी महाविद्यालय के छात्रो द्वारा विश्वविद्यालय के छात्रों की अपेक्षा अपने अध्यापकों को अधिक प्रभावी माना गया।

अध्ययन का मुख्य निष्कर्ष यह है कि विश्वविद्यालय तथा महाविद्यालय के छात्रों द्वारा विभिन्न दक्षता क्षेत्र जैसे छात्रों को अधिगम हेतु तैयार करनाए शिक्षक अधिगम सामग्री का प्रयोग करनाए शिक्षक की वैयक्तिक दक्षता तथा मूल्यांकन सम्बन्धी दक्षता में समान रुप से अपने अध्यापकों को प्रभावी माना गया है अर्थात् विश्वविद्यालय तथा महाविद्यालय के अध्यापकों के मध्य कोई अन्तर नहीं पाया गया। इसका अर्थ यह है कि अध्यापकों की शिक्षण दक्षता को संस्था तथा स्तर (स्नातक या स्नात्कोत्तर) प्रभावित नहीं करता बल्कि स्वयं की शिक्षण गुणवत्ताए उत्तरदायित्व वहन तथा कार्य के प्रति समर्पण भावना पर निर्भर करता है।

किंतु इसके विपरीत सोमपाल वी एम मोराद एफ0 आर0 (2018) ने अध्ययन में पाया कि विश्व विद्यालय जैसे संस्थानों में पढ़ने वाले छात्रों ने महाविद्यालय में पढ़ने वाले छात्रों की तुलना में अपने अध्यापकों को अधिक शिक्षक प्रभावशील माना है।

एक या दो अध्ययनों के आधार पर हम विश्वविद्यालयों या महाविद्यालयों के अध्यापकों को प्रभावी या अप्रभावी सिद्ध नहीं कर सकते क्योंकि रिचर्डसन (2005 ने स्पष्ट किया कि एक शिक्षक का शिक्षण के लिए दृष्टिकोण विचार शिक्षण वातावरण के लिए संवेदनशीलता विभिन्न शिक्षण संख्याओ में एक दूसरे से भिन्न होता है। जिसके कारण उसकी शिक्षक दक्षता प्रभावित होती है। शुक्ला, आई (2008) निष्कर्ष निकाला कि शिक्षण प्रभावशीला व्यक्तिगत सम्बंधो को प्रभावित करता है। अध्यापकों की शिक्षण प्रभावशीलता पर योग्यता,अनुभव विषय जिसे पढ़ाते हैं स्कूल के प्रकार,शिक्षक की आयु व प्रशिक्षण इत्यादि का प्रभाव पड़ता है। रेल्ली (2016) के अध्ययन में शिक्षण की प्रभावशीलता को कई दिशाओं में देखा गया तथा उनका अध्ययन मे छात्रों की शैक्षिक उपलब्धि ,कक्षागत अनुशासन तथा छात्रों के निष्पत्ति प्राप्तांक में धनात्मक सहसम्बंध पाया गया।

ठीक उसी प्रकार का परिणाम बेंडर माचर एंव अन्य (2017) में पाया शिक्षक और शिक्षक की कार्य संस्कृति में अन्तर होता है जो उनके संसाधन विनियोजन भूमिका और उत्तरदायित्व को स्पष्ट करता है यही कारण उसकी शिक्षण अधिगम प्रकिया को प्रभावित करता है।

अन्त में हम कह सकते हैं कि विश्वविद्यालय तथा महाविद्यालय के अध्यापकों की शिक्षण दक्षता मे अन्तर पाया गया है। वह शिक्षक की प्रेरणा स्तर कार्य संस्कृति संस्था विशेष का वातावरण या अन्य किसी कारण से भी हो सकता है। जिसको सभी विश्वविद्यालय तथा महाविद्यालय के अध्यापकों पर लागू नहीं किया जा सकता । इस पर एक विस्तृत अध्ययन की आवश्यकता है।

सुझाव

- जब तक शिक्षक प्रभावशाली नहीं होगा, छात्रों का सर्वांगीण विकास संभव नहीं है। अतः शिक्षक प्रभावशीलता बढाने के लिए शिक्षकों को निरन्तर प्रशिक्षण कार्यक्रम में प्रतिभाग करना चाहिए।

- विश्वविद्यालय तथा महाविद्यालय के शिक्षकों की शिक्षण प्रभावशीलता पर एक तुलनात्मक अध्ययन विस्तृत न्यादर्श पर हाने चाहिए।

संदर्भ

कैम्पवेल, जे0पी0 (2005),इवैल्यूएटिंग टीचर परफॉरमेंस इन हायर एजुकेशन रू द वैल्यु ऑफ स्टुडेन्ट रेटिंग। डिजर्टेशन एब्सट्रैक्ट ,वॉल्यूम 66, नं. 8, फरवरी पृष्ठ सं.2851

ग्रीन बी.पी. टी.जी. क्लेअरन एण्ड बी.पी.रैडैट (1998).ए केन्टेन्ट एनालिसिस ऑफ टीचिंग इवैल्यूसन इन्स्टमेंट यूज्ड इन एकाउंटिंग डिपार्टमेन्ट। इश्यूज इन एकाउंटिंग एजूकेशन,12 (1) : पृष्ठ 15-30

तासी,साऊ,हुई (2005),द ओब्जेक्टिविटी ऑफ स्टूडेन्ट रेटिंस ऑफ इन्स्ट्रक्टर्स एमंग ताइवानी स्टूडेन्ट्स डिजर्टेशन एब्सटैक्स इन्तेशनल,नवम्बर 2005,वोल्यूम 66,नं. 5, पृष्ठ 1675-ए

बेरन, टी.एन.और जे.एल.रोकोस (2009),द इफेक्टिव टीचर्स कैरेक्अरिस्टिक्स ऐज पर्सिब्ड बाई स्टूडेंट्स। नर्सरी एजूकेशन एण्ड मैनेजमेंट,15 (4): पृष्ठ 323-340

बेनर, डी0एस0 (2007) ,टीचर इफिकेशी इन द इम्पलिमेंटेशन ऑफ न्यू कैरिकुलम सपोर्टेड प्रोफेशनल बाइ डेवलपमेंट। डिस्र्टेशन एब्सटैक्ट इन्टरनेशनल,वॉल्यूम 68,नं.3,सितंबर,पृष्ठ 959-ए

मकेची, डब्ल्यू.जे. (1997),स्टूडेंट रेटिंगसरू द वैलीडिटी ऑफ यूज। अमेरिकन साइकोलॉजिस्ट,वॉल्यूम (52),पृष्ठ 1218-1225

मरफी, ई0एल (2002) इन्टरडिसिपिलेन्टरी करीकुलम इनफूलऐंस ऑन स्टूडेटस अचीवमेंटर टीचर्स एण्ड एडमिनिस्ट्रेट एटीट्यूड एण्ड टीचर

एफीसिएंसी पी0एच0 डी0 एरोजोना स्टेट यू0 पृ 188

रेल्ली जे0सी0 (2016) डिफरिसिएटिंग द कन्सैप्ट ऑफ टीचर्स इफीसिऐंसी फॉर एकेडमिक एचीवमेंट ऑफ सोशल रिलेशन इट

साईट इन डेजरटेशन एब्सट्रेक्ट इन्टरनेशनल,वाल्यूम 63 न0 2,ए 2002 पृ0 1240 ए0

लाहिरी,एस.एवं राय,क. (2005) एक्सप्लोरिंग स्टूडेन्ट इवैल्यूएशन ऑफ टीचर्स : एन इरा फार रिर्सच।जर्नल ऑफ एजूकेशनल प्लानिंग एण्ड एडमिनिस्ट्रेशन (न्यूपा),जुलाई वाल्यूम XIX न.3,जुलाई,पृष्ठ 415-424

वेस्टली, पी.(2007). हाउ ऐम आई डूईंग द क्रानिकल ऑफ हायर एजूकेशन ,54 (9) : पृष्ठ 10

सेल्डन, पी. (1993). द यूज एण्ड एब्यूज आफ स्टूडैन्ट रेटिंग ऑफ प्रोफेसर्स। द क्रानिकल ऑफ हायर एजुकेशन,40 (1): पृष्ठ 40

सिन्याज, जे.के. (2008),ए स्टडी ऑफ फैकेल्टी पर्सेप्सन ऑफ स्टूडेन्ट इवैल्यूऐशन ऑफ टीचिंग इन फैकेल्टी एसेसमेंट प्रोमोशन एण्ड रेन्यूर डिसीजन। डिसर्टेशन एब्सट्रैक्ट इन्टरनेशनल,वॉल्यूम 69,नं.3 सितम्बर,पृष्ठ 891-ए

सिंह, आर.एवं साहू, पी.के (2009),उच्च शिक्षा स्तर पर कार्यरत अध्यापकों की प्रशिक्षण आवश्कताओं की पहचान और प्रशिक्षण कार्यक्रमों का आयोजन। परिप्रक्ष्य, (शैक्षिक योजना और प्रशासन का सामाजिक-आर्थिक सन्दर्भ) वर्ष-16,अंक-3 पृष्ट 1-20

स्पेंसर, पी.ए एण्ड एम.एल फ्लेयर (1992),द फारमल इवैल्यूशन एज ऐन इम्पिटस टू क्लास रुम चैंज रू मिथ ऑफ रियल्टी,इरिक रिपोर्ट : इ डी 34653

शुक्ल, आई (2008) वरनोट एण्ड स्ट्रेस एमंग सेकेण्डरी स्कूल टीचर्स इन रिलेशन टू देयर टीचर इफेक्टिवनेस ई0जर्नल ऑफ आल इण्डिया,एसोशियेशन फोर एजुकेशन रीचर्स (ई0जे0ए0आई0ए0ई0आर0) वॉल्यूम 20

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