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Index

MEDIATING ROLE OF SELF-EFFICACY IN THE RELATIONSHIP BETWEEN LOCUS OF CONTROL AND ACADEMIC SELF-HANDICAPPING AMONG SECONDARY SCHOOL STUDENTS

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Abstract

Academic self-handicapping refers to students' tendency to create or claim obstacles that hinder their performance, allowing them to attribute potential failure to external factors rather than lack of ability. This behaviour undermines genuine learning, motivation, and academic success. Globally, it has emerged as a growing concern due to increasing academic competition and performance pressure. In India, where academic achievement is often equated with personal worth and societal approval, self-handicapping is particularly problematic, leading to stress, avoidance behaviours, and reduced academic resilience among students. However, it has been believed that students with an internal locus of control and high self-efficacy are less likely to engage in academic self-handicapping, as they attribute outcomes to their own efforts and believe in their capability to succeed. In contrast, those with an external locus of control and low self-efficacy tend to adopt self-handicapping strategies to protect their self-esteem from potential failure. Thus, fostering internal control beliefs and strengthening self-efficacy can play a vital role in reducing self-handicapping tendencies and promoting authentic academic engagement. Recognizing the interplay between locus of control and self-efficacy, the present study was a humble attempt to find mediating role of self-efficacy between locus of control and academic-handicapping among secondary school students. The sample of the study was 200 secondary school students of Punjab. The study revealed that both locus of control and self-efficacy effect significantly the academic-handicapping among students whereas self-efficacy plays as significant mediator with partial mediation.

Introduction

In the realm of education, the role of teachers is not merely that of disseminating knowledge; it is a multifaceted responsibility that encompasses the nurturing of young minds, fostering critical thinking, and imparting life skills that extend far beyond the confines of the classroom. As the fulcrum upon which the entire educational system pivots, teachers play a pivotal role in shaping the future of nations. Therefore, understanding and enhancing their professional commitment, a critical factor influencing their performance and the quality of education they provide, is of paramount importance.

Academic Self-Handicapping

Academic self-handicapping is a defensive strategy in which students deliberately create or claim obstacles that can serve as excuses for poor performance. This behaviour allows them to protect their self-esteem in the event of failure, while still being able to claim credit if they

succeed despite the handicap. The concept was originally introduced by Jones and Berglas (1978), who defined self-handicapping as "actions or choices that people make which obstruct their own performance so as to provide an external explanation for possible failure". They found that when people fear their success and talents and absence of capability means failure, they often claim or create obstacles to performance attainment.

Academic self-handicapping has several uncertain purposes, beyond creating impediments to task performance to equip oneself with outward attribution when future results are unpredictable, according to Shepperd and Leary (1986) e.g. lack of preparation before an exam is academic self-handicapping. Jones and Berglas (1978) defined self-handicapping as creating obstacles to performance accomplishment. It has been observed that when facing a critical evaluation, many people create impediments to performance success to protect their self-esteem rather than doing their best. Self-handicapping is unconscious process and begins when someone doubts their ability. When someone performs poorly on an exam, failure source credibly exteriorizes towards drawback in lieu of capability lacking, e.g., a student who attended late-night parties or functions before a major exam can ascribe poor performance to lack of study, fatigue, and uncertainty about their ability.

According to Darley and Goethals (1980), academic self-handicapping occurs when students subconsciously create obstacles to their performance. This strategy involves choosing or acting in performance settings that increase the likelihood of externalizing failure and internalizing success. Arkin et al. (1985) classified academic self-handicapping as either internal e.g. decreased effort or external e.g. task difficulty. Moreover, self-handicapping can be claimed or acquired.

Various strategies of self-handicapping are used in distinct circumstances; hypochondria (Smith et al. 1982), performance-impeding drug selection (Kolditz & Arkin, 1982), depletion of practice for intellectual evaluations (Harris and Snyder, 1986), social anxiety (Snyder et al.,1985) and test anxiety (Smith et al., 1982) have been used as self-handicapping tools. Self-handicappers use protective attribution patterns instead of self-enhancing ones, preventing self-critical opportunity for achievement.

Academic self-handicapping often manifests as procrastination, reduced effort, failure to prepare adequately, or making excuses such as illness or fatigue before an assessment (Urdan & Midgley, 2001). Schwinger et al. (2022), in a comprehensive meta-analysis, described academic self-handicapping as a maladaptive strategy closely linked with fear of failure, low

self-esteem, and negative personality traits, highlighting its strong and consistent negative effects on academic achievement. The students who employ self-handicapping tactics avoid attempting to achieve goals due to fear of failure and appearing incompetent.

The phenomenon of academic self-handicapping has been extensively examined as a counterproductive approach that learners employ to safeguard their self-perception in assessment situations. Various theoretical frameworks offer insights into the reasons behind students' engagement in such behaviour. Attribution Theory by Weiner in 1985, highlights that learners frequently attribute their failures to external factors or controllable elements, such as insufficient effort or deliberate procrastination, instead of attributing them to a deficiency in ability. This externalization serves to protect their sense of competence.

Self-worth Theory as proposed by Covington (1992) is intricately connected to the notion that students' self-esteem is significantly linked to their academic achievements, suggesting that failure poses a threat to their perceived value. Students often construct barriers that act as justifications, allowing them to maintain their self-esteem despite experiencing academic challenges.

Viewed through the lens of Self-Determination Theory by Deci and Ryan (1985, 2000) self-handicapping signifies a deficiency in autonomy and intrinsic motivation. When individuals recognize external pressures instead of internalized objectives, they tend to adopt avoidance strategies to reduce the psychological costs associated with.

In a similar vein, Social-Cognitive Theory (Bandura, 1997) underscores the significance of self-efficacy, indicating that students who lack confidence in their academic capabilities are more likely to engage in self-handicapping behaviours as a means of managing expectations.

Alongside personal drive, societal influences are crucial. Impression Management Theory (Leary & Shepperd, 1986) considers self-handicapping as a strategic effort to influence others' perceptions of one's academic achievements. By providing justifications or noticeably diminishing their effort, students guarantee that any possible failure is linked to the obstacle rather than a lack of ability.

Goal Orientation Theory (Dweck & Leggett, 1988) enhances our comprehension by illustrating that students who adopt performance-avoidance goals are more inclined to engage in self-handicapping behaviours. This tendency arises from their main concern of evading

negative evaluations of their abilities, in contrast to mastery-oriented learners who typically steer clear of such strategies.

From a psychoanalytic perspective, Ego-Defensive Theory proposed by Baumeister & Scher (1988) conceptualizes self-handicapping as a safeguard against anxiety and self-doubt, assisting students in preserving psychological balance when confronted with demanding academic challenges.

Alongside these theoretical perspectives, scholars have identified several distinguishing characteristics of academic self-handicappers. Individuals often exhibit a tendency to procrastinate, intentionally postponing or diminishing their effort in tasks to establish barriers that rationalize unsatisfactory results (Schraw et al., 2007). Students often exhibit a tendency to make excuses, linking their academic challenges to external factors like time constraints, personal stress, or health issues (Urdan & Midgley, 2001). These individuals demonstrate an amplified fear of failure and heightened anxiety in evaluative situations, frequently associated with diminished academic self-efficacy (Elliot & Church, 2003; Urdan & Midgley, 2001). Furthermore, they generally exhibit a greater emphasis on performance, prioritizing the avoidance of negative assessments over the pursuit of mastery and development (Martin et al., 2003).

Individuals who engage in self-handicapping behaviours often prioritize the preservation of their self-esteem over maintaining steady academic performance (Zuckerman & Tsai, 2005). This leads to unpredictable performance patterns, where sporadic successes are often eclipsed by underperformance stemming from variable effort (Schwinger et al., 2014). Ultimately, they exhibit a strong awareness of social dynamics, placing greater importance on the perceptions of peers, educators, and guardians rather than their personal academic achievements (Leary & Shepperd, 1986). Collectively, these traits demonstrate that self-handicapping, although it may provide a short-term boost to self-esteem, frequently hinders sustained learning, motivation, and overall academic achievement.

Locus of Control

The concept of locus of control originates in Rotter's (1966) Social Learning Theory, where it was introduced as a generalised expectancy concerning whether reinforcements are contingent on one's behaviour or independent of it. In simple terms, locus of control refers to the degree to which people perceive outcomes as being determined by their own actions (internal control) or by external factors such as luck, fate, or powerful others (external control).

Rotter (1966) defined locus of control as "the degree to which persons expect that a reinforcement or an outcome of their behaviour is contingent on their own behaviour or personal characteristics versus the degree to which they expect that the reinforcement or outcome is a function of chance, luck, or fate, is under the control of powerful others, or is simply unpredictable". Building on this, Lefcourt et al. (1981) argued that locus of control reflects an individual's perception of control over reinforcement and outcomes, emphasising that people with an internal orientation believe they can shape their future through effort, while those with an external orientation feel powerless and attribute results to uncontrollable circumstances.

According to Lefcourt (2014), "Locus of control is a generalised expectancy that outcomes are either under one's own control (internality) or controlled by external forces such as powerful others or chance". Judge et al. (2002) opined that within organisational psychology, locus of control has been defined as "a generalised belief regarding the causes of events, ranging from internal causation (e.g., effort, ability) to external causation (e.g., luck, fate)". Ng et al. (2006) found locus of control as "an individual's generalised belief regarding the causes of events in their lives, influencing motivation, behaviour, and adjustment across multiple domains".

More recently, Judge and Bono (2001) highlighted that locus of control is a core self-evaluative trait, which consistently predicts motivation, job performance, and satisfaction. In the academic context, internal locus of control has been associated with persistence, resilience, and higher achievement (Akça, 2012). Conversely, an external locus of control often correlates with avoidance strategies, poor adjustment, and self-handicapping (Akin, 2011).

It is important to note that locus of control is not an all-or-nothing trait, and individuals may vary in the degree to which they exhibit internal or external tendencies in different areas of their lives. Locus of control refers to a psychological concept that describes the extent to which individuals believe they can control events that affect them. It is a continuum ranging from internal to external.

(a) Internal Locus of Control: Individuals with an internal locus of control believe that they significantly influence events in their lives. They attribute outcomes to their actions, decisions, and efforts. People with a strong internal locus of control are more likely to take responsibility for their actions, feel empowered, and actively engage in problem-solving.

(**b) External Locus of Control:** In contrast, individuals with an external locus of control believe that external factors, such as luck, fate, or powerful others, dominate in determining the outcomes of their lives. People with a strong external locus of control may feel less in control of their circumstances. They may attribute success or failure to external forces beyond their control.

Self-Efficacy

The concept of self-efficacy was introduced by Albert Bandura within his Social Cognitive Theory, where it was identified as a central determinant of human functioning. Self-efficacy refers to an individual's belief in their capacity to plan and execute the actions required to achieve designated types of performance (Bandura, 1997).

Bandura (1997) defined self-efficacy as "beliefs in one's capabilities to organise and execute the courses of action required to produce given attainments" (p. 3). He emphasised that self-efficacy beliefs influence how people think, feel, motivate themselves, and behave.

Later et al. (2002) extended this understanding to education, stating that "self-efficacy beliefs are context-specific judgments of capability that strongly influence students' motivation and learning" (p. 17). They highlighted that students who believe in their ability to succeed are more likely to engage in challenging tasks, persist when facing difficulties, and ultimately achieve better academic outcomes.

Zimmerman (2000) further stressed the role of self-efficacy in self-regulated learning, noting that students with high self-efficacy set higher goals, use more effective strategies, and monitor their progress more closely. Conversely, students with low self-efficacy are prone to avoidance behaviours, poor persistence, and diminished achievement. It is simply an individual's confidence in their capacity to succeed in a particular situation. Achieving a strong sense of self-efficacy requires a firm belief in your capacity to self-regulate and modify your behaviour in order to attain your desired outcomes. The belief in one's capabilities influences emotions, thoughts, actions, and motivation. In the subsequent year, symptoms such as stress, despair, concern, and helplessness are indicative of low self-efficacy (Zulkosky, 2009).

Self-efficacy assesses an individual's capacity to harness resources in pursuit of their objectives (Gosselin & Maddux, 2003). Self-efficacy can be categorized into two distinct types: low self-efficacy and high self-efficacy.

Individuals with low self-efficacy often lack confidence in their abilities, leading them to avoid risks, challenges, and new experiences for fear of failure. Uncertainty and self-doubt further restrict exploration, preventing them from discovering areas of strength. Frequent feelings of inadequacy and disappointment discourage engagement in new endeavours, even when effort is applied, reinforcing beliefs of failure. Such individuals may also rely on impression management, projecting competence to gain approval while concealing insecurity. However, this anxiety about being exposed as insincere can limit opportunities to learn from failure and hinder the development of genuine self-efficacy.

On the contrary, individuals with high self-efficacy exhibit greater confidence compared to those with low self-efficacy when confronting challenging situations and making decisions. The key features include elevated self-confidence. They tackle jobs and situations with assurance in their skills. Heightened self-assurance can result in greater experience, which subsequently enhances one's abilities, thereby further elevating one's confidence. This constructive feedback loop holds the promise of enhancing self-efficacy to an even greater extent. A sense of accomplishment often accompanies individuals who possess high self-efficacy, as they tend to embrace risks and pursue their interests with confidence, leading to greater success. When confronted with setbacks, they find value in their achievements, viewing errors as opportunities for personal growth and development. Individuals who possess a strong belief in their abilities tend to engage in calculated risks to enhance their likelihood of achieving success.

Research Gap and Emergence of the study

While locus of control, self-efficacy, and academic self-handicapping have each been studied extensively in educational psychology, there remain several critical gaps

Stewart and De George-Walker (2014) attempted a path model combining perfectionism, locus of control, and self-efficacy in predicting self-handicapping, but their evidence for mediation by self-efficacy was weak and based on a university student sample. The mediating role of self-efficacy has been more frequently tested in relation to constructs such as fear of negative evaluation, academic dishonesty, or performance goals (Uluman-Mert & Tunç, 2023), but there is sparse evidence in the domain of locus of control→ self-handicapping, particularly among secondary school students. In a study on adolescents in the secondary stage, Mohamed and Shaheen (2023) found significant negative correlations between self-handicapping and self-efficacy, as well as between self-handicapping and locus of control, but did not test a mediation model (Mohamed & Shaheen, 2023). Au et al. (2015) studied the respective contributions of locus

of control and self-efficacy in university students and how perceived control mediates between them for academic outcomes

However, the lineages of research originate in Western or university settings, with limited representation from many non-Western contexts and the studies among secondary school populations in India or neighbouring regions are relatively rare. Stewart and De George-Walker (2014), for instance, found that self-efficacy did *not* significantly mediate between external locus of control and self-handicapping in their sample. This suggests the need for further, more fine-grained investigation, ideally in different populations and with robust statistical methods.

The current study emerges in response to the foregoing gaps and is guided by several rationales. Secondary school is a formative period in which students' beliefs about control, self-confidence, and coping strategies crystallise. The adoption of self-handicapping behaviours at this stage can have enduring effects on academic trajectories, self-concept, and resilience. Understanding how and why locus of control influences self-handicapping is crucial. If self-efficacy mediates this relationship, then interventions targeting self-efficacy may disrupt the maladaptive path from an external locus to self-handicapping behaviour. By focusing on secondary school students (rather than solely university populations), and in a perhaps underrepresented cultural context of India, the study seeks to test whether the patterns observed in adult/tertiary settings hold true in adolescents. This work can contribute to theoretical refinement in social cognitive and educational psychology models (e.g. Bandura's theory of self-efficacy, Rotter's locus of control framework). If self-efficacy is found to mediate the effect of locus of control, then school counsellors, educators, and policymakers can design programmes to strengthen students' self-believing capacities, thereby potentially reducing their reliance on self-handicapping strategies and improving academic outcomes.

In summary, this study not only fills a substantive gap in the literature but also aspires to deliver actionable insights into how beliefs about control and self-efficacy jointly influence academic self-handicapping.

Operational Definition

Academic Self-handicapping: Academic self-handicapping refers to the self-protective strategies for regulating the threats of self-esteem. These threats are drawn out from fear of failure in academic achievement settings. Academic self-handicapping offers the opportunity to protect the persons' fragile image, to externalize failure and internalize success. In its operational terms, academic self-handicapping refers to the scores of secondary school students on Academic Self-Handicapping Scale (2020) developed by Gupta and Geetika.

Locus of Control: Locus of control refers to the extent to which students perceive life outcomes as being the result of their own actions (internal locus) versus external forces such as luck, fate, or other people (external locus). In its operational terms, locus of control refers to the scores of secondary school students on Locus of Control Scale (2005) developed by Hasnain and Joshi.

Self-Efficacy: Self-efficacy is defined as students' general belief in their ability to successfully perform tasks and handle challenges across different situations, independent of specific skills. In its operational terms, self-efficacy refers to the scores of secondary school students on Self-efficacy Scale (2012) by Mathur and Bhatnagar.

Objectives

1. To examine the relationship between locus of control and academic self-handicapping among secondary school students.
2. To investigate the association between locus of control and self-efficacy of secondary school students.
3. To determine the relationship between self-efficacy and academic self-handicapping of secondary school students.
4. To assess whether self-efficacy mediates the relationship between locus of control and academic self-handicapping.

Hypotheses

1. There is a significant relationship between locus of control and academic self-handicapping among secondary school students.
2. There is a significant relationship between locus of control and self-efficacy among secondary school students.
3. There is a significant relationship between self-efficacy and academic self-handicapping among secondary school students.
4. Self-efficacy mediates the relationship between locus of control and academic self-handicapping of self-efficacy.

Method

This study employed quantitative research method. Data was collected from a diverse sample of 200 secondary school students across different educational institutions of Punjab state. Descriptive survey method of research was used to collect the data.

Sample

A sample of 200 secondary school students (classes XI and XII) were selected from four senior secondary schools of Ludhiana district of Punjab. The sample was fairly distributed in terms of gender and stream of the study.

Tool

1. Academic Self-Handicapping Scale by Gupta and Geetika (2020).
2. Locus of Control Scale by Hasnain and Joshi (2005).
3. Self-efficacy Scale by Mathur and Bhatnagar, (2012).

Statistical Techniques

Pearson's Product Moment correlational technique and series of regression analysis were employed.

Results and Conclusion

The examined relationships between the variables in the suggested model are shown in figure 1.

Figure 1. The model of the expected relationship between Organizational Climate and Professional Commitment mediated by Job Crafting

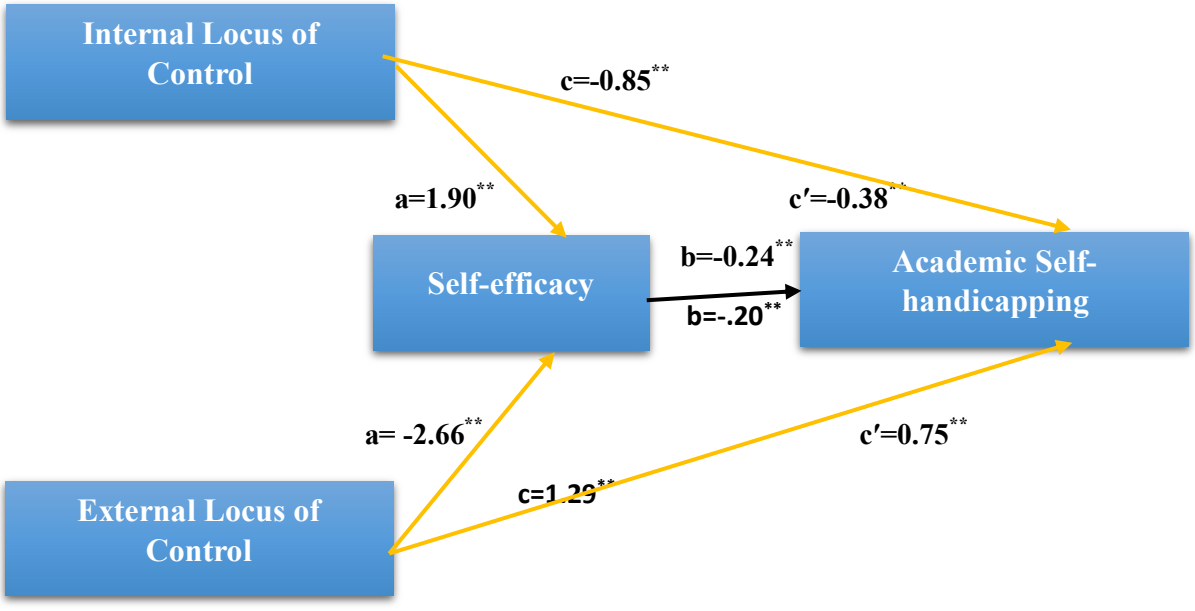

Table 1: Mean values (M), standard deviations (SD) and correlations between Locus of Control (Internal and External), Academic Self-handicapping and Self-efficacy (N = 200)

	Descriptive		Correlation			
	M	**SD**	**Int LOC**	**Ext LOC**	**ASH**	**SEff**
Internal Locus of Control (Int LOC)	33.45	11.82	-	-0.47**	-0.46**	0.46**
External Locus of Control (Ext LOC)	37.39	10.06	-	-	0.60**	-0.55**
Academic Self-handicapping (ASH)	70.54	21.77	-	-	-	0.64**
Self-efficacy (SEff)	157.53	48.56	-	-	-	-

**Significant at 0.05 level of significance, **Significant at 0.01 level of significance*

Table 1 presents mean values, standard deviations and correlations between the variables under study i.e. locus of control (internal and external), academic self-handicapping and self-efficacy. The result revealed a significant negative correlation between internal locus of control and academic self-handicapping ($r=-0.46$, $p<0.01$) whereas a significant positive correlation between external locus of control and academic self-handicapping ($r=0.60$, $p<0.01$). A significant positive correlation was evident between self-efficacy and academic self-handicapping ($r=0.64$, $p<0.01$). Also, a significant positive correlation was found between internal locus of control and self-efficacy ($r=0.46$, $p<0.01$) and a significant negative correlation between external locus of control and self-efficacy ($r=-0.55$, $p<0.01$).

Table 2. Results of Mediation Analysis of Self-Efficacy Mediating the relationship between Locus of Control (Internal and External) and Academic Self-handicapping (N = 200)

Internal Locus of Control							
Path / Effect	**B**	**SE**	**t**	**P**	**LLCI**	**ULCI**	**β (Std.)**
a Path: Int. Locus of Control (X) → Self-Efficacy (M)	1.90	0.26	7.36	<0.001	1.39	2.41	0.46
b Path: Self-Efficacy (M) → Academic Self-Handicapping (Y)	–0.24	0.03	9.05	<0.001	–0.30	–0.19	–0.54
c Path (total effect): Int. Locus of Control (X) → Academic Self-Handicapping (Y)	–0.85	0.12	7.29	<0.001	–1.08	–0.62	–0.46

c′ Path (direct effect): Int. Locus of Control (X) → Academic Self-Handicapping (Y)	–0.38	0.11	3.48	<0.001	–0.60	–0.17	–0.21
Indirect effect (ab): via Self-Efficacy	–0.46	0.07	—	—	–0.62	–0.34	–0.25
External Locus of Control							
a Path: Ext. Locus of Control (X) → Self-Efficacy (M)	–2.66	0.29	9.29	<0.001	–3.22	–2.10	–0.55
b Path: Self-Efficacy (M) → Academic Self-Handicapping (Y)	–0.20	0.03	7.36	<0.001	–0.25	–0.15	–0.45
c Path (total effect): Ext. Locus of Control (X) → Academic Self-Handicapping (Y)	1.29	0.12	10.42	<0.001	1.04	1.53	0.59
c′ Path (direct effect): Ext. Locus of Control (X) → Academic Self-Handicapping (Y)	0.75	0.13	5.73	<0.001	0.49	1.01	0.35
Indirect effect (ab): via Self-Efficacy	0.53	0.08	—	—	0.38	0.70	0.25

Table 3. Model Summary for Regression Equations in the Mediation Model (N = 200)

Internal Locus of Control							
Outcome Variable	**Predictor(s)**	**R**	**R^2**	**F**	**df1**	**df2**	**p**
Self-Efficacy (M)	Internal Locus of Control (X)	0.463	0.215	54.11	1	198	<0.001
Academic Self-Handicapping (Y)	Internal Locus of Control (X), Self-Efficacy (M)	0.666	0.443	78.39	2	197	<0.001

Academic Self-Handicapping (Y)	Internal Locus of Control (X) only (Total effect)	0.460	0.212	53.20	1	198	<0.001
External Locus of Control							
Outcome Variable	**Predictor(s)**	**R**	**R^2**	**F**	**df1**	**df2**	**p**
Self-Efficacy (M)	External Locus of Control (X)	0.555	0.304	86.34	1	198	<0.001
Academic Self-Handicapping (Y)	External Locus of Control (X), Self-Efficacy (M)	0.702	0.493	95.94	2	197	<0.001
Academic Self-Handicapping (Y)	External Locus of Control (X) only (Total effect)	0.595	0.354	108.48	1	198	<0.001

Table 3 shows that (i) internal locus of control explains about 21% of variance in self-efficacy; (ii) together, internal locus of control and self-efficacy explain 44% of variance in academic self-handicapping; and (iii) without the mediator, internal locus of control alone explains 21% of variance in academic self-handicapping.

It further shows that (i) external locus of control explains about 30% of variance in self-efficacy; (ii) together, external locus of control and self-efficacy explain 49% of variance in academic self-handicapping; and (iii) without the mediator, external locus of control alone explains 35% of variance in academic self-handicapping.

Table 2 shows results of mediation analysis of self-efficacy mediating the relationship between internal locus of control and academic self-handicapping

1.1 Path a: Effect of Internal Locus of Control (IV) on Self-efficacy (Mediator)

- Coefficient (a)=1.90, SE=0.26, t=7.36, p<0.001
- Standardised coefficient=0.46
- R^2=0.215

This implies that internal locus of control significantly predicts self-efficacy. for each one-unit increase in internal locus of control, self-efficacy increases by about 1.90 units. Approximately 21% of the variance in self-efficacy is explained by internal locus of control.

1.2 Path a: Effect of External Locus of Control (IV) on Self-efficacy (Mediator)

- Coefficient(a)=-2.66, SE=0.29, t=9.29, p<0.001

- Standardised coefficient=-0.55
- $R^2 = 0.304$

This implies that external locus of control negatively predicts self-efficacy. For each one-unit increase in external locus of control, self-efficacy decreases by about 2.66 units. Students with a higher external locus of control report significantly lower self-efficacy. About 30% of the variance in self-efficacy is explained by external locus of control.

Thus, Hypothesis 2 proposed that '*there is no significant relationship between locus of control and self-efficacy among secondary school students'* has been confirmed. The analyses indicated a significant positive correlation between internal locus of control and self-efficacy, while demonstrating a significant negative correlation between external locus of control and self-efficacy. The findings indicate that individuals with an internal orientation exhibit greater confidence in their abilities, while those with an external orientation are more likely to view themselves as having less influence over academic results. This aligns with Bandura's (1997) social cognitive theory, highlighting that perceived self-efficacy is shaped by mastery experiences and an individual's sense of personal agency.

2.1 Path b: Effect of Self-efficacy (Mediator) on Academic Self-handicapping (DV) [controlling Internal Locus of Control (IV)]

- Coefficient (b)=–0.24, SE=0.03, t=9.05, p<0.001
- Standardised coefficient=–0.54

This indicates that self-efficacy significantly predicts academic self-handicapping. Higher self-efficacy is associated with lower academic self-handicapping, even after controlling for internal locus of control.

2.2 Path b: Effect of Self-efficacy (Mediator) on Academic Self-handicapping (DV) [controlling External Locus of Control (IV)]

- Coefficient (b)=–0.20, SE=0.03, t=7.36, p<0.001
- Standardised coefficient=–0.55

This indicates that self-efficacy significantly predicts academic self-handicapping. Higher self-efficacy is associated with lower academic self-handicapping, even after controlling for external locus of control, leading to confirmation of Hypothesis 3 stating that '*there is no significant relationship between self-efficacy and academic self-handicapping among secondary school students*.' The findings indicate a significant inverse correlation between self-efficacy and academic self-handicapping across both models. Students exhibiting elevated self-efficacy demonstrated a reduced tendency to engage in avoidance strategies or to employ self-protective excuses when confronted with academic challenges. This finding is consistent

with earlier studies showing that self-efficacy boosts motivation, persistence, and adaptive coping, which in turn diminishes self-handicapping behaviours (Bandura, 1997; Schwinger et al., 2014).

3.1 Path c (Total Effect of Internal Locus of Control (IV) on Academic Self-handicapping (DV) without Self-efficacy (Mediator)

- Coefficient (c)=–0.85, SE=0.12, t=7.29, p<0.001
- Standardised coefficient=–0.46
- R^2=0.212

This implies that internal locus of control has a strong, negative effect on academic self-handicapping. Students with higher internal locus engage less in academic self-handicapping.

3.2 Path c (Total Effect of External Locus of Control (IV) on Academic Self-handicapping (DV) without Self-efficacy (Mediator)

- Coefficient (c)=1.29, SE=0.12, t=10.42, p<0.001
- Standardised coefficient=0.59
- R^2=0.354

This implies that external locus of control has a strong positive effect on academic self-handicapping. Students with higher external locus of control engage more in academic self-handicapping.

Hence Hypothesis 1 stating that '*there is a significant relationship between locus of control and academic self-handicapping among secondary school students*' stands accepter. Significant relationships were identified between both internal and external locus of control and academic self-handicapping, though these relationships manifested in contrasting directions. The internal locus of control was found to have a negative correlation with self-handicapping, suggesting that students who perceive themselves as capable of influencing their own results are less inclined to partake in self-sabotaging academic actions. On the other hand, an external locus of control was found to positively predict self-handicapping. This indicates that students who attribute their successes or failures to external factors like luck, fate, or influential others tend to engage more in self-handicapping behaviours. The results align with Rotter's (1966) theory, suggesting that control orientation affects behavioural outcomes by shaping perceived personal responsibility and expectations of reinforcement.

4.1 Path c′ (Direct Effect controlling mediator)

- Coefficient (c′)=–0.38, SE=0.11, t=3.48, p=0.001
- Standardised coefficient=–0.21

This indicates that when self-efficacy is included in the model, the direct effect of internal locus on academic self-handicapping decreases but remains significant. This suggests Partial Mediation.

4.2 Path c′ (Direct Effect controlling mediator)

- Coefficient (c′)=0.75, SE=0.13, t=5.73, p=0.000
- Standardised coefficient=0.35

This indicates that when self-efficacy is added in the model, the direct effect of external locus on self-handicapping decreases but remains significant. This indicates Partial Mediation.

5.1 Indirect Effect (Mediation)

- Indirect effect=–0.46
- Bootstrapped 95% CI=[–0.62, –0.34] (does not include zero → significant)
- Completely standardised indirect effect=–0.25

Hence it may be concluded that students with a stronger internal locus of control are less likely to adopt academic self-handicapping strategies, partly because they exhibit higher levels of self-efficacy.

5.2 Indirect Effect (Mediation)

- Indirect effect=0.53
- Bootstrapped 95% CI=[0.38, 0.70] (does not include zero → significant)
- Completely standardised indirect effect=0.25

Hence it may be concluded that self-efficacy significantly mediates the effect of external locus of control on self-handicapping. About 25% of the total effect is transmitted through self-efficacy. The students with a stronger external locus of control are more likely to adopt academic self-handicapping strategies, partly because they perceive themselves as having lower self-efficacy.

This leads to confirmation of Hypothesis 4 proposing that '*self-efficacy mediates the relationship between locus of control and academic self-handicapping'*.

The mediation analyses indicated significant indirect effects of locus of control on self-handicapping via self-efficacy. The internal locus of control model indicates that an increase in internality leads to enhanced self-efficacy, subsequently resulting in a decrease in academic self-handicapping behaviours. The external locus model indicates that heightened externality leads to a reduction in self-efficacy, which in turn results in an increase in academic self-handicapping behaviours. In both instances, the indirect effect was significant, whereas the direct effect of locus of control continued to be significant but diminished in strength, suggesting partial mediation. Consequently, self-efficacy functions as a crucial psychological

mechanism that connects students' beliefs about control to their behaviours in coping with academic challenges.

Results and Conclusion

This study examined the mediating role of self-efficacy in the relationship between locus of control and academic self-handicapping among secondary school students.

- The results demonstrated significant relationship among the three variables - locus of control (internal and external), self-efficacy and academic self-handicapping. The internal locus of control was found to have a positive correlation with self-efficacy and a negative correlation with academic self-handicapping. In contrast, the external locus of control showed a negative correlation with self-efficacy and a positive correlation with self-handicapping.
- The findings revealed a significant negative correlation between self-efficacy and academic self-handicapping, suggesting that students who possess greater confidence in their abilities tend to avoid self-defeating behaviours.
- The mediation analyses indicated that self-efficacy served as a partial mediator in the relationship between locus of control and academic self-handicapping. Internal control specifically enhanced self-efficacy, leading to a reduction in academic self-handicapping, whereas external control diminished self-efficacy, resulting in an increase in academic self-handicapping.
- The findings offer empirical validation for Rotter's (1966) theory of locus of control and Bandura's (1997) social cognitive theory of self-efficacy, emphasizing self-efficacy as a crucial psychological mechanism that connects control beliefs to both adaptive and maladaptive academic behaviours.
- The findings indicate that students' perceptions of control and their self-beliefs play a significant role in influencing their academic motivation and coping strategies. Improving internal control orientations and bolstering self-efficacy can significantly contribute to minimizing academic self-handicapping behaviours and fostering academic resilience in secondary school students.

Educational Implications

The results of this study carry important consequences for educators, counsellors, curriculum designers, and policy-makers focused on the academic growth of secondary school students. The findings indicate that self-efficacy plays a partial mediating role in the connection between locus of control and academic self-handicapping, highlighting the importance of enhancing students' confidence in their abilities and fostering internal control orientations in educational settings.

1. It will help teachers to design classroom experiences that allow students to perceive a clear connection between their efforts and the results they achieve which in turn provide avenues for autonomous decision-making, establishing goals, and engaging in self-assessment enabling students to understand that their achievements are primarily influenced by their own efforts rather than external factors. Feedback ought to focus on factors within one's control, such as effort, strategy, and persistence, rather than on inherent ability or chance, aligning with Rotter's (1966) notion of internal control. School counsellors have the opportunity to integrate attribution retraining programmes, enabling students to reinterpret failure as a result of factors within their control, which can lead to a decrease in externality.

2. Guided by Bandura's (1997) social cognitive theory, interventions ought to emphasize mastery experiences, social modelling, and verbal persuasion to enhance students' sense of efficacy. It will help educators to enhance self-efficacy by offering tasks that are both challenging and attainable, allowing students to attain success through their efforts; by providing detailed, actionable feedback that acknowledges advancements; by employing peer modelling to illustrate efficient study techniques and adaptive strategies; and by fostering an environment that minimizes the fear of failure and promotes resilience.

3. Since low self-efficacy and external control orientations contribute to self-handicapping, schools should implement preventive strategies such as teaching adaptive coping and time-management skills, encouraging help-seeking behaviour rather than avoidance, and promoting a mastery-oriented rather than performance-oriented classroom climate where mistakes are viewed as learning opportunities.

4. School counsellors can play a crucial role in identifying students with high external locus of control and low self-efficacy. Targeted workshops, counselling sessions, and group discussions can be organised to strengthen self-beliefs, modify attributional styles, and develop self-regulatory skills. Regular monitoring of students' motivational patterns can help prevent the development of self-handicapping behaviours at an early stage.

5. Teacher training programmes should sensitise educators to the psychological constructs influencing academic behaviour. Incorporating modules on motivation, self-efficacy development, and attribution theory in teacher education curricula will enable teachers to adopt pedagogical practices that promote students' sense of control and competence.
6. Educational policy should recognise the importance of non-cognitive skills such as self-beliefs, motivation, and resilience. Policies encouraging formative assessment, reflective learning, and student autonomy will help nurture internal control and self-efficacy. Furthermore, schools may consider implementing structured life-skills or psychological well-being programmes to systematically address these dimensions.

In conclusion, the findings of this study emphasize that improving self-efficacy and encouraging an internal locus of control are crucial for diminishing self-handicapping behaviours and enhancing academic engagement. Educational interventions that enable students to take charge of their learning, acknowledge their own capabilities, and credit their achievements to personal effort can significantly enhance academic performance and psychological well-being in adolescents.

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EMPOWERING WOMEN THROUGH MATHEMATICAL AND VOCATIONAL EDUCATION UNDER NEP (2020)

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Abstract

India's National Education Policy (NEP) (2020) emphasizes the importance of empowering women through education, recognizing its crucial role in achieving sustainable development goals. This research paper explores the mathematical and vocational education pathways outlined in the NEP (2020), aimed at fostering gender equality and promoting economic self-reliance for women. By analyzing statistical data and policy framework, this study highlights the potential impact of the NEP in bridging the gender gap in education and enabling women to contribute to a sustainable future.

Key words: *Empowering women, mathematical education, vocational education, National Education Policy (NEP) (2020)*

Introduction

Education is a fundamental human right and a powerful tool for empowering individuals, particularly women, who have historically faced numerous socio-economic and cultural barriers. In India, the National Education Policy (NEP) (2020) marks a significant stride towards addressing gender disparities in education and promoting inclusive growth. This policy recognizes the pivotal role of women's education in achieving the United Nations' Sustainable Development Goals (SDGs) (United Nations, 2025), particularly SDG 4 (Quality Education) and SDG 5 (Gender Equality).

The NEP (2020) emphasizes the importance of mathematical and vocational education pathways as means to equip women with the necessary skills and competencies for securing gainful employment and contributing to the nation's economic development. This research paper delves into the specific provisions and strategies outlined in the NEP (2020), supported by relevant statistical data, to assess their potential impact on empowering women and fostering a sustainable future.

Mathematical Education for Women

Mathematical literacy is a fundamental component of the NEP (2020), recognizing its significance in various fields, including science, technology, engineering, and mathematics

(STEM). According to the All India Survey on Higher Education (AISHE) 2019-20, the Gross Enrolment Ratio (GER) for women in higher education stood at 27.3%, compared to 26.9% for men. However, the gender disparity becomes more pronounced in STEM fields, with only 42.7% of female students pursuing these disciplines (AISHE, 2019-20).

Table 1: Gross Enrolment Ratio in Higher Education (2019-20)

Category	GER (%)
Male	26.9
Female	27.3
Total	27.1

Table 2: Share of Female Students in STEM (2019-20)

Discipline Group	% of Female Students
STEM	42.7
Non-STEM	57.3

The NEP (2020) aims to address this disparity by introducing a comprehensive and integrated approach to mathematics education from an early age. The policy emphasizes the development of mathematical thinking, problem-solving skills, and computational abilities, which are essential for success in various careers and contribute to the nation's technological advancement.

Furthermore, the policy advocates for the creation of specialized mathematics programs, particularly at the secondary and higher education levels, to nurture talented female students and encourage their participation in STEM fields. By providing equal opportunities and tailored support, the NEP (2020) seeks to empower women with mathematical proficiency, enabling them to pursue lucrative careers in fields traditionally dominated by men.

Vocational Education and Skill Development

Recognizing the importance of skill development and employability, the NEP 2020 places a strong emphasis on vocational education and training (VET). According to the Periodic Labour Force Survey (PLFS) 2019-20, the female labour force participation rate in India stood at a

mere 24.5%, significantly lower than the global average of 47% (International Labour Organization, 2020).

Table 3: Female Labour Force Participation (2019-20)

Region/Category	Participation Rate (%)
India (Female)	24.5
Global Average (Female)	47.0
India (Male)	75.8

Moreover, women's ownership of enterprises remains disproportionately low. According to the Sixth Economic Census (2013-14), only 13.76% of establishments in India were owned by women entrepreneurs.

Table 4: Ownership of Establishments by Gender (2013-14)

Gender	Percentage of Ownership
Male	86.24
Female	13.76

The NEP (2020) aims to integrate vocational education into the mainstream education system, starting from the secondary level. The policy envisions the establishment of vocational training centers and the introduction of vocational courses aligned with industry needs and local economic opportunities.

By providing women with access to high-quality vocational education and training, the NEP (2020) seeks to equip them with the necessary skills and competencies for various trades and professions. This includes sectors such as agriculture, manufacturing, healthcare, and emerging fields like renewable energy and sustainable technologies.

Moreover, the policy emphasizes the development of entrepreneurship skills, enabling women to explore self-employment opportunities and contribute to the growth of micro, small, and medium enterprises (MSMEs). By strengthening vocational education, India can help women transition from informal to formal sectors, fostering long-term economic independence.

Conclusion: The National Education Policy (NEP) (2020) represents a transformative step towards empowering women in India through education. By emphasizing mathematical and vocational education pathways, the policy seeks to address gender disparities in STEM fields and promote economic self-reliance for women.

Through the implementation of the NEP (2020), women will have access to high-quality mathematical education, fostering their critical thinking and problem-solving abilities, and opening doors to diverse career opportunities in technology-driven sectors. Simultaneously, the integration of vocational education and skill development programs will equip women with industry-relevant competencies, enabling them to secure gainful employment or pursue entrepreneurial ventures.

If effectively implemented, these reforms could potentially raise women's Gross Enrolment Ratio in STEM disciplines by 15-20% over the next decade and double women-owned enterprises in India, creating a multiplier effect on economic growth.

By addressing the gender gap in education and promoting women's economic empowerment, the NEP (2020) has the potential to contribute significantly to the achievement of the United Nations' Sustainable Development Goals, particularly SDG 4 (Quality Education) and SDG 5 (Gender Equality). However, effective implementation and sustained efforts from all stakeholders, including government, educational institutions, and society, are crucial to realizing the transformative vision of the NEP 2020 and creating a sustainable future for women in India.

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ESCALATING HIV EPIDEMIC IN PUNJAB: EMPHASIZING THE CRITICAL ROLE OF EDUCATION

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Abstract

Punjab, a northwestern state of India, continues to face a significant public health challenge due to HIV/AIDS. The epidemic in the state is closely linked to high-risk behaviors, particularly injecting drug use, unsafe sexual practices and limited awareness regarding modes of transmission and social acceptance. Punjab is categorized as one of the high HIV prevalence states in India, with certain districts such as Amritsar, Ludhiana, Jalandhar and Bathinda reporting comparatively higher burdens of people living with HIV (PLHIV). According to recent estimates, the state has witnessed both regional variations and a gradual rise in new infections. The epidemic is concentrated among key populations, including injecting drug users (IDUs), female sex workers (FSWs), men who have sex with men (MSM) and transport workers, reflecting the social and economic vulnerabilities prevalent in the state. Urban centers and border districts report higher HIV positivity rates, particularly among IDUs due to needle sharing practices. The National Family Health Survey (NFHS-5, 2019–21) findings highlight mixed trends in awareness and social acceptance while comprehensive knowledge regarding prevention remains limited, especially among women. This knowledge gap fuels misconceptions and contributes to stigma, which hampers testing, treatment and care. The state has also seen an increase in HIV-related morbidity among drug users, a phenomenon highlighted by recent media reports. The rise of injecting drug use in districts like Ludhiana and Tarn Taran has amplified HIV transmission risks, posing a serious concern for the state's public health system. In response, the Punjab State AIDS Control Society (PSACS), has been implementing targeted interventions programs include harm-reduction programs for drug users, awareness campaigns, provision of antiretroviral therapy (ART) and measures to reduce mother-to-child transmission. Despite these efforts, challenges such as stigma, late diagnosis and inadequate reach of preventive services persist.

Keywords*: HIV/AIDS, Children with HIV, HIV education, Stigma and discrimination, rights, Sustainable development, Paediatric ART, Orphaned and vulnerable children (OVC), India HIV epidemic, National AIDS Control Organization (NACO), Global HIV response, Mother-to-child transmission, Youth and HIV prevention, School inclusion, Community support for HIV-positive children.*

Introduction

India has achieved considerable progress in reducing HIV incidence and AIDS-related mortality over the past decades; nevertheless, significant sub-national variations continue to shape the epidemic [National AIDS Control Organisation (NACO), 2023; UNAIDS, 2023]. In Punjab, the epidemic demonstrates a concentrated pattern, with injecting drug use emerging as a major driver of transmission in certain districts (NACO, 2023; PSACS, 2023). Understanding the state-specific epidemiology and its underlying determinants is therefore critical for designing targeted interventions that align with the National AIDS Control Programme (NACP) objectives and the Sustainable Development Goals (SDGs).

According to the most recent estimates by NACO (2023), Punjab continues to rank among the states with relatively higher HIV incidence compared to the national average. The 2023 summary reports highlight approximately 9,100 new HIV infections and 566 AIDS-related deaths, with the total number of people living with HIV (PLHIV) in the state surpassing 100,000. Notably, between 2010 and 2023, Punjab witnessed an estimated 100% increase in annual new infections, in sharp contrast to the overall national trend of decline during the same period (NACO, 2023; UNAIDS, 2023). Although the adult HIV prevalence in the state remains below 1%, the trajectory of new infections and AIDS-related mortality underscores the urgent need for focused and evidence-based responses.

Escalating HIV Transmission and its Dynamics

The HIV epidemic in Punjab remains concentrated among key populations, particularly people who inject drugs (PWID/IDU). Evidence from surveillance highlights that districts such as Ludhiana have reported an increasing share of HIV cases attributable to injecting drug use over the past decade (National AIDS Control Organisation [NACO], 2023; Punjab State AIDS Control Society [PSACS], 2023). While India has expanded harm reduction interventions-including needle-syringe exchange and opioid substitution therapy challenges such as service discontinuity, persistent stigma, and relapse continue to hinder effective coverage (UNAIDS, 2021; NACO, 2023).

Findings from the National Family Health Survey-5 (NFHS-5) indicate that comprehensive knowledge of HIV among adults aged 15–49 years remains limited in India, with Punjab reflecting similar trends (International Institute for Population Sciences [IIPS] & ICF, 2021). Stigma continues to act as a critical barrier to HIV testing and treatment uptake, impeding progress toward achieving the UNAIDS 95-95-95 treatment cascade goals (UNAIDS, 2023).

Gender disparities in awareness are also evident in Punjab's data. Men generally exhibit higher levels of HIV-related knowledge compared to women. For instance, 86% of men are aware that consistent condom use lowers the risk of HIV infection, compared to only 68% of women. Similarly, 82% of men acknowledge that maintaining a single, uninfected sexual partner reduces HIV transmission risk, whereas the proportion among women is considerably lower at 68% (IIPS & ICF, 2021). These disparities highlight the need for gender-sensitive awareness and prevention strategies tailored to the state's epidemiological realities.

As per 2011 Census of India, Literacy rate of Punjab is 76.68 percent, 81.48 percent amongst males and 71.34 percent amongst females (Mehra et al., 2016). Comprehensive knowledge of HIV/AIDS defined as knowing that consistent condom use and monogamy with an uninfected partner can reduce risk, acknowledging that a healthy-looking person can still be HIV positive, and rejecting at least two common misconceptions remains limited in the state (NFHS-5). Only 21% of women and 38% of men meet this benchmark, indicating considerable gaps in awareness, particularly among women while. These findings underscore the need for more inclusive, gender-sensitive education and intervention programs to improve prevention knowledge and reduce misinformation about HIV/AIDS in Punjab specifically pertains to youth.

Youth and young populations

Youth is commonly understood as the transitional phase between childhood and adulthood, marked by complex physical, psychological, social, and cultural development (Erikson, 1968; Arnett, 2000). This stage is characterized by accelerated biological growth, emotional fluctuations, intellectual exploration, and the gradual consolidation of personal identity. The definition of youth, however, varies internationally, depending on social, cultural, and policy contexts. The United Nations (2013) generally defines youth as individuals aged 15 to 24 years, while acknowledging that different nations may adopt broader or narrower age ranges.

In the Indian context, the National Youth Policy (2014) defines youth as those between 15 and 29 years of age, aligning with the demographic composition and developmental priorities of the country (Ministry of Youth Affairs and Sports, Government of India, 2014). Youth are widely regarded as the most vibrant and productive segment of society, embodying creativity, innovation, and energy (United Nations, 2018). At the same time, this period is often marked by heightened vulnerabilities, including peer influence, experimentation, exposure to high-risk behaviours, and challenges in accessing education and employment opportunities [World Health Organization (WHO), 2014].

From a sociological standpoint, youth is not solely determined by chronological age but also by the roles, responsibilities and expectations that individuals assume within society (Buchmann & Kriesi 2011). It is a critical period when individuals begin to assert independence, expand social networks, engage in civic participation, and contribute to both community and national development. Consequently, youth represent a pivotal demographic

whose empowerment shapes not only their personal trajectories but also broader social and economic progress.

Announced on August 14, 2024, the Punjab Youth Services Policy 2024 aims to empower nearly 46.5% of Punjab's population approximately 13.8 million youth through holistic developmental support with core Vision to cultivate a balanced, forward-thinking outlook among youth aged 15 to 35 years**.** Importantly, when equipped with appropriate skills, knowledge and resources, youth can serve as catalysts for social change and leadership within their communities [United Nations Population Fund (UNFPA), 2014].

While HIV prevalence has shown a consistent decline in many industrialized nations, the trend in several developing countries particularly among adolescents remains uneven. In India, where approximately 22.8% of the population falls within the 10-19 age group (Mendiratta & Passi, 2021), HIV continues to pose a serious challenge in terms of both incidence and prevalence. Despite the central role of young people in the epidemic, research focusing specifically on HIV prevention among adolescents has been relatively limited. Adolescence, defined as ages 10 to 19, is a pivotal phase of physical, psychological and social development. Given that adolescents constitute a substantial proportion of the reproductive age group, their health and well-being will significantly influence the future demographic and economic trajectory of India. Therefore, strategic investment in adolescents through adequate financial resources, evidence-based research, and robust policies are vital. To ensure no adolescent is left behind, interventions must extend deeply into communities, supported by all levels of governance and key community leaders.

The fundamental purpose of education is to uphold and nurture the inherent dignity of every individual. As of today, approximately 40.8 million people worldwide are living with HIV, reflecting a steady rise over the past decade. Globally, there were 2.3 million new HIV infections in 2012, marking a 33% decline from 3.4 million in 2001 (Eggertson, 2013). Similarly, AIDS-related deaths have decreased significantly, from 2.3 million in 2005 to 1.6 million in 2012 and nearly 6,30,000 in 2024 [World Health Organization (WHO), 2025].

In India, an estimated 2.39 million people were living with HIV in 2009, of which 36% were women and 4.4% were children. By 2021, the global number had increased to 38.4 million, including 36.7 million adults and 1.7 million children under the age of 15, with women and girls accounting for 54% of those affected. Beyond medical progress, the global AIDS

response has contributed to advancing the right to health, gender equality, human rights, employment and social protection. It has also challenged entrenched social norms, reduced exclusion and addressed legal barriers that obstruct health and development. Importantly, the investment-driven approach pioneered in the AIDS response is increasingly being integrated into broader global health and development strategies, further accelerating sustainable gains worldwide.

According to NACO (2023), Punjab has a total of 1,05,789 People Living with HIV (PLHIV) as of the year 2023. For effective planning and intervention, these cases are further categorized based on the level of the epidemic burden. The following section provides a detailed distribution of PLHIV across various districts of Punjab, along with their corresponding priority levels.

Table 1:District wise Categorization of PLHIV in Punjab (2023)

Priority	Number of Districts	Name of Districts	No of PLHIV
High-Priority	9	Amritsar, Bathinda, Gurdaspur, Hoshiarpur, Jalandhar, Ludhiana, Moga, Patiala, Tarn Taran	68,889 (65.11
Moderate Priority	10	Fatehgath Sahib, Fazilka, Ferozpur, Kapurthala, Mansa, Mohali, Muktsar, Pathankot, Sangrur, SBS Nagar	31,316 (29.60
Low Priority	3	Barnala, Faridkot, Rupnagar	4,953 (4.68%
Very Low Priority	1	Malerkotla	631 (0.59%)

Total=1,05,789

Table 1 titled “District-wise Categorization of PLHIV in Punjab (2023)” presents the distribution of People Living with HIV across the districts of Punjab, based on epidemic burden and priority levels as identified by NACO (2023). This classification into High, Moderate, Low and Very Low priority categories is crucial for effective program planning, targeted interventions and optimized allocation of resources.

- **High-Priority Districts (9 districts):** The highest concentration of PLHIV is reported from Amritsar, Bathinda, Gurdaspur, Hoshiarpur, Jalandhar, Ludhiana, Moga, Patiala, and Tarn Taran. Collectively, these nine districts account for 68,889 individuals**,** which represents 65.11% of the total PLHIV burden in the state**.** This indicates that more than half of Punjab's PLHIV population is concentrated in these districts, demanding intensified prevention, treatment, and care services.

- **Moderate-Priority Districts (10 districts):** Districts including Fatehgarh Sahib, Fazilka, Ferozpur, Kapurthala, Mansa, Mohali, Muktsar, Pathankot, Sangrur, and SBS Nagar fall into this category. Together, they contribute 31,316 PLHIV, representing 29.60% of the state's total burden. These districts, though less affected compared to high-priority ones, still reflect a significant proportion, necessitating sustained programmatic focus.
- **Low-Priority Districts (3 districts):** Barnala, Faridkot, and Rupnagar are categorized as low-priority with a cumulative 4,953 PLHIV (4.68%)**.** While the epidemic burden is comparatively lower here, consistent monitoring and awareness initiatives remain essential to prevent escalation.
- **Very Low-Priority District (1 district):** Malerkotla is the only district placed under this category, accounting for 631 PLHIV (0.59%) of the state total. Despite its lower prevalence, localized interventions are important to maintain control and ensure access to ART and support services.

Vulnerability of Children

Children of today are the youth of tomorrow. HIV affects this very precious generation and bear grave consequences to our future, our nation, the continent and the world at large. India has an estimated 202,000 children infected by HIV/AIDS (UNAIDS 2004) while 1,32,000 children, who are currently receiving ART in India (NACO, Sankalak,(2023**)** along with 1924 in Punjab state, however half of HIV-positive children die undiagnosed before their second birthday. Overall, while India has made significant progress in managing HIV nationally, Punjab's increasing HIV prevalence highlights the need for intensified, localized strategies tailored to its unique epidemiological and social context.

HIV/AIDS ACT

The Human Immunodeficiency Virus and Acquired Immune Deficiency Syndrome Prevention and Control) Act, 2017 is a landmark move to provide a conducive environment to people infected with and affected by HIV and culmination of consistent efforts of community members, civil society and legal experts for more than one and half decades. The Act aims to address stigma and discrimination so that people infected with and affected by HIV cannot be discriminated at homes, for employment and in healthcare settings. Their right to insurance, movement, holding public and private office, residence etc. should be maintained as per the prevailing laws and policies. The Act also reinstates constitutional, statutory and human rights of these people. It also provides for a robust grievance redressed mechanism in the form of a Complaints Officer at establishments and an Ombudsman at state level.

Furthermore, (NFHS-5) also highlight encouraging levels of social acceptance toward individuals living with HIV/AIDS (PLHIV). A significant majority of women (77%) and men (80%) expressed readiness to provide home-based care for an infected relative. Similarly, a large proportion (73% of women and 72% of men) supported the continuation of teaching by female educators living with HIV/AIDS, provided they were not ill. Acceptance in other community interactions was also evident. Moreover, 72% of women and 77% of men reported that they would not prefer to keep a family member's HIV status a secret, reflecting a relatively open attitude toward disclosure. In educational contexts, approximately 72% of women and 69% of men believed that HIV-positive students should be integrated with their HIV-negative peers in schools. Workplace inclusion also received positive responses, with 73% of women and 71% of men agreeing that individuals with HIV should work alongside others in the same office. These results suggest a gradual reduction of stigma and a growing recognition of the rights of PLHIV in Punjab, though gaps in universal acceptance still remain.

Among youth, levels of HIV-related knowledge vary considerably, depending on education, health service access, media exposure, and cultural context. Comprehensive knowledge involves understanding that HIV is transmitted through specific body fluids blood, semen, vaginal secretions, rectal fluids and breast milk and not through casual contact such as hugging, shaking hands or sharing food (WHO, 2022). It also includes awareness of preventive measures, such as consistent condom use, safe blood transfusions and avoidance of needle sharing, as well as the importance of early diagnosis and adherence to antiretroviral therapy (ART) [National AIDS Control Organisation (NACO), 2022].

Despite widespread public health campaigns, gaps persist. Some youth still believe in myths such as HIV transmission via mosquito bites, casual physical contact or supernatural causes. Such misconceptions can be traced to inadequate sex education, cultural silence on sexual health and misinformation spread through unverified media sources. (WHO, 2024; UNAIDS, 2023; NACO, 2023).

Conclusion: Punjab's epidemic is concentrated yet dynamic, shaped by IDU, pockets of low awareness and ongoing stigma. Priorities include strengthening prevention of vertical transmission, improving continuity of antiretroviral therapy (ART) and targeted social-behavioral interventions and rigorous enforcement of the HIV & AIDS (P&C) Act, the state can bend the incidence and mortality curves. HIV is not just a medical condition but a social disease, and its management requires a comprehensive approach that includes physical, psychological, spiritual, and social support, alongside active community mobilization and participation. Teachers, in particular, should reconsider their relationships with children affected or infected by HIV. By empathizing and putting themselves in the student's shoes, educators can better understand their emotions and needs. Today, let us re-examine our responsibilities toward these children and ensure that every child has access to education and the opportunity to grow up healthy.

In the context of HIV prevention, prioritizing young people as key beneficiaries of interventions is vital to reducing new infections and sustaining long-term public health gains (UNAIDS, 2021).

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PERSONALITY AS A DETERMINANT OF JOB STRESS: A STUDY OF GOVERNMENT AND PRIVATE COLLEGE TEACHERS

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Abstract

The present study aims to study the job stress level of college teacher working in government and private colleges with respect to personality. The sample consisted of 200 college teachers working in government and private degree colleges and private colleges of education of Jammu province of India affiliated to University of Jammu, Jammu. Personality inventory by Aziz and Gupta, and self-developed tool of job stress were used for data collection. Statistical techniques Mean, Percentage, Percentile, Quartile, 2 Way ANOVA, Correlation were used. Results revealed that there was no influence of personality on job stress but there was significant influence of type of college on job stress of college teachers. Private college teachers were found more stressed in comparison to their counterpart. Significant negative relationship existed between personality and job stress of college teachers. Majority of college teachers had moderate level of job stress (43.5%), 23.5% teachers had high stress and 33.0% fell in the category of low level of job stress.

Key words- *Personality, Introvert, Extrovert, College Teachers, Government, Private*

Introduction

Stress is the buzz word used by everyone to express strain observed in daily life. Job stress has become one of the most common reasons for stress in the life of a human being, it is the physical, emotional and psychological strain that happens when demands of job do not match resources, abilities or needs of a worker (Bakker & Vries. (2020). Workload, pressure of organization, high competition or deadlines etc. affects the physical and mental health of a person as well as performance, satisfaction and well-being. If stress is not managed may result in absenteeism, burnout, conflicts or reduced productivity, which is serious issue for both employer and employee. It is necessary to understand the causes, consequences and ways to manage stress in order to stay away from the ill effects of job stress. NIOSH (National Institute for Occupational Safety and Health) (1999) stated job stress as harmful physical and emotional responses that arise when a worker's capabilities, resources, or needs do not match the job requirements.

The person environment fit model (PE Fit) states that stress arises due to discrepancy between the person and the environment.

Ojeka et al. (2019) found that "Excess of workload, big class size, followed by economic factors, government policies and programs, administrative pressures, professionalism, parent/teachers' relationship, work-life pressures and environmental factors" are the factors causing job stress for teachers**.**

Personality

Personality means unique traits, abilities, behaviour pattern, temperament, interests, drives, attitude, values, self-concept, social style and emotional patterns that tells how an individual thinks feels and acts. Carl Gustav Jung, a Swiss psychiatrist and psychoanalyst, in 1921 described two types of personality (Introverts & Extroverts) in his book "Psychological Types" (Jung, 1921).

Introverts-People who are shy, quiet, reserved, like solitude, focussed, good listeners, sensitive, thoughtful, good listeners, direct their energy inward (toward thoughts, feelings, and reflection).

Extroverts- Talkative, sociable, outgoing, expressive, assertive, adaptable, energetic, action oriented, gets bored alone, direct their energy outward.

According to the American Psychological Association (2025), personality is commonly understood as a complex, dynamic integration or totality that is influenced by a variety of factors, such as genetic and constitutional tendencies, physical maturation, early training, identification with important people and groups, culturally conditioned values and roles, and important experiences and relationships.

Personality influences the interpretation of individuals and their reaction to workplace events, causes to affect the appraisal of stressful situation.

Review of Related Literature

Job Stress in relation to Personality

Bala and Kaur (2017) conducted a study to investigate the link between personality hardiness and work-related stress among secondary school teachers in Punjab. Findings revealed that personality and work-related stress have a negative and significant relationship.

Sakthivel et al. (2020) studied the influence of personality on academic stress among first year MBBS students in medical college, Kolar- a cross-sectional study. Results showed that academic success of those who scored high on extraversion (11.92%) was linked to low level of stress.

Bansal and Pathak (2020) conducted a study on IT professionals (government and private sectors) to investigate the personality as predictor of occupational stress. The result revealed significant positive relationship between personality and occupational stress.

According to Villarte and Tantiado (2024) teachers typically have conscientiousness personality traits and are unsure of their extroversion, the study found. Teachers became anxious when students showed no interest in learning. The personality attribute of neuroticism and the ability to handle stress at work are significantly correlated. Teachers may therefore create and disseminate proactive methods for inspiring students as well as individualised stress-reduction plans that address the needs of those with more neurotic inclinations.

It can be concluded that the studies by Bala and Kaur (2017)**,** Sakthivel et al. (2020), Bansal and Pathak (2020), Villarte and Tantiado (2024) revealed significant relationship between personality and job stress.

Job Stress of Government and Non-Government Employees

Vichhiya (2017) conducted a study on 60 (30 government and 30 non-government) employees in Nadiad city, to investigate the factors affecting job stress. The results of the study revealed that the private employees feel more stress than that of government employees.

Bansal and Pathak (2020) conducted a study on IT professionals (government and private sectors) to investigate the personality as predictor of occupational stress. The result indicated that the private sector IT professional show significantly more occupational stress as compared to their government counter parts.

Joshi et al. (2023) conducted a study on 300 employees, 150 employees from 20 service sector public organizations and 150 employees from 15 service sector private organizations in Kathmandu Valley. The result of the study indicated that the private sector employees face significantly high level of stress as compared to public sector employees.

Yadav and Verma (2023) conducted a study on 150 (75 government and 75 non-government) school teachers in Gurgaon district. The result of the study revealed that the level of occupational stress level in non-government school teachers is higher as compare to government school teachers.

It can be concluded on the basis of above studies that private sector employees face significantly more stress as compared to government sector employees.

Objectives of the study

1. To study the level of job stress of college teachers.
2. To study the significant influence of personality and type of college on job stress of teachers.
3. To study the relationship of job stress and personality of college teachers.

Hypotheses

1. There is no significant influence of personality on job stress of college teachers.
2. There is no significant influence of type of college on job stress of teachers.
3. There is no significant influence of personality and type of college on job stress of teachers.
4. To study the relationship of job stress and personality of college teachers.

Methodology

Population

Population of the present study included all the college teachers working in private and government degree colleges and colleges of education affiliated to University of Jammu, Jammu. Colleges were selected from Jammu province of India. Jammu province has 10 districts.

Sample

Sample of the study included 200 college teachers selected from private and government degree colleges and colleges of education affiliated to University of Jammu. Subjects of the study comprised college teachers who had regular experience of 5 years. Teachers who were appointed on basis of contractual and temporary basis were not considered for the study. Simple random sampling technique was used to collect data. 142 college teachers were selected from government colleges and 58 college teachers were from private colleges

Tools

1. Introversion, extroversion inventory by Aziz and Gupta (2013).

2. Job Stress Scale developed by the investigator. The questionnaire is consisting of 35 items. All 35 items were divided into 10 dimensions. The reliability of job stress scale tested by using Cronbach method was found to be 0.88. Face validity & content validity of tool was ascertained by giving it to 25 teachers and experts to determine face validity like questions are clear,

understandable and in logical order. The opinion of the teachers and subject experts was sought and few items were modified on their opinion.

Results

The influence of the personality type on job stress of college teachers: To study the influence of the personality and type of college on the Job stress of college teachers 2x2 analysis of variance was applied and the values are given in table 1 below:

Table 1: Showing the summary of 2x2 factorial design ANOVA of the Job stress of College Teachers

Source	Type III Sum of Squares	df	Mean Square	F	p
Personality	76.262	1	76.262	0.931	0.336
Type of College (Govt*Pvt)	3207.188	1	3207.188	39.137	0.000
Personality * Type of College (Govt*Pvt)	66.405	1	66.405	0.810	0.369
Error	16061.555	196	81.947		
Total	1169562.000	200			

(Govt. means Government College Teachers, Pvt. Means Private College Teachers)

From the table 1, it is evident that the F value for the personality is 0.93 which is non-significant ($p>0.05$, df =1/196). There was no significant influence of the Personality on the job stress of the college teachers. Thus, the null hypothesis 1 which states that 'There is no significant influence of personality on job stress of college teachers,' is accepted. The F value for the type of colleges is 39.137, which is significant ($p<0$, df =1/196). Further, the mean score of the Introverts for the Job stress is 76.58 which is significantly higher than those of the Extroverts, whose mean score of the Job stress is 75.10. (Table 2). It may therefore be said that the College teachers who are introverts are more job stressed than the Introverts.

Table 2: Mean value of Introverts/Extroverts & Government/ Private College Teachers

Personality	Government/ Private	Mean	Standard Deviation	N
Introvert	Government	74.5694	8.46671	72

	Private	82.1538	9.90633	26
	Total	76.5816	9.43881	98
Extrovert	Government	71.9286	8.29933	70
	Private	82.0625	11.02179	32
	Total	75.1078	10.32819	102
Total	Government	73.2676	8.45926	142
	Private	82.1034	10.44567	58
	Total	75.8300	9.90513	200

The Influence of the Type of the College on Job stress of College Teachers: From the table 1, it is evident that the F value for the Types of the College is 39.13 which is significant ($p<0.01$ level with df =1/196. Table. 2, shows that the mean scores the job stress of government college teachers is (73.26), which differ significantly from the private college Teachers (82.10). It may therefore be said that the private college teachers are more job stressed than the government college teachers. This finding is well supported by the studies conducted by Vichhiya (2017), Bansal and Pathak (2020), Joshi et al. (2023), and Yadav and Verma (2023). So, there was a significant influence of the types of the Colleges on the job stress of the college teachers. Thus, the null hypothesis 1 which states that 'There is no significant influence of type of college on job stress of teachers,' is rejected.

Figure 1: Trend of the influence of Type of college on the Job stress of College Teachers

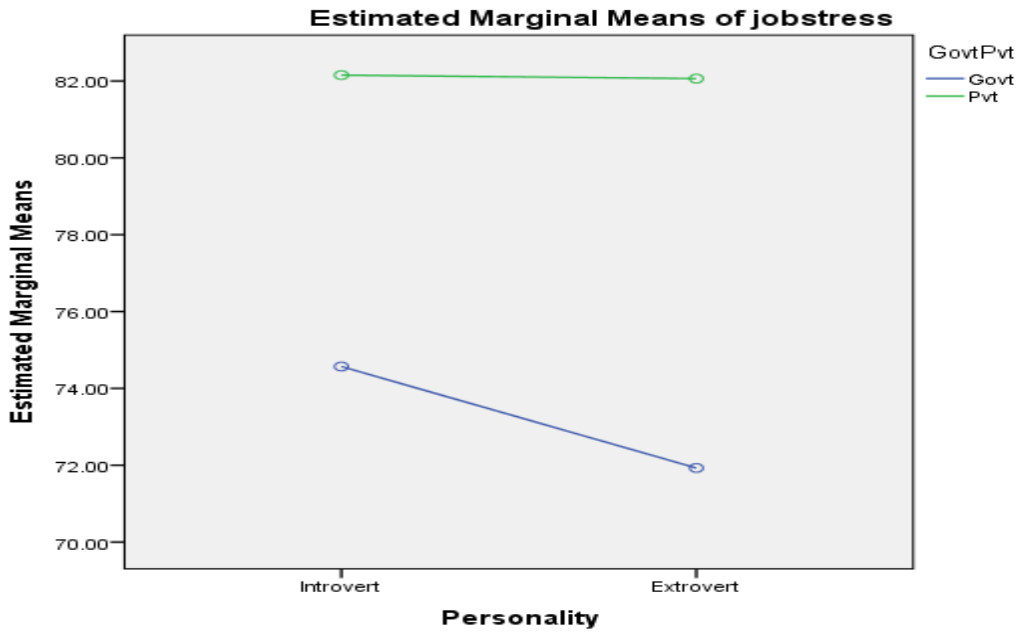


Figure 1 shows that College Teachers belonging to private colleges have high level of job stress in comparison to government college teachers. There is wide gap in job stress level of extrovert teachers working in government and private colleges. Introvert and extrovert teachers working in private colleges have almost same level of job stress.

From the table 1, it is evident that the F value for the influence of the interaction of personality and type of college on the Job stress of college teachers is 0.81 which is not significant at 0.05 level with df =1/196. There was no significant influence of the interaction of personality and type of college on the Job stress of college teachers. Thus, the null hypothesis that there is no significant influence of the interaction of personality and type of college on the Job stress of college teachers is accepted.

To study the relationship of Job stress and personality of college teachers Pearson's coefficient of correlation was worked out and the values are given in table 3 below:

Table 3: Showing the coefficient of Correlation between the Job stress & the personality of the College Teachers

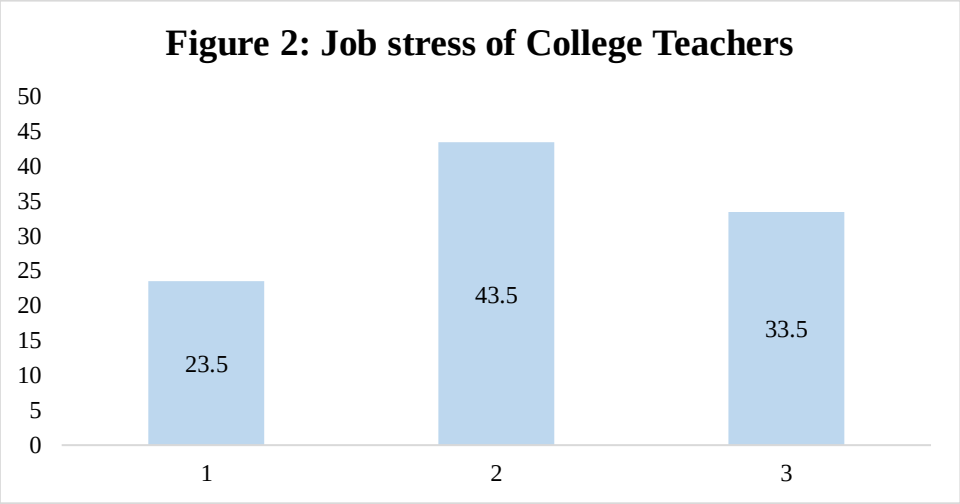
		Personality	**Job Stress**
Personality	**Pearson Correlation**	1	-0.129**
	Sig. (2-tailed)		0.000
	N	800	800
Job Stress	**Pearson Correlation**	-0.129**	1
	Sig. (2-tailed)	0.000	
	N	800	800

***Significant at the 0.01 level.*

As there was no significant difference in job stress due to influence of personality, in order to understand the correlation between the Job stress & the personality the Pearson correlation was calculated as shown in Table 3. The coefficient of correlation is -0.129, which is significant negative ($p<0.01$), which means that the job stress is inversely proportionate with the personality of the college teachers. It means that the teachers who are having good score of personality have less stress in comparison of the teachers having less score of personality. Introvert college teachers have higher score, it means introvert college teachers have high level of job stress in comparison to extroverts. This finding is in line with the findings of studies conducted by Bala and Kaur (2017)**,** Sakthivel et al. (2020), Bansal and Pathak (2020), Villarte and Tantiado (2024).

Table 4: Level of job stress of college teachers

S. No.	Range of Score	Grade	Level of Job Stress	Number of Teachers	Percentage of Teachers
1.	80-105	A	High	47	23.5
2.	73-79	B	Average	86	43.5
3.	30-72	C	Low	67	33.0



The Table 4 and figure 2 depicts the level of job stress of college teachers, showing that 23.5% college teachers have high level of job stress, 43.5% college teachers have moderate /average level of job stress and 33.0 % college teachers have low level of job stress.

Educational Implications of the Study

Teachers are very important for all stages whether it is primary, secondary or higher level of education. Teachers at tertiary level play key role in transforming the future of youth but stress of job may be an impediment in the work productivity of teachers. In the present time job stress is inevitable due to increasing demands of work and dissatisfaction arising in workplace.

Results revealed difference between the job stress of government and private college teachers. Private college teachers were found more stressed. This finding has implication for the policy makers, management and other stakeholders also. Teachers in private colleges have no security of job and fetch very less salary as compared to government college teachers. In order to bring equity among the teaching fraternity while framing policies emphasis should be laid on equal opportunities of development and certain regulations which lay emphasis on providing equal avenues and equal remuneration. Teachers recruited in private sector get very

less remuneration, which is even less than the monthly earnings of a daily wager even. Teachers in private sector do not get benefits of ccl, earn leave, medical leave etc. In private colleges there are least avenues of growth, moreover it is stagnant but in government colleges conditions are vice-versa. As in present time we talk about promotion of private sector but if we talk about the present status of private colleges in the UT the teachers working in these colleges are not satisfied. Teachers recruited in these colleges are constantly in stress due to low remuneration and job insecurity. Due to such conditions private college teachers do not command respect.

Most of the learners seek education from private institutes. As most of the would-be teachers are trained in private colleges of education. Government must also implement welfare schemes for the teachers recruited there. Government should take into consideration regarding the salary and other benefits of private institute teachers.

Conclusion: To sum up it could be concluded that personality is not a factor responsible for job stress of college teachers. A negative but negligible correlation indicates some influence of personality but it is not a major determinant. However, the type of institution was found to be crucial factor, indicating private college teachers experiencing high level of stress in comparison to government college teachers. Overall institutional setting (Type of college) was found to be major contributor to stress levels than personality traits. On the part of government and policy makers is to see the concern of private college teachers as well as teachers working in private institutions because if destiny maker is stressful, it will affect the quality of teaching and learning process. By acknowledging and addressing these issues, wellbeing of teachers can be enhanced which in turn can strengthen education system

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ENCOURAGING EQUITY: ANALYZING GENDER-BASED DIFFERENCES IN ENGAGEMENT AND PERFORMANCE IN SCIENCE SUBJECTS

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Abstract

This theoretical paper delves deeply into the gender-based differences observed in engagement and performance in science subjects across educational levels. Drawing on diverse theoretical frameworks, it investigates how socio-cultural constructs, classroom environments, curricular design, teacher perceptions, and psychological factors contribute to gender disparities. While significant advancements have been made toward educational equality, persistent gender-based gaps in science, particularly in physics, engineering, and technology—indicate the need for systemic reform. The paper employs Social Cognitive Theory, Expectancy-Value Theory, and Feminist Pedagogy to explain the mechanisms driving these disparities and to propose actionable strategies for promoting gender equity. It recommends a multi-pronged approach encompassing curriculum redesign, gender-sensitive teaching practices, increased representation of female role models, mentorship programs, and inclusive policy interventions. The paper concludes with recommendations for educational institutions, policymakers, and community stakeholders to foster a more equitable and engaging science education landscape (Bandura, 1986; Britner & Pajares, 2006; Eccles & Wigfield, 2002; Shrewsbury, 1993).

Keywords: *Gender Equity, Science Education, STEM, Engagement, Performance, Inclusive Pedagogy, Gender Stereotypes*

Introduction

Science education is pivotal in equipping learners with critical thinking, problem-solving, and innovation skills necessary for navigating the complexities of the 21st century. However, persistent gender disparities in science engagement and academic performance hinder the full participation of all learners. Although girls often outperform boys in many academic domains in early education, their representation and engagement in science subjects, particularly in STEM-related pathways, diminish as they progress through their education (UNESCO, 2019).

The root causes of these disparities lie beyond individual capabilities. They are deeply embedded in social structures, cultural expectations, and institutional practices that shape students' educational experiences. These factors influence how students perceive themselves, how they are treated in classrooms, and the choices they make about their futures. This paper aims to provide a comprehensive theoretical exploration of these dynamics, emphasizing the need to address gender not as a static biological distinction but as a fluid, socially constructed identity (Ceci & Williams, 2011). Through this lens, the paper seeks to guide educators, researchers, and policymakers toward strategies that foster equitable engagement and performance in science subjects.

Theoretical Frameworks

Social Cognitive Theory: Albert Bandura's Social Cognitive Theory (1986) highlights the interplay between individual, behavioral, and environmental factors. Central to this theory is the concept of self-efficacy, which significantly influences a student's willingness to engage in and persist with challenging tasks. Girls often receive less encouragement to pursue science, both implicitly and explicitly, which undermines their science self-efficacy (Britner & Pajares, 2006). This reduced confidence can lead to lower participation in science-related courses and activities.

Media representations and gendered messaging further exacerbate this issue. The persistent portrayal of scientists as male and socially isolated reinforces the stereotype that science is not a suitable field for women. Such influences are internalized over time, shaping girls' self-perceptions and diminishing their interest in science careers (Sadler et al., 2012).

Expectancy-Value Theory: Expectancy-Value Theory posits that students' motivation and academic choices are influenced by their expectations of success and the value they attach to a given subject (Eccles & Wigfield, 2002). These beliefs are shaped by socialization experiences, cultural messages, and feedback from significant others such as parents and teachers. When girls perceive science as irrelevant or misaligned with their identities, they are less likely to value it or envision a future in a science-related field (Wigfield et al., 2015).

Gendered beliefs about intellectual capabilities and career suitability influence these values from an early age. Girls may be steered toward professions perceived as more nurturing or interpersonal, while boys are encouraged to explore analytical and technical domains. This divergence in encouragement and expectations leads to stratified academic pathways (Beilock et al., 2010).

Feminist Pedagogy: Feminist Pedagogy advocates for a transformative educational approach that challenges traditional power hierarchies and values the voices and experiences of all learners (Shrewsbury, 1993). It emphasizes inclusivity, dialogue, and the co-construction of knowledge. Within science education, feminist pedagogy calls for a shift from competitive, lecture-driven environments to collaborative, inquiry-based learning that integrates students' lived experiences.

This pedagogical shift includes re-examining the curriculum to highlight diverse scientific contributors and embedding science within real-world, socially relevant contexts

(Moote et al., 2020). Such approaches validate students' identities, promote engagement, and foster a sense of belonging in science classrooms.

Literature Review

Gender Differences in Science Engagement: Student engagement in science encompasses emotional, behavioural, and cognitive involvement in learning activities. Numerous studies indicate that while boys and girls demonstrate comparable capabilities, girls report lower interest and participation in science activities, especially during adolescence (Archer et al., 2013). This disengagement correlates with societal influences that depict science as a masculine pursuit, and educational materials that lack representation of women in science roles.

Brotman and Moore (2008) emphasize that science curricula often reflect a narrow view of the discipline- one that prioritizes abstract, individualistic, and competitive tasks. This design may not resonate with many female students who express a preference for collaborative and contextually meaningful learning. The absence of relatable role models further reinforces disconnection.

Performance Gaps: Despite equal performance in many standardized tests, gender-based performance gaps emerge in disciplines such as physics and advanced mathematics, where male students often outperform females (Sadler et al., 2012). Contributing factors include stereotype threat, the fear of confirming negative stereotypes, which undermines performance under pressure.

Teachers' perceptions can also inadvertently influence these outcomes. Studies have shown that teachers tend to hold higher expectations for boys in science and math, often interpreting the same behaviours or achievements more favourably when exhibited by male students (Tiedemann, 2002). This differential treatment contributes to inequitable classroom experiences and outcomes.

Intersectionality in Science Education Crenshaw's (1991) theory of intersectionality underscores the importance of considering multiple, overlapping identities in educational analysis. Girls who belong to marginalized racial, socio-economic, or linguistic communities face additional barriers in science education. These students may experience compounded discrimination, lower resource access, and culturally unresponsive teaching.

Effective equity strategies must account for this complexity by addressing the unique needs of diverse learners. One-size-fits-all reforms risk perpetuating exclusion if they fail to address the layered realities of students' lives.

Barriers to Gender Equity in Science

Societal Stereotypes and Biases: Pervasive gender stereotypes label science as a male-dominated field. These societal beliefs influence children's self-concept and career aspirations. Nosek et al. (2009) found that countries with stronger implicit gender-science biases exhibited wider gender gaps in science achievement. Similarly, Kabeer (1999) discusses how systemic barriers, such as socio-cultural expectations and lack of access to resources, affect the opportunities available to women in STEM fields, reinforcing gendered career aspirations and interests.

Curriculum and Pedagogy: The content and delivery of science education can either invite or alienate students. Traditional curricula that prioritize abstract theoretical concepts over real-world applications may deter girls from fully engaging with the subject. Science, often portrayed as an abstract and solitary pursuit, can seem disconnected from the social and collaborative environments that many female students prefer. Integrating diverse perspectives into the curriculum- by emphasizing the contributions of women in science and highlighting the practical applications of scientific discoveries- can make science more inclusive, relatable, and meaningful (Brotman & Moore, 2008). For instance, science topics could be framed in the context of societal challenges such as climate change, healthcare, or social justice, which might resonate more with female students. Additionally, ensuring that the curriculum reflects a wide range of scientific disciplines- such as environmental science, health sciences, and social sciences can provide opportunities for girls to see themselves in varied scientific roles, thus promoting a more balanced and engaging approach to science education.

Teacher Expectations and Attitudes: Implicit biases among educators can significantly influence how students are treated and evaluated, often in ways that perpetuate gender disparities in science education. When teachers unconsciously hold the belief that boys are inherently better at science or more capable in STEM subjects, they may provide them with more opportunities to engage in challenging tasks or provide them with more positive reinforcement. This differential treatment can lead to boys being given more chances to demonstrate their abilities, which in turn reinforces their confidence and interest in the subject. On the other hand, girls who do not receive the same level of encouragement or recognition

may feel that their contributions are less valued, leading to disengagement from science and a lack of confidence in their abilities (Tiedemann, 2002). The impact of teacher expectations is not just about what is said, it is also about what is unsaid- subtle cues, such as praise, or the allocation of resources and attention, which can shape students' attitudes toward science. Addressing these biases through teacher training and awareness programs is crucial for ensuring that all students, regardless of gender, receive equitable support in the classroom. By fostering an inclusive and supportive environment, teachers can help narrow the gender gap in science achievement.

Strategies to Promote Gender Equity

Inclusive Curriculum Design: An inclusive science curriculum should represent the contributions of women and other underrepresented groups in science. It should emphasize real-world applications and allow students to explore the societal impact of scientific discoveries. Examples from healthcare, environmental sustainability, and technology can illustrate science's relevance and accessibility.

Gender-Sensitive Pedagogy: Teachers need ongoing professional development to cultivate gender-aware teaching practices. Training should focus on recognizing biases, encouraging equitable participation, and employing varied instructional strategies such as inquiry-based learning and cooperative group work.

Mentorship and Role Models: Exposure to successful female scientists—whether through school visits, virtual talks, or media—can challenge stereotypes and inspire students. Dasgupta (2011) suggests that positive role models play a crucial role in countering negative stereotypes, particularly in domains like science, by providing students with examples of successful women in the field. Mentorship programs, particularly for underrepresented students, can nurture talent and sustain interest in science.

Community and Parental Engagement: Efforts to promote science engagement must involve parents and communities. Outreach programs that educate families about science careers and create supportive home environments can reinforce classroom learning. Community-led STEM activities can provide experiential learning opportunities that spark interest and build confidence.

Policy Implications: Systemic change requires robust policy support. Governments and educational bodies must invest in gender-equity initiatives, mandate inclusive curricula, and

establish metrics to monitor progress. Policies should support schools in implementing equity-oriented reforms and hold institutions accountable for measurable outcomes.

Additionally, national STEM strategies should integrate gender analysis and prioritize funding for research on effective interventions. Collaboration between educational institutions, industry partners, and community organizations is vital to creating pathways for all students to thrive in science.

Conclusion: Bridging gender gaps in science education is both an educational imperative and a matter of social justice. By integrating insights from social cognitive theory, expectancy-value theory, and feminist pedagogy, educators and policymakers can dismantle the systemic barriers that limit girls' engagement and performance in science. Implementing inclusive curricula, gender-sensitive teaching practices, and supportive mentorship structures can create environments where all students feel empowered to succeed.

Fostering equity in science is essential for cultivating a diverse and innovative future workforce capable of addressing global challenges. A commitment to sustained, intersectional, and evidence-based strategies will ensure that science education becomes a space of opportunity for every learner.

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A STUDY OF WORK LIFE BALANCE IN RELATION TO PERCEIVED SOCIAL SUPPORT AMONG SECONDARY SCHOOL TEACHERS OF CHANDIGARH

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Abstract

The study was undertaken to investigate the difference in work-life balance and perceived social support among government and private school teachers. Tools of work-life balance and perceived social support developed by the investigator were used for data collection. A sample of 90 secondary school teachers (45 government and 45 private) was collected through a random sampling technique. The self-developed questionnaires of work-life balance and perceived social support were used for data collection by investigator. The result of the study revealed no significant difference in work life balance among government and private school teachers and among male and female school teachers. It is also indicated that there is the significant difference in perceived social support among the government and private school teachers, but there is no significant difference in the perceived social support among male and female teachers. Significant positive relationship was found in work-life balance with perceived social support.

Keywords: *Work-life balance perceived social support, school teachers.*

Introduction

The role and influence of teachers in an educational institution is very significant. Due to the continual modifications and demands in the educational system, teachers feel under pressure and are experiencing more stress. Teachers who are well-supported and have a healthy work-life balance are more likely to be effective educators, leading to improve students' outcomes. The need of society is changing because of rising social, economic, and educational values. Numerous effects on both the personal and professional spheres result from this life-style modifications (Risti et al., 2009). Teachers deal with stress and work-related issues just like other professions (Khan et al., 2014). To maintain a balance in the work and domestic duties is a major difficulty for the teaching community. Besides the duty in school, teachers have extra workloads like the completion of the record of students' activities, assignments, projects, and worksheets of different subjects, to maintain their personal data for scholarships, etc. At home, they are busy in getting ready for the next day so they can do their jobs well. Work life balance combines two tasks that are mostly performed in the workplace and in the family. These two responsibilities frequently conflict with one another's duties and have a direct impact on both life and work performance (Clarke et al., 2004). According to Brough and Pear (2004), social support encompasses both family-related and work-related assistance. Support from co-

workers and superiors is considered work-related social support for an employee, while support from parents, spouses, kids, friends, or close companions is considered personal social support.

Work Life Balance

Work-life balance refers to how people are engaged in and content in different roles; as such, it is an idea that means identifying appropriate priorities between work and life, such as family and career. Hence, it describes the capacity of the workers to uphold a sound balance between their professional obligations and personal duties (Kar & Misra, 2013). The balance between a person's family and work obligations is called work-life balance. Sustaining mental well-being, enhancing familial bonds, and raising life satisfaction all depend on maintaining a good work-life balance (Hafeez & Akbar, 2015).

People are the most important factor in an organization's success. Family conflict arises when employees' stress levels from work spill over into their homes. By encouraging a work atmosphere and flexible scheduling, organisations try to lessen this tension by promoting the integration of work and family responsibilities (Agha, 2017). It is crucial to consider WLB issues and create supportive solutions to combine work and family challenges (Friedman & Greenhaus 2000). It is very difficult for a skilled teacher to provide the highest quality of teaching and generate good students if they are stressed, overworked, unhappy with their jobs, or have an unbalanced work-family life (Burke, 2002). The focus is now on maintaining a strong WLB to boost employee engagement, productivity, and satisfaction due to workforce diversity and the evolving reality of multinational organisations. Working people's personal and professional lives are adversely affected by work-life balance issues. Thus, it is crucial to strike the right balance between job and family life.

Perceived Social Support

Human health depends on social support. These supportive resources can be intangible (like personal guidance), physical (like financial assistance), emotional (like nurturing), informative (like advice), or companionship (like a sense of belonging). Without these, we are unable to lead balanced social, psychological, and emotional lives. Family, friends, neighbours, and other community members together form the social support system, which helps people emotionally, financially, physically, and psychologically. In social support groups, people can have fun, talk about their lives and jokes, remain in touch, and find support.

The idea of perceived social support can be defined as a person's perception that friends, family, and other community members love and support them and that they are part of a network of support and communication (Cobb, 1976). It also expresses how many people that a person believes are available to provide help. Thus, perceived social support can be described as the amount or kind of shared groups that neighbouring community members have, as perceived by the individual. To manage the stress and demands of their jobs, school teachers need social assistance just like everyone else. Colleagues, family, friends, and other people may provide the support. But the type and level of social support that individuals get can differ, which might affect their happiness at work and overall well-being.

Review of Literature

In the present study, the researcher will find the relationship between the work-life balance and perceived social support of secondary school teachers. The related literature with this study is given below:

Work Life Balance and Perceived Social Support

Mayya et al. (2021) surveyed work-life balance and gender differences: a study of college and university teachers from Karnataka. They revealed work-life balance was associated with gender, age, and science discipline after adjusting for the effect of other demographic variables. The work-life balance of faculty in the age group less than 50 years and females needs specific attention. Aras et al. (2022) examined the contribution of social support to work-life balance for working women during work from home. The relationship between social support and work-life balance has a positive direction. Women in the workforce will have a better work-life balance if they receive more social support. This study also shows that the work-life balance of working women who have two children is in the high category, and the women in the age group of more than 40 years is in the high category. Employees' perceptions of control over work and family issues were found to directly benefit from supportive behaviours, especially flexible scheduling and encouraging management. The main thing is that social support, whether it be related to work or family, has a favourable effect on both roles since it facilitates the sharing of thoughts and problems that arise from both work and personal activities. It is the understanding of supervisors and spouses to build and modify work-family balance variations (Erdwins et al., 2001). Numerous research revealed a positive correlation between perceived social support and work-life balance (Abendroth & Dulk, 2011; Guest, 2009; McDowell et al., 2005). Work-life balance is the idea of appropriately balancing work, such as ambition and

career, lifestyle, relaxation, well-being, family, spiritual development and introspection (Boswell et al., 2004). Perceived social support also positively affects employees' attitudes and insights about work-life balance, which raises employee satisfaction (Rani et al., 2011).

Objectives

1. To study the difference in the extent of work life balance among secondary school teachers in government and private schools.

2. To study the difference in work life balance among male and female secondary school teachers.

3. To study the difference in the extent of perceived social support among secondary school teachers in government and private schools.

4. To study the difference in the perceived social support among male and female secondary school teachers.

5. To study the relationship between work life balance and perceived social support among secondary school teachers.

Hypotheses

1. There is no significant difference in the extent of work life balance among secondary school teachers in government and private schools.

2. There is no significant difference in work life balance among male and female secondary school teachers.

3. There is no significant difference in the extent of perceived social support among secondary school teachers in government and private schools.

4. There is no significant difference in the perceived social support among male and female teachers.

5. There is no significant relationship between work life balance and perceived social support among secondary school teachers.

Research Method

Before data collection in schools, permission was taken from the DEO office in Chandigarh (UT). All the participants were informed about the purpose, significance, and implications of the study. An informed consent was obtained before administering the scales. The teachers were approached during duty hours and given the questionnaires for data collection in free periods

and tea breaks. Keeping in mind the ethical principles, the teachers were informed that all the information will be kept confidential and used for research purpose only.

Sample

The sample of this study comprised 90 school teachers in different settings (45 in Government and 45 in private) schools of Chandigarh. From the Government sector, 25 female and 20 male teachers and from the private sector, 30 female and 15 male teachers were taken into consideration in the age group from 25 to 58. The descriptive research method was used in the present study, and the simple random sampling technique was used for selecting the sample.

Tools

Two different self-prepared questionnaires were used by the researcher on both variables, work-life balance and perceived social support. For the data collection, two types of information were collected. In the first part, there was a personal and demographic information sheet regarding gender, age, work experience, marital status, family type and travelling distance indicated. The second part contained 30 statements altogether to measure the work-life balance of teachers. The perceived social support contained 28 statements, and the scale is divided into two dimensions (i) Support from family/friends and (ii) support from colleagues. The response categories were in the form of a 5-point Likert scale (Never, Rarely, Sometimes, Frequently, Always) for both scales.

Result

For testing hypotheses, the researcher used descriptive statistics, i.e. mean and SD, as well as parametric tests, i.e., independent t-test and Pearson correlation.

Difference in the extent of work life balance among secondary school teachers in government and private schools: To study the difference in the extent of work life balance among secondary school teachers in government and private schools mean, standard deviation and t-value were worked out and the values are given in table 1 below:

Table 1: Work Life Balance based on different Sectors among Secondary School Teachers.

Variable	Sector of work	N	Mean	Standard Deviation	t-value
Work life balance	Government	45	116.87	17.926	1.062 (NS)
	Private	45	113.20	14.682	

NS means non-significant

In the table 1, the calculated t-value is 1.062 between government and private school teachers, which is non-significant (p>0.05). This shows that there is no significant difference in work-life balance among government and private school teachers, so the researcher fails to reject the null hypothesis which states that 'There is no significant difference in the extent of work life balance among secondary school teachers in government and private schools'.

Difference in work life balance among male and female secondary school teachers: To study the difference in work life balance among male and female secondary school teachers mean, standard deviation and t-value were worked out and the values are given in table 2 below:

Table 2: Work Life Balance Based on Gender among Secondary School Teachers

Variable	Gender	N	Mean	Standard Deviation	t-value
Work life balance	Male	35	117.97	15.691	-1.382 (NS)
	Female	55	113.16	16.701	

NS means non-significant

Table 2 indicate that the calculated t-value is -1.382 between male and female secondary school teachers, which non-significant (r>0.05). This reveals no significant difference in work-life balance among male and female secondary school teachers, so the researcher fails to reject the null hypothesis which states that 'There is no significant difference in work life balance among male and female secondary school teachers'.

Difference in the extent of perceived social support among secondary school teachers in government and private schools: To study the difference in the extent of perceived social support among secondary school teachers in government and private schools mean, standard deviation and t-value were worked out and the values are given in table 3 below:

Table 3: Perceived Social Support based on different Sectors among Secondary School Teachers.

Variables	Sector of work	N	Mean	Standard Deviation	t-value
Family Support	Government	45	61.73	8.398	2.288*
	Private	45	58.11	6.499	
Colleagues Support	Government	45	54.56	8.430	3.678**
	Private	45	48.82	6.188	
Total	Government	45	116.29	14.806	3.362**
	Private	45	106.93	11.373	

**Significant at 0.05 level of significance, ** Significant at 0.01 level of significance*

Table 3 reveals that for government and private school teachers in the family support i.e., first dimension of perceived social support the values of mean are 61.73 and 58.11 respectively. The calculated t-value is 2.288, which is significant ($p<0.05$). The values of mean for the government and private teachers in the colleague's support, i.e., second dimension of perceived social support are 54.56 and 48.82 respectively. The calculated t-value is 3.678 which is significant ($p<0.01$). In the total perceived social support, the mean value of government school teachers i.e. 116.29 is higher than the private school teachers i.e. 106.93 as the t-value is 3.362, which is significant ($p<0.01$). It means that there is also significant difference among the government and private school teachers in perceived social support. Therefore, the null hypothesis i.e. 'There is no significant difference in the extent of perceived social support among secondary school teachers in government and private school,' is rejected.

Difference in the perceived social support among male and female secondary school teachers: To study the difference in the perceived social support among male and female secondary school teachers mean, standard deviation and t-value were worked out and the values are given in table 4 below:

Table 4: Perceived social support based on gender among secondary school teachers.

Variables	Gender	N	Mean	Standard Deviation	t-value
Family Support	Male	35	60.23	7.75	-0.30 (NS)
	Female	55	59.73	7.70	
Colleagues Support	Male	35	51.54	7.01	0.13 (NS)
	Female	55	51.78	8.47	
Total	Male	35	111.77	13.13	-0.08 (NS)
	Female	55	111.51	14.55	

NS means non-significant

Table 4 shows that for male and female teachers in the family support i.e., first dimension of perceived social support the calculated t-value is -0.30 which is non-significant ($p>0.05$). Thus there is no significant difference in the family support of male and female secondary school teachers. For colleague support i.e. second dimension of perceived social support the t-value is 0.13, which is non-significant ($p>0.05$). So there is no significant difference in colleague support of male and female secondary school teachers. In the total perceived social support, the t-value is -0.08, which is not significant ($p>0/05$), Thus there is no significant difference in perceived social support of male and female secondary school teachers. Therefore, the

researcher fails to reject the null hypothesis which states that 'There is no significant difference in the perceived social support among male and female teachers.'

Relationship between work life balance and perceived social support among secondary school teachers: To study the relationship between work life balance and perceived social support among secondary school teachers Pearson's coefficient of correlation was worked out and the values are given in table 5 below:

Table 5: Relationship between Work Life Balance and Perceived Social Support among Secondary School Teachers (N=90).

Variables	Family Support	Colleagues Support	Total Perceived Social support
Work life balance	0.719*	0.529*	0.696*

**Significant at 0.01 level of significance*

Table 5 indicate that the work-life balance with perceived social support was found to be moderately positive and statistically significant (r=0.696, p=0.001). This also shows that the correlation of work-life balance with family support (r=0.719, p=0.001) and with colleague support (r=0.529, p=0.001) was found to be moderately positive and statistically significant. It means that an increase in perceived social support (i.e., family support and colleague support) would lead to an increase in work-life balance among secondary school teachers. Therefore, the null hypothesis, i.e., 'There is no significant relationship between work-life balance and perceived social support among secondary school teachers,' is rejected.

Conclusion and Implications

It is concluded that there is no significant difference in work life balance among government and private school teachers and in male and female school teachers. It is also indicated that there is the significant difference in perceived social support (family support as well as colleague support) among the government and private school teachers, but there is no significant difference in the perceived social support (family support as well as colleague support) among male and female teachers. This study also shows that there is a moderately positive and statistically significant correlation in work-life balance with perceived social support, which supports the results of the study done by Aras et al. (2022), who examined the relationship between social support and work-life balance in a positive direction, and with the study of Umma and Zahana (2020), who found the strong positive relationship found between social support and work-life balance. Other studies also revealed a positive correlation between

perceived social support and work-life balance (Abendroth & Dulk, 2011; Guest, 2009; McDowell et al., 2005). So, it is concluded that perceived social support affects a lot in balancing work and life, not only in education but in all disciplines of life. When teachers feel appreciated and supported, the school climate is more cooperative and cheerful. All members of the school community—students, faculty, and administrators benefit from this healthy environment.

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THE LEVEL OF HAPPINESS AMONG SECONDARY SCHOOL STUDENTS: A STUDY IN RELATION TO GENDER AND LOCALE

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Abstract

The study was conducted to investigate the level of happiness among secondary school students, specifically examining whether significant differences exist based on demographic variables: gender (male vs. female) and locale (rural vs. urban). The research employed a descriptive-cum-survey method on a sample of 200 Class 9 students from the Patiala district, India. Data on happiness were collected using Happiness Scale by Kaur and Kaur (2023). The findings revealed high level of happiness among the students, results also indicated no significant difference in the level of happiness when differentiated by either gender or locale, suggesting a universal nature of emotional well-being in this age group within the studied context. The study advocates for focusing on universal factors that contribute to happiness, such as school climate and supportive relationships, rather than demographic-specific interventions.

Keywords: *Happiness, school students, gender locale, educational implications, demographic variables*

Introduction

The level of happiness in school students is an increasingly recognized measure of holistic well-being, influencing everything from social development and mental health to academic performance. Rooted in positive psychology, happiness is defined here as a subjective state encompassing frequent positive emotions, overall life satisfaction, and a sense of meaning. According to Myers and Diener (1995), happiness is "the experience of joy, contentment, or positive well-being, combined with a sense that one's life is good, meaningful, and worthwhile." "Whoever lives inside a person's skin" should be the ultimate arbiter of happiness as it is a subjective concept. Hazarika and Begum (2024) assert that happiness is fundamentally a personal experience that differs from person to person. In essence, a person's feelings, viewpoints, and thoughts at any particular moment determine their level of happiness. Every individual is distinct and expresses happiness in different ways depending on their experiences, level of fulfillment, and viewpoint. Happiness is a good feeling that is essential to everyone's health.

In the modern educational environment, understanding student well-being is paramount. A positive emotional state is intrinsically linked to factors like resilience, motivation, and engagement, all of which are essential for navigating the challenges of secondary education.

This research, drawn from a larger study on happiness and academic achievement, focuses specifically on evaluating the influence of two key demographic variables-

gender and locale (rural vs. urban) on the subjective level of happiness among adolescents. By testing for variations across these subgroups, educators can ascertain the need for targeted interventions or validate the efficacy of universal well-being programs.

Review of Related Literature

Happiness and Gender

The consensus in cross-cultural research regarding the influence of gender on happiness remains complex. Many studies, particularly in education, have concluded that there is no significant difference in the mean happiness scores between male and female students (Hazarika & Begum, 2024; Aziz & Talal, 2023; Prabodhan & Kalamb, 2022; Banupriya & Rajan, 2019). This suggests that fundamental drivers of subjective well-being- such as self-esteem and quality of social relationships- may be universal, regardless of gender. However, Lesinskiene (2023) reported that male students sometimes report slightly higher levels of happiness, which is often attributed to cultural or societal expectations. Whereas Namazi (2022) reported that female students enjoyed more happiness as compared to their male counterparts.

Happiness and Locale (Rural vs. Urban)

The literature on locale's impact on happiness is also mixed. Some researchers (e.g., Bhutia & Sandhya, 2024; Pakira & Mohakud, 2017; Vaghela, 2015) have found significant differences, often attributing these to disparities in access to resources, infrastructural development, and recreational opportunities between urban and rural settings. Conversely, many studies emphasize that the quality of the school environment- a sense of safety, positive teacher-student relationships, and strong peer networks- are the most crucial influencers. When these psychological factors are successfully managed, the geographic location of the school tends to lose its predictive power over a student's emotional well-being (Mertoglu, 2020).

Objectives of the Study

1. To determine the overall mean level of happiness among secondary school students.
2. To analyze the level of happiness among school students with reference to their gender.
3. To analyze the level of happiness among school students in reference to their locale (rural vs. urban).

Hypotheses

1. There is no significant difference in the level of happiness of school students with reference to gender.
2. There is significant difference in the level of happiness of school students with reference to locale.

Methodology

Research Design

A descriptive-cum-survey method was adopted to collect and analyze data on the existing level of happiness among the specified student population. This method is suitable for gathering factual information and drawing systematic comparisons between predefined subgroups.

Sample

The target population was secondary school students affiliated with the Punjab School Education Board. A random sampling technique was used to select a total of 200 students from Class 9 in the Patiala district.

The sample was deliberately structured into equal subgroups:

Sub-Group	N	Rural	Urban
Boys	100	50	50
Girls	100	50	50
Total	200	100	100

Tool

Happiness Scale developed by Kaur and Kaur (2023). This scale, comprising 37 items, provided a quantitative measure of the students' subjective well-being across various dimensions.

Statistical Techniques

The collected data was analyzed using inferential statistics to test the null hypotheses:

1. Mean and Standard Deviation were used for descriptive analysis of the data.
2. t-test was applied to determine the significance of the difference between the mean happiness scores of the gender and locale subgroups.

Analysis and Interpretation of Data

This section presents the statistical results concerning the happiness levels of the students and tests the stated null hypotheses.

Overall Level of Happiness

The mean happiness score for the entire sample of 200 secondary school students was found to be 152.69 with a standard deviation of 18.99. This indicates a generally high level of happiness among the students, suggesting a baseline of positive subjective well-being across the cohort.

Happiness with Reference to Gender

To investigate the significance of difference in happiness scores of boys and girls mean, standard deviation and t-test were applied and the values are given in table 1 below:

Table 1: Difference in Happiness of Boys and Girls

Group	N	Mean	Standard Deviation	t-value
Boys	100	152.15	19.80	-0.163 (NS)
Girls	100	152.59	18.31	

NS means non-significant

The analysis shows a minimal difference between the mean scores for boys (152.15) and girls (152.59). The calculated t-value of -0.163 is substantially lower than the critical value required for significance. Consequently, the null hypothesis which states that, "There is no significant difference in the level of happiness of school students with reference to gender'' is accepted. The study concludes that gender does not significantly differentiate the level of happiness among secondary school students in this sample. This finding is well supported by the studies earlier conducted by Hazarika and Begum (2024), Aziz and Talal (2023), Prabodhan and Kalamb (2022), and Banupriya and Rajan (2019).

Happiness with Reference to Locale

To investigate the significance of difference in happiness scores of rural and urban students mean, standard deviation and t-test were applied and the values are given in table 2 below:

Table 2: Difference in Happiness of Rural and Urban Students

Group	N	Mean	Standard Deviation	t-value
Rural Students	100	154.07	18.56	0.55 (NS)
Urban Students	100	151.30	19.33	

NS means non-significant

The difference between the mean scores of rural students (154.07) and urban students (151.30) is also negligible. The calculated t-value of 0.55 is not statistically significant. Therefore, the null hypothesis which states that, "There is significant difference in the level of happiness of school students with reference to locale'' is accepted. The data suggests that geographic locale (rural vs. urban) does not significantly impact the level of happiness among the students. This finding is in contradiction with the findings of studies conducted by Bhutia and Sandhya (2024), Pakira and Mohakud (2017), and Vaghela, 2015.

Discussion

The findings of this research strongly support the notion that fundamental emotional well-being in adolescence is a universal phenomenon, less susceptible to basic demographic partitioning than other educational outcomes. The primary findings confirm the universality of happiness in this adolescent cohort, as no significant difference was observed across gender or locale.

This suggests that the essential drivers of subjective well-being, such as positive school climate and supportive social relationships, are consistently effective regardless of whether the school is rural or urban, or whether the student is male or female. This finding supports the literature which posits that happiness is driven more by psychological factors than basic demographic stratification. Importantly, this stability across subgroups provides an equitable foundation for academic pursuits, validating the strategy of implementing universal well-being programs in schools.

Implications of Gender Neutrality in Happiness

The acceptance of Hypothesis 1 confirms the trend observed in multiple international studies, suggesting that the psychological architecture of happiness- which relies on factors like self-worth, optimism, and social integration- is largely invariant between male and female students at this stage of development. This suggests that school counselling and emotional support services do not necessarily need to be fundamentally gender-specific, but rather universally accessible and focused on common adolescent needs.

Implications of Locale Neutrality in Happiness

The acceptance of Hypothesis 2 is particularly noteworthy. While socioeconomic and resource differences often exist between rural and urban settings, this study indicates that these differences do not translate into a significant disparity in the student's subjective feeling of happiness. This is a positive sign for the educational system in the region, suggesting successful efforts to cultivate a supportive school climate regardless of the school's location. The factors that truly drive happiness- the quality of interpersonal relationships, the feeling of safety, and a sense of belonging- are successfully cultivated in both environments.

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EXPLORING THE ROLE OF GRAPHIC ORGANIZERS IN CREATIVE WRITING: A SYSTEMATIC REVIEW

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Abstract

The present study was conducted to review existing research on graphic organizers in writing and to explore how these tools support idea generation, organization, and creativity in students' compositions. A systematic methodology was followed in line with PRISMA guidelines. Records were identified through databases and manual searches, screened for relevance, and assessed using clear inclusion and exclusion criteria. After removing duplicates and irrelevant studies, a total of 50 studies were included in the review. While most focused on general writing improvement, a smaller subset specifically addressed creative writing. Data were analyzed thematically to capture recurring patterns across the studies. The review identified four key themes: strengthening writing proficiency, stimulating idea flow, organizing writing structure, and fostering creative expression. Findings indicate that graphic organizers enhance coherence and clarity by reducing cognitive load, provide visual scaffolds to stimulate idea generation. They also foster originality and elaboration, enabling students to balance imagination with logical progression in writing.

Keywords*: Graphic organizers, creative writing, idea generation, writing proficiency, systematic review*

Introduction

Education is the cornerstone of individual growth and societal progress (Kaustubh, 2025). It serves as a vital tool for nurturing creativity, critical thinking and problem-solving skills. In the rapidly changing landscape of the 21st century, education must move beyond the traditional transmission of factual knowledge and instead focus on cultivating learners' abilities to generate ideas, express themselves effectively and engage deeply with the world around them. Among various forms of expression fostered through education, writing holds a central place as it bridges thought and communication. Within the domain of writing, creative writing is particularly significant as it nurtures imagination, originality and emotional engagement. Through writing, we can articulate our thoughts and emotions effectively using appropriate vocabulary, structure, and coherence. Writing can also enhance creativity by allowing us to explore new ideas and concepts, resulting in engaging and captivating pieces (Fitria, 2024). However, creative writing remains one of the most challenging skills for students to master due to difficulties in generating ideas, structuring narratives, and maintaining coherence.

The National Education Policy (2020) places a strong emphasis on fostering creativity, innovation, and critical thinking in classrooms. It calls for a transformative shift in the teaching-learning process, moving away from rote memorization toward experiential, holistic, and

competency-based education that is student-centered and participatory (Report of National Educational Policy, 2020). In this framework, modern teaching techniques, visual aids, and digital resources play a pivotal role in creating interactive and engaging learning environments. This vision is particularly significant for writing instruction, as it encourages pedagogical strategies that not only strengthen students' linguistic competence but also nurture their creative expression and problem-solving skills. One innovative tool that aligns closely with The National Education Policy (2020)'s vision is the graphic organizer. Graphic organizers are visual teaching and learning tools designed to represent relationships between concepts and ideas in an organized, structured format (Ayverdi et al., 2014). They help translate abstract or complex ideas into clear visual patterns, making it easier for learners to understand, process, and retain information. Defined as visual representations of text organization, graphic organizers show how key concepts interconnect and support comprehension and organization (Barton-Arwood & Little, 2013; Gajria et al., 2007).

In the context of writing, particularly creative writing, graphic organizers play a crucial role in reducing the cognitive load associated with generating and organizing ideas. For students who struggle to express themselves, these tools act as scaffolds, providing a structured pathway for brainstorming, planning, and drafting their work (Altun, 2018). By visually breaking down complex narrative elements- such as plot, setting, character development, and themes- into manageable components, graphic organizers empower students to structure their thoughts more coherently. This process not only enhances their ability to create cohesive narratives but also builds their confidence as writers (Adler, 2018).

Research indicates that when graphic organizers are combined with structured writing frameworks, they result in richer, more engaging, and logically sequenced compositions (Tayib, 2021). In creative writing tasks, they can be particularly useful for activities such as brainstorming story ideas, mapping character relationships, visualizing conflict and resolution, or designing the sequence of events in a story. By making abstract ideas visible, graphic organizers stimulate imagination while providing a clear framework for expression. Thus, they serve as a bridge between students' creative impulses and their ability to communicate those ideas effectively, fulfilling National Educational Policy (2020)'s goal of cultivating both creativity and competence in learners.

Graphic organizers serve as powerful pedagogical tools for fostering creative expression in writing, offering a structured yet flexible framework that supports both idea generation and organization. They provide students with a visual structure to brainstorm, connect, and refine ideas, thus transforming the often overwhelming task of writing into a more accessible and

engaging process. From a theoretical perspective, several learning theories support the use of graphic organizers in enhancing creativity. Ausubel's Meaningful Learning Theory emphasizes that learning becomes deeper and more meaningful when new ideas are connected to existing knowledge structures. By visually mapping these connections, graphic organizers enable writers to create richer and more original compositions through meaningful associations (Ausubel, 1968). Similarly, Paivio's Dual Coding Theory highlights the cognitive benefits of integrating visual and verbal information. When students engage with both textual and visual representations of their ideas, it activates divergent thinking processes, which are essential for creativity in writing (Paivio, 1991). This dual processing not only strengthens memory and understanding but also inspires students to approach writing from multiple perspectives. Furthermore, Sweller's Cognitive Load Theory explains that graphic organizers reduce unnecessary cognitive strain by simplifying complex information. With the organizational burden minimized, writers can direct their mental energy toward innovation and imaginative expression, rather than struggling to structure their thoughts (Sweller, 1988). Collectively, these theories provide a strong conceptual foundation for employing graphic organizers as tools to enhance both creativity and fluency in writing.

The significance of creative writing lies in its ability to develop multiple dimensions of creativity. According to Torrance (1974), creativity comprises four core elements: fluency (the ability to generate multiple ideas), flexibility (the capacity to view problems or themes from different angles), originality (producing unique and novel ideas), and elaboration (adding richness, depth, and detail to ideas). Graphic organizers naturally support the development of these elements. For instance, a brainstorming web promotes fluency by encouraging rapid idea generation without judgment. Venn diagrams foster flexibility by visually comparing and contrasting ideas, allowing students to see connections and differences clearly. Visual mapping techniques help students make unique and unexpected associations, thereby nurturing originality. Similarly, structured planning tools such as story maps or sequence charts encourage elaboration by guiding students to expand and refine their initial ideas into well-developed narratives.

Research further reinforces these benefits. Studies have demonstrated that semantic mapping, a type of graphic organizer, assists students in organizing their thoughts, which in turn leads to more focused and coherent writing (Drapeau, 1998; Harrington et al., 1998). By making abstract ideas visible and manageable, graphic organizers empower students to explore their creative potential while developing the essential skills of clarity, structure, and imaginative expression. This makes them indispensable tools in contemporary writing

pedagogy, especially in classrooms aiming to nurture both creativity and competence in alignment with 21st-century educational goals.

Research across various disciplines has consistently confirmed the effectiveness of graphic organizers as instructional tools for enhancing student learning outcomes. Studies have demonstrated their positive impact in subjects such as Home Economics (Alshatti, 2012), Science (Condidorio, 2010), Science and Technology (Ayverdi et al., 2014), Mathematics (Githua & Nyabwa, 2008), Writing (Sundeen, 2007), and Health Education (Kools et al., 2006). Importantly, graphic organizers have also been shown to benefit students with learning disabilities, helping them overcome barriers to understanding and expression by providing structured visual frameworks for organizing information (Dexter & Hughes, 2011). In the context of writing instruction, research has consistently highlighted the role of graphic organizers in improving essential writing skills such as organization, coherence, and clarity (Lovitt, 1994). By breaking down complex writing tasks into manageable steps, these tools enable students to plan their ideas systematically and construct well-structured essays or narratives. For many learners, this process reduces anxiety and confusion, offering a clear pathway to success.

However, while a substantial body of research, comprising more than 25 studies have examined the role of graphic organizers in general writing improvement, far fewer studies have focused specifically on creative writing. This represents a notable research gap. Unlike conventional writing, which often prioritizes clarity, structure, and grammatical correctness, creative writing involves a unique blend of imagination, innovation, and personal expression. It requires writers to take intellectual risks, explore unconventional ideas, and develop an authentic voice. Graphic organizers have the potential to support this process by providing structure without stifling creativity, yet empirical studies examining their role in fostering imaginative and expressive dimensions of writing remain limited.

Addressing this gap is critical, as creative writing plays a vital role in nurturing higher-order thinking skills and emotional intelligence. Further research in this area could deepen our understanding of how visual organizational tools can simultaneously provide scaffolding and inspire freedom, ultimately empowering students to become more confident and innovative writers.

For example, in narrative writing, a story map enables students to visualize the sequence of events, develop compelling plots, and create well-rounded characters, while mind maps can be used to generate diverse and interconnected themes for poetry and other creative genres. In multilingual contexts such as India, where students often think in one language and write in

another, visual tools become particularly valuable as they help bridge linguistic and conceptual gaps, facilitating smoother transitions between thought and expression (Report of National Educational Policy, 2020). Despite these clear benefits, many teachers remain unfamiliar with the effective integration of graphic organizers into creative writing instruction. This underscores the urgent need for professional development programs that equip educators with strategies and resources to incorporate these tools into their classrooms effectively.

The emergence of digital technologies has further expanded the possibilities for using graphic organizers in writing pedagogy. Interactive platforms such as Canva and MindMeister now allow for collaborative story mapping, real-time idea sharing, and instant feedback, fostering a participatory learning environment. These tools align closely with the National Educational Policy (2020)'s vision for technology-enabled and inclusive education, as they cater to a wide range of learning styles and can be adapted for students with diverse needs and abilities (Report of National Educational Policy, 2020). Digital graphic organizers thus serve not only as scaffolds for idea generation and organization but also as catalysts for creativity and collaboration.

Given these developments, the present review seeks to systematically synthesize research on the use of graphic organizers in writing instruction, with a particular focus on their application in creative writing. By critically examining both general writing studies and specialized investigations into imaginative expression, this paper aims to provide educators, researchers, and policymakers with evidence-based insights into best practices, existing gaps, and future directions for integrating these tools into curricula.

Ultimately, graphic organizers serve as a powerful bridge between imagination and structure, offering students the dual benefits of creative freedom and organizational clarity. Grounded in strong theoretical foundations and aligned with contemporary educational policies, they have the potential to transform writing pedagogy, enabling students to express their creativity while maintaining coherence and precision. In doing so, graphic organizers can help realize the vision of National Educational Policy (2020), nurturing a generation of learners who are not only creative and innovative but also confident and competent communicators.

Objectives of the Study

1. To review existing studies on the use of graphic organizers in writing, with a focus on creative writing.
2. To examine how graphic organizers support idea generation, organization, and creativity in students' writing.

Research Questions

1. What does the literature reveal about the role of graphic organizers in improving creative writing?
2. How do graphic organizers help students generate ideas and organize their creative writing effectively?

Methodology

This study followed a qualitative approach to synthesize existing research on the use of graphic organizers in writing, with a particular focus on creative writing. The review aimed to gather, evaluate, and interpret findings from studies conducted over the past two and a half decades to address the research questions and objectives.

- **Search Strategy**

A comprehensive literature search was conducted across multiple academic databases, including Google Scholar, ERIC, Shodhganga, and ResearchGate, to identify relevant studies. The search was carried out using keywords such as "graphic organizers," "creative writing," "writing skills," "mind maps," "story maps," "visual tools," "visualization" and "writing pedagogy."

- **Inclusion and Exclusion Criteria**

To maintain the relevance and academic rigor of this review, a carefully defined set of inclusion and exclusion criteria was applied during the selection of studies. The inclusion criteria focused on research that directly examined the use of graphic organizers in writing, with particular emphasis on studies related to creative writing. Only studies published in English and accessible in full text were considered to ensure clarity and comprehensive analysis. A wide range of scholarly sources were deemed eligible, including peer-reviewed journal articles, theses, dissertations, and conference papers, as these provide both depth and diversity of perspectives.

Conversely, the exclusion criteria eliminated studies that did not align with the core objectives of this review. Research that focused solely on reading comprehension or other language skills without a direct connection to writing was excluded. Duplicate publications were removed to avoid repetition, and studies without full text were excluded since their methods and results could not be fully evaluated.

- **Study Selection**

An initial pool of studies was identified through keyword searches. After screening titles and abstracts, only 50 studies were selected for full-text review. Of these, four to five studies

directly addressed creative writing, while the remaining studies examined the general role of graphic organizers in writing improvement. This selective process ensured a focused understanding of how graphic organizers contribute to creativity and organization in writing.

- **Data Analysis**

The selected studies were analyzed using thematic synthesis, which involved finding common patterns and grouping them into clear themes. This made it easier to organize the findings under broad areas like idea generation, organization of writing and creative expression. This approach provided a clear and systematic way to understand the evidence while bringing together insights from different types of studies.

Findings and Discussion

Thematic analysis of 50 selected studies revealed four key themes that reflect how graphic organizers influence writing development, with special emphasis on creative writing. These themes highlight the progression from basic skill enhancement to fostering creativity and originality. These themes are as follows:

Theme 1: Strengthening Writing Proficiency

Theme 2: Stimulating Idea Flow

Theme 3: Organizing Writing Structure

Theme 4: Fostering Creative Expression

Theme 1: Strengthening Writing Proficiency

The review found that graphic organizers play a vital role in improving students' overall writing proficiency, particularly by enhancing clarity, coherence, and logical sequencing of ideas (Astiantih & Akfan, 2023; Wongsasawat, & Waewchimplee, 2025).Writing proficiency goes beyond simply putting words on paper; it involves planning, organizing, and connecting ideas in a meaningful way so they can be clearly expressed (Stamper, 2006; Styati & Irawati, 2020). Graphic organizers serve as visual scaffolds, helping students simplify complex information and follow a clear pathway for expressing their thoughts (Dexter & Hughes, 2011; Rahmat, 2020). By making abstract ideas visible, these tools reduce cognitive overload, allowing learners to focus on the content and language of their writing rather than struggling with how to structure it.

The writing process i.e. pre-writing, drafting, revising, editing, and publishing itself encourages students to think critically, as it engages them in connecting, analyzing, and evaluating ideas. This process strengthens their overall thinking skills (Ibnian, 2010). For example, a student who is writing a descriptive essay might use a concept map to plan sensory details systematically, which not only improves organization but also enriches the vividness

and quality of their descriptions. This idea is strongly supported by Ausubel's Meaningful Learning Theory (1968), which highlights that learning is most effective when new knowledge connects to prior knowledge through advance organizers. Graphic organizers function in this way by linking new concepts to students' existing cognitive structures. Empirical research validates this theoretical foundation. The students who used graphic organizers during the pre-writing stage produced essays with greater coherence and logical flow compared to those who did not (Maad & Maniam, 2017). These tools are especially valuable for students with diverse learning needs, including those who struggle to organize ideas or express themselves fluently (Dexter & Hughes, 2011).

However, most existing studies have focused on general writing tasks, such as academic essays or informational texts. This leaves a research gap in understanding how graphic organizers support creative writing, where writers must balance technical proficiency with imaginative expression. Exploring this area is essential to fully realize the potential of graphic organizers in nurturing both creativity and skill in young writers.

Theme 2: Stimulating Idea Flow

The second theme highlights how graphic organizers act as stimuli for idea flow, enabling students to generate and expand ideas during the early stages of writing. Incorporating graphic organizers into the writing process is a great way to get students to think outside the box (Coffey et al., 2002; Nesbit & Adesope, 2006; Kurokami & Kojima, 2018) and to engage more willingly in writing tasks. Writing often begins with brainstorming (Moor & Caldwell, 1993; De La Paz, 1997; Routman, 1991; White, 1994), and in this context, graphic organizers have the power to bridge the gap between idea organization and written language structures (Dexter & Hughes, 2011). They help students to capture initial thoughts and branch them into multiple related ideas. As a result, brainstorming is transformed from a linear, restrictive activity into a non-linear and expansive one, where ideas can flow freely and be visually connected.

Research evidence supports that the mind map, in particular, is based on radiant thinking (Sabarun et al., 2021). It activates more functions of the brain to organize learning, especially in writing, by reflecting how the human brain processes information (AlJarf, 2009; Murley, 2007). Mind maps are used as writing assistants to brainstorm ideas. In a mind map, the hierarchies and associations flow out from a central image in a free-flowing yet organized and coherent manner (Arulselvi, 2017). Through this branching process, subsequent ideas are connected, structuring a hierarchical map. Therefore, when students used mind maps, their ideas flowed more rapidly and spontaneously. Similarly, learners who applied graphic organizers in the pre-writing phase generated a higher volume of ideas (Maad & Maniam,

2017), showing greater fluency and flexibility in their thinking. This resonates with Torrance's (1974) framework of creativity, which identifies fluency and flexibility as central dimensions of creative thought.

In addition, graphic organizers serve as external memory aids (Vekiri, 2002), allowing students to capture fleeting thoughts. By preserving these ideas visually, connections become visible and encourage the flow of new associations, often sparking unexpected directions in writing and stimulating continuous thought expansion. Thus, graphic organizers are divergent thinking tools which stimulate idea flow by reducing mental barriers, encouraging divergent thinking, and making the ideation process visible and dynamic. In this way, the relationship between individual ideas is constantly expanding, resulting in more new ideas and the emergence of original ones (Dong et al., 2021). They allow writers to move from isolated ideas to interconnected possibilities, creating a fertile ground for creativity to emerge and expand.

Theme 3: Organizing Writing Structure

The third theme highlights how graphic organizers provide crucial support in structuring students' writing, ensuring that ideas are logically arranged and that narratives flow smoothly from beginning to end. Writing, especially creative writing requires students to manage multiple interconnected elements such as characters, settings, plotlines, and themes. Without a clear organizational plan, these elements can easily become fragmented or disjointed (Tracey et al., 2025). Graphic organizers step in as a practical solution, offering visual frameworks that help learners bring order to their ideas and shape them into a coherent, impactful piece of writing. As Prasansaph (2024) explains, they provide a clear format for arranging thoughts systematically, thereby enhancing both readability and overall effectiveness.

Research consistently supports this benefit. Studies have shown that graphic organizers significantly improve not only learners' understanding of content but also their ability to produce well-structured, cohesive texts (Jones, 2020; Smith & Miller, 2018). When integrated into writing instruction, these tools strengthen students' capacity to plan and structure essays, leading to higher-quality and more coherent writing outcomes (Al Halim, 2022). Digital adaptations of these tools also show promise. For instance, Evmenova et al. (2021) found that computerized graphic organizers enhanced essay planning by giving students stronger organizational support and clearer pathways for expressing their ideas. Similarly, Pratama et al. (2021) emphasize that graphic organizers act as visual aids that both assist in teaching writing and deepen students' understanding of text structure and coherence.

The practical application of these tools can be seen in narrative writing. For example, a story map allows students to visually chart the exposition, rising action, climax, and resolution,

anchoring the narrative arc and minimizing plot gaps. This approach not only ensures consistency across the text but also reinforces students' grasp of storytelling techniques. Paivio's Dual Coding Theory (1991) provides a useful explanation for this effect: learning is strengthened when information is processed through both verbal and visual channels. By mapping characters, events, or relationships alongside written notes, learners engage in dual processing, which reinforces both memory and organizational clarity.

Empirical findings further validate this perspective. Dexter and Hughes (2011) observed that students who employed graphic organizers showed notable improvements in maintaining focus and coherence throughout their compositions. In addition, these tools ease the cognitive burden of managing multiple elements at once, freeing learners to devote more energy to developing richer content. In multilingual contexts, they also serve as bridges, helping students translate their ideas more smoothly from thought to written expression in a second language. Taken together, these findings suggest that graphic organizers are not merely aids for structure they are powerful enablers of expression, allowing students to balance organization with creativity in their writing.

Theme 4: Fostering Creative Expression

A central theme in the review highlights the role of graphic organizers in nurturing creativity and originality in student writing. Unlike conventional writing, which often emphasizes grammar, accuracy, and structural correctness, creative writing demands imagination, originality, and higher-order thinking skills (Hooker, 1997; Temizkan, 2011; Chen & Zhou, 2010). Graphic organizers strike a unique balance between freedom and structure, giving learners the confidence to explore novel ideas while still ensuring coherence in their work. By encouraging divergent thinking, they enable students to experiment with characters, plots, and themes in ways that extend beyond traditional linear writing (Arulselvi, 2017).

From a cognitive perspective, these tools support creativity by reducing the mental effort required to organize complex information. With the burden of structuring ideas eased, students can redirect their energy toward elaboration, originality, and innovation. Recent studies confirm this connection, showing that graphic organizer techniques can significantly improve students' capacity for creative thought (Mireshghi et al., 2024). Similarly, the use of graphic organizers enhanced the core dimensions of creativity identified by Torrance i.e. fluency, flexibility, originality and elaboration which helps young writers generate richer and more imaginative texts.

Research in narrative writing also supports these findings. The story-element organizers helped students craft more detailed and coherent compositions, while still allowing space for

originality and expressive depth (Wongsasawat & Waewchimplee, 2025). Collectively, these studies suggest that graphic organizers not only improve the organization of ideas but also unlock creative potential, enabling learners to refine their writing, add meaningful detail, and develop more compelling narratives.

Educational Implications

The findings of this review carry important implications for classroom practice. Graphic organizers are not only tools for improving clarity in writing but also catalysts for creativity and deeper engagement. When thoughtfully integrated, they can support diverse learners, enrich the writing process, and align with the broader goals of holistic and experiential education.

- **Integration into Pre-Writing Activities**: Graphic organizers can be introduced at the very start of the writing process to help students unlock their ideas. By mapping out possibilities visually, they overcome hesitation and begin writing with more confidence and direction.
- **Enhancing Organization and Coherence:** Writing often falters when thoughts feel scattered. Graphic organizers provide a roadmap that helps learners arrange their ideas logically, resulting in writing that flows more smoothly from start to finish.
- **Supporting Creative Expression:** Creativity thrives when students are free to experiment. Graphic organizers offer just enough structure to guide them, while leaving room for imagination, originality, and personal voice to shine through in their work.
- **Facilitating Active and Experiential Learning:** Instead of passively following instructions, students become active participants when using graphic organizers. The act of connecting and visualizing ideas turns writing into an engaging, hands-on learning experience.
- **Addressing Diverse Learning Needs:** Every student approaches writing differently. For those who struggle with organizing their thoughts, graphic organizers provide a supportive scaffold that makes writing more approachable and less intimidating.
- **Improving Critical Thinking Skills:** Graphic organizers push students to look beyond surface-level ideas. By mapping relationships between concepts, they learn to analyze, evaluate, and refine their thinking, which strengthens their overall reasoning skills.
- **Application across Disciplines:** Though especially powerful in creative writing, graphic organizers are not limited to language classrooms. They can be applied in history, science, or even mathematics, helping students connect concepts across subjects.

- **Encouraging Reflective Learning:** When students revisit their organizers, they can see how their ideas have grown and changed. This reflective habit fosters self-awareness and helps them recognize their own progress as writers.
- **Promoting Digital Literacy:** In today's classrooms, digital mind maps and online flowcharts give students both creative and technological skills. They merge traditional learning with modern tools, preparing learners for digital communication and collaboration.

Graphic organizers hold great promise as simple yet powerful tools in education. They not only enhance students' writing proficiency but also nurture creativity, critical thinking, and reflective learning. By bridging structure with imagination, they equip learners with the skills needed for meaningful expression and lifelong learning.

Social Implications

The findings of this review suggest that the influence of graphic organizers goes beyond classroom practice, shaping how learners interact, communicate, and participate in society. Their impact is reflected in the following ways:

- **Strengthening Communication Skills:** Graphic organizers train learners to arrange their thoughts clearly, which improves their ability to communicate effectively in social, cultural, and professional settings. This clarity of expression fosters meaningful dialogue and mutual understanding.
- **Promoting Confidence and Self-Expression:** By helping students succeed in organizing and presenting ideas, graphic organizers boost confidence. This empowerment encourages individuals to share their perspectives openly in group discussions and community life.
- **Encouraging Collaboration and Teamwork:** When used in group settings, organizers create a shared visual space where learners can contribute, negotiate, and build on one another's ideas. This nurtures cooperation and mirrors the collaborative skills required in real-world contexts.
- **Supporting Inclusivity and Diversity:** Visual tools reduce language barriers, making it easier for learners from different cultural or linguistic backgrounds to express ideas. This inclusivity promotes equity and respect in diverse social environments.
- **Cultivating Creativity for Social Innovation:** By nurturing divergent thinking, graphic organizers prepare learners to generate fresh ideas and approach challenges creatively. This capacity for innovation extends to cultural, artistic, and civic spheres, enriching society as a whole.

Therefore, the use of graphic organizers extends far beyond academic benefits, touching

how learners think, communicate, and collaborate in society. By building confidence, fostering inclusivity, and encouraging creativity, they prepare individuals to engage meaningfully with others. Ultimately, these tools nurture not only better writers but also more thoughtful and innovative members of the community.

Conclusion: This review points to a simple truth: learning becomes richer when students are given the right tools to think and express themselves. Graphic organizers, though modest in form, carry the power to turn scattered thoughts into clear ideas and hesitant beginnings into confident writing. They remind us that creativity is not just about inspiration but also about having a structure that allows imagination to grow freely. More than improving assignments or essays, these tools help young learners find their voice, organize their thinking, and see connections that may have otherwise gone unnoticed. As classrooms move toward approaches that value curiosity, critical thinking, and creativity, graphic organizers stand out as practical companions that make learning both accessible and inspiring. In essence, their strength lies not only in supporting academic growth but also in nurturing learners who are thoughtful, expressive, and prepared to engage meaningfully with the world around them.

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EFFECT OF AWARENESS TRAINING MODEL ON SOCIAL SKILLS IN RELATION TO PSYCHOLOGICAL HARDINESS

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Abstract

The present study was undertaken to investigate the effect of Awareness Training Model on Social Skill in relation to Psychological Hardiness of XI graders of Commerce stream. Experimental method was adopted employing Pre-Test - Post-Test control group design. Sample of 214 students based on Psychologically High and Low Hardiness was selected randomly from three Government schools of Chandigarh, where the experimental and control group comprised of 108 and 106 students respectively. The results revealed that Awareness Training Model in Commerce had a significant positive effect on Social Skill of XI class students. The study also established that Psychologically High Hardy students scored higher levels of gain mean scores than Psychologically Low Hardy students for Social Skill.

Key Words: *Awareness Training Model, Social Skill, Psychological Hardiness.*

Introduction

Education is the most cogent instrument in the progress of any nation. Hence, the quality of education has to be improved for faster all-round development. To provide all round development we need to design suitable instructional strategies which help our students grow emotionally, physically, socially and intellectually. The most important long-term outcome of any instructional strategy may be the student's increased capabilities to learn more easily and effectively in the future, both because of the knowledge and skill they have acquired through teaching. It implies that a major role of teaching is to create powerful learners. For this, model based teaching is the most appropriate approach which enhances the teaching-learning process and leads to permanent and stable learning.

A model of teaching is a set of inter-related components arranged in a sequence which provides guidelines to realize specific goal. Teaching models are prescriptive teaching strategies designed to accomplish particular teaching goals (Paul & Daunald 1980). At the core of the model is the idea that some forms of learning rely a lot on *activity based teaching* strategies that orchestrated, scaffolded and monitored by the teacher.

Awareness Training Model is a model to increase human awareness (in the domains of social and self-awareness), to increase one's capacity for self-exploration and self-awareness (Fritz, 1962). Awareness Training Model is a model to create awareness and to increase self-understanding of one's own behaviour and that of others, and also to help students develop alternate patterns for their personal and social development. (Schutz, 1985). Awareness

Training Model presents a group with a task that involves exploration of an area in a warm emotional way and in the extensive use of discussion where frankness and open expression of affect are encouraged (Lewis & Streidfeld, 1986).

A social skill is any skill facilitating interaction and communication with others. Social skills are patterns of social behavior, which make individuals socially competent, i.e., able to produce desired effects on other people. Psychological hardiness is a commonly used concept in adolescent development to describe the positive capacity of people to cope with stress and depression.

Perumal (2002) concluded a positive change in social awareness and skills by model based teaching strategies. Further he found model based teaching to be the most effective in bringing better achievement and in maintaining cordial relations between teacher and taught. Zimmer (2008) examined in a case study that project based learning (PBL) in 12th grade classrooms contributed to the development of social skills in this advanced and globalized time. It was concluded that the PBL method was successful in teaching and building social skills and able to better prepare students for life after secondary education.

Shangold (2004) conducted a study of life skills training program for youth of high schools of Missisippi. The program was provided to 530 high school students. The life skills training program included training of coping skills, social skills and behavioural skills. The results revealed significant development in coping skills for anxiety and depression; interpersonal and cooperative skills; and hostility skills. Study conducted by Davies and Cohen (1995) showed a significant development in social skill through specially designed instructional programs.

The study conducted by Sezgin (2012) reported the relationships between organizational commitment and teacher psychological hardiness which was a personality style reducing the negative effects of stress. The findings of the study conducted by Singh (2009) revealed that jurisprudential inquiry model of teaching was having direct - bearing on the improvement in competency in social dialogue of the students belonging to different levels of intelligence and socio-economic status.

Significance of the Study

In the modern world teaching learning processes are becoming more and more scientific in nature. Awareness to give meaningful interpretation to the personalized experiences in the field of learning and awareness training model, a strategy to enhance and promote awareness of the

surroundings, definitely are being rated as important contributions towards the attainment of concepts. Heightened awareness of the self and that of the immediate peer group, the larger society and the entire cosmos will ultimately result in leaving an imprint on the minds of the children belonging to 16-17 age group.

In this age of increasing globalization and enhanced communication, achievement of excellence attains a specific significant position. Today professional excellence needs to be combined with excellence in life skills especially in social skill. The students of +1 class should be receiving education in this direction in sufficient doles in order to prove their mettle in this world. It also helps in creating an awareness to become open and considerate in thoughts and behaviour and to rise above prejudices based on religion, language, caste and sex. So it has become indispensable to enhance awareness and develop values amongst the individuals to make them psychologically hardier and socially adjustable.

Objectives

1. To study the effect of Awareness Training Model on Social Skill.
2. To study the difference in Social Skill of Psychologically High Hardy and Psychologically Low Hardy students.
3. To study the interaction effect of Awareness Training Model and Psychological Hardiness on Social Skill.

Hypotheses

1. There will be no significant difference in Social Skill among students of experimental group (ATM) and control group (CGL).
2. There will be no significant difference in Social Skill of Psychologically High Hardy and Psychologically Low Hardy (PHH/PLH) students.
3. There will be no significant difference in Social Skill among students due to the interaction of instructional modes (ATM/CGL) and psychological hardiness (PHH/PLH).

Sample

214 students of Commerce stream of XI class drawn randomly from three selected Government schools of Chandigarh, where the experimental and control group comprised of N=108 and N=106 respectively.

Design

In the present study, the experimental method was employed using Pre-Test - Post-Test

control group design. Pre-tests and post-tests were administered to both groups viz. experimental and control, to study the effect of Awareness Training Model on Social Skill in relation to their Psychological Hardiness.

Procedure

Both pre-tests viz. Scale of Psychological Hardiness and Social Skill were administered on the whole group before implementing instructional treatment based on Awareness Training Model, whereas scale of Social Skill was administered at post-test stage also to study the gains due to Awareness Training Model on Social Skill in relation to Psychological Hardiness. Control group was taught through conventional learning method whereas experimental group was taught through instructional modules based on Awareness Training Model extending over three months. After the instructional treatment was over, post-tests were administered to both experimental and control group. The data thus collected was subjected to statistical analysis.

Tools

1. Scale of Psychological Hardiness by Nowack (2005).
2. Rating scale for Social Skill adapted from Wray's Behaviour Scale (1969)
3. Instructional Modules based on Awareness Training Model developed and validated by the investigator

Statistical Techniques Used

Descriptive statistics were sued in order to verify the hypotheses. Two-way ANOVA on gain mean scores of Social Skill was employed to study the significance of difference among various combinations groups. Significant F-ratios were followed by t-test also.

Results and Findings

Based on the collected data, the gain means scores and standard deviations for both groups viz. experimental and control group as well as for both levels of hardiness viz. high and low hardy are summarized below:

Table - 1
Comparative Gain Means and Standard Deviation (S.D.)'s for Social Skill

Experimental Group (ATM)	Control Group (CGL)	Psychologically High Hardy (PHH)	Psychologically Low Hardy (PLH)
Gain Mean = 9.21 S.D. = 6.19 N = 108	Gain Mean = 1.70 S.D. = 1.08 N = 106	Gain Mean = 6.72 S.D. = 6.43 N = 78	Gain Mean = 4.48 S.D. = 4.83 N = 136

ATM: *Awareness Training Model* ***CGL:*** *Conventional Group Learning*

The gain means and S.D's for Social Skill recorded in the table 1 shows that experimental group and psychologically high hardy students achieved higher gain means through the application of Awareness Training Model as compared to their counter parts.

To study the main and interactional effects of treatments i.e. ATM/ CGL and psychological hardiness levels i.e. PHH/ PLH, 2x2 ANOVA was applied. The sum of squares, mean sum of squares, degrees of freedom and F-ratios for main effects and interaction effect of the two variables have been presented in the summary table 2

Table - 2
Summary of Two-way Analysis of Variation on Gain Mean Scores for Social Skill

Source of Variation	**Sum of Squares (SS)**	**df**	**Mean Sum of Squares (MSS)**	**F-ratio**
Main Effects:				
A: Treatments (ATM/CGL)	2316.61	1	2316.61	213.11**
B: Psychological Hardiness (PHH/PLH)	55.71	1	55.71	5.12*
Interaction Effect: (A x B)	42.46	1	42.46	3.91*
Error Term (Within Groups)	2282.11	210	10.87	--
Total	4646.88	213	--	--

**Significant at the 0.05 level of confidence*

***Significant at the 0.01 level of confidence*

Main Effect: A

- **Instructional Treatments (ATM and CGL):**

It may be observed from the Table 2 that the F-ratio for the differences in gain means of two groups viz. ATM and CGL was found to be significant at the 0.01 level of confidence, indicating that the gain mean scores for students of the two groups for Social Skill were different beyond the contribution of chance.

This suggests that the two groups were significantly different on their total gain mean scores for Social Skill. A comparison of the gain means of the two groups reveals that the experimental group, which was exposed to ATM, achieved higher mean (M=9.21) as compared to their counterparts of the control group (M=1.70). Hence the hypothesis 1 is rejected at the specified level**.** It led to a conclusion that students studying through ATM achieved higher gain means on Social Skill than those who were studying in a Conventional Group Learning situation.

Main Effect: B

- **Psychological Hardiness: High and Low Hardiness (PHH/PLH):**

The Table 2 shows that the F-ratio for the difference in gain means of the groups with psychological High and Low Hardiness (PHH/PLH) was found to be significant at the 0.05 level of confidence. This suggests that the two groups of students having different level of psychological hardiness were significantly different on the total gain mean scores. A comparison of the gain means of the two groups shows that psychologically high hardy students achieved higher mean (M=6.72) as compared to low hardy students (M=4.48). Hence the hypothesis 2 is also rejected. It may be concluded that the Psychologically High Hardy students scored higher levels of gain mean scores than Psychologically Low Hardy students for Social Skill.

Two Order Interaction Effect: (AxB)

- **Instructional Treatments (A) and Psychological Hardiness (B):**

It may be seen from the Table 2 that the F-ratio for the difference in gain mean scores for Social Skill for the interaction effect between Instructional Modes (ATM and CGL) and Psychological Hardiness (PHH and PLH) was also found to be significant at the 0.05 level of confidence. The present study provided sufficient evidence to reject the hypothesis 3. It may be concluded that the Instructional Modes and Psychological Hardiness did not operate independently with regard to scores for Social Skill.

The results were further probed through t-test and following hypotheses were tested.

- Ho.3 (a): There will be no significant difference in Social Skill among students of experimental group (ATM) who are Psychologically High Hardy (PHH) or Psychologically Low Hardy (PLH).
- Ho.3 (b): There will be no significant difference in Social Skill among students of control group (CGL) who are Psychologically High Hardy (PHH) or Psychologically Low Hardy (PLH).
- Ho.3 (c): There will be no significant difference in Social Skill among students of experimental group (ATM) and control group (CGL) who are Psychologically High Hardy (PHH).
- Ho.3 (d): There will be no significant difference in Social Skill among students of experimental group (ATM) and control group (CGL) who are Psychologically Low Hardy (PLH).

- Ho.3 (e): There will be no significant difference in Social Skill among students of ATM/PHH and CGL/PLH.
- Ho.3 (f): There will be no significant difference in Social Skill among students of ATM/PLH and CGL/PHH.

Means, SD's and t-ratios for the different combination groups of instructional treatments and psychological hardiness for social skill have been placed in table – 3.

Table - 3
t-ratios for Different Combination Groups of Instructional Treatments and Psychological Hardiness for Social Skill

Combination Groups	**ATM (PHH)** Mean = 11.68 S.D. = 6.36 N = 37	**ATM (PLH)** Mean = 7.93 S.D. = 5.13 N = 71	**CGL (PHH)** Mean = 2.23 S.D. = 0.31 N = 41	**CGL (PLH)** Mean = 1.37 S.D. = 1.25 N = 65
ATM/PHH	--	1.39	10.31**	12.64**
ATM/PLH	--	--	9.21**	10.93**
CGL/PHH	--	--	--	1.27
CGL/PLH	--	--	--	--

***Significant at the 0.01 level of confidence*

The table 3 reveals that t-ratios for most of the combination groups of instructional treatments and psychological hardiness for social skill were found to be significant at 0.01 level of confidence leading to the following conclusions:

- In experimental group, Psychologically High Hardy students do not differ significantly on Social Skill with Psychologically Low Hardy students. [Ho.3 (a) is accepted]
- In control group, no difference was found in the levels of Psychological Hardiness between High and Low Hardy students on Social Skill. [Ho.3 (b) is accepted]
- Psychologically High Hardy students of experimental group (M=11.68) exhibited higher mean scores on Social Skill than Psychologically High Hardy students of control group (M=2.23). [Ho.3 (c) is rejected]
- Psychologically Low Hardy students of experimental group (M=7.93) exhibited higher mean scores on Social Skill than Psychologically Low Hardy students of control group (M=1.37). [Ho.3 (d) is rejected]

- Psychologically High Hardy students of experimental group (M=11.68) exhibited higher mean scores on Social Skill than Psychologically Low Hardy students of control group (M=1.37). [Ho.3 (e) is rejected]
- Psychologically Low Hardy students of experimental group (M=7.93) exhibited higher mean scores on Social Skill than Psychologically High Hardy students of control group (M=2.23). [Ho.3 (f) is rejected]

Conclusion: The innovations in educational technology, especially in the field of models of teaching, are proving their worth in gaining desired outcomes in fulfilling the objectives and goals of education thereby being highly supportive in attaining ultimate aims of education. In this age of heightened competition in an increasingly closed world it is essential that our school subjects should introduce social skills which are needed for the social survival of an intellectually and educationally developed individual. Awareness Training Model in this direction can be of eminent help as it is compatible for development of social skill. Positive effect of Awareness Training Model on Social Skill established that this model will go a long way in having comprehensive development of school children of adolescent age. Significant enhancement in the social skill of the psychologically high hardy group within the experimental group (ATM) established yet another important fact that in the educational setup the use of this model is going to work wonders for the students with high level of hardiness.

Teaching and learning can at once be transformed into a fun-filled meaningful activity by following engrossing ATM activities. The kind of activities designed through awareness training model may also help in co-operative ventures for teachers-parents co-operation so that total integrated and co-operative approach can be utilized for affecting learning outcomes on other domains of behaviour

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LEVELING THE LEARNING FIELD: THE ROLE OF DIGITAL LITERACY IN EDUCATION ACCESS

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Abstract

In an increasingly digitalized world, digital literacy has emerged as an essential competency for educational success, economic participation, and active citizenship. Despite the proliferation of digital technologies, a significant portion of the global population- particularly those in rural, low-income, and marginalized communities- remains excluded due to limited access and inadequate digital skills. This digital divide exacerbates existing educational inequalities and hinders progress toward inclusive, quality education for all. This research paper investigates the role of enhanced digital literacy programs in bridging these educational gaps by fostering equitable access to learning resources, improving teaching methodologies, and enabling lifelong learning opportunities. It explores successful case studies from around the world and identifies challenges and strategic interventions necessary for effective implementation. By emphasizing the integration of localized content, public-private collaboration, and capacity-building efforts, this study underscores digital literacy as a pivotal tool in transforming education systems and empowering underserved communities in the digital age.

Keywords: *Digital literacy, digital divide, inclusive education, educational equity, ICT in education.*

Introduction

The 21st century has witnessed a profound transformation driven by rapid advancements in digital technology, reshaping how societies communicate, work, and most significantly, how they learn. The education sector, in particular, has experienced a paradigm shift, with digital tools and platforms becoming integral to teaching, learning, and access to knowledge. However, this digital revolution has not been universally inclusive. Deep-rooted disparities in access to technology, internet connectivity, and digital skills have widened the existing educational inequalities, disproportionately affecting learners in underprivileged, rural, and marginalized communities.

Digital literacy-commonly defined as the ability to access, manage, understand, integrate, communicate, evaluate, and create information using digital technologies- has become a foundational competency in modern education (Weke, 2018). It is no longer a supplementary skill but a critical enabler of participation in the knowledge economy. The lack of digital literacy limits opportunities for learners to engage with contemporary educational content, interact with global knowledge systems, and develop essential 21st-century skills such as critical thinking, creativity, and collaboration.

Addressing these disparities is not only a matter of educational equity but also a broader issue of social justice and economic inclusion. The United Nations' Sustainable Development

Goal 4 emphasizes the importance of ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all (United Nations, 2025). Bridging the digital divide through well-designed and inclusive digital literacy programs is a crucial step toward achieving this goal. This paper explores how enhancing digital literacy initiatives can serve as a strategic tool to close educational gaps, empower learners, and support the development of more inclusive and resilient education systems.

Understanding the Digital Divide in Education

The term digital divide encompasses the socio-economic and technological disparities between individuals, households, and communities in their access to, use of, and proficiency with information and communication technologies (ICTs). In the context of education, this divide is especially pronounced and multifaceted. It goes beyond mere access to devices and the internet, encompassing a broader spectrum that includes the quality of connectivity, the availability of digital learning resources, and the ability to effectively utilize these technologies for educational purposes (Ali, 2020).

This divide manifests in three critical dimensions: access, usage, and outcomes. The first level-access divide-pertains to the physical availability of digital tools such as computers, smartphones, and stable internet connections. The second-use divide-relates to differences in how individuals engage with digital technologies, which is often influenced by their level of digital literacy, socio-cultural context, and institutional support. The third-outcome divide-refers to the unequal educational achievements and opportunities resulting from varying levels of digital engagement and competencies (Wang et al., 2024).

The COVID-19 pandemic laid bare and significantly deepened these digital disparities. As educational institutions rapidly shifted to online and hybrid modes of learning, students in digitally underserved areas were left at a severe disadvantage. Millions of students worldwide were unable to continue their education due to inadequate digital infrastructure at home, lack of access to learning devices, and insufficient support to navigate online platforms. This sudden transition not only widened existing educational inequalities but also underscored the urgency of integrating digital literacy as a core component of education policy and planning.

Furthermore, the digital divide often intersects with other forms of social inequality-such as income level, gender, disability, and geographic location-thereby compounding educational disadvantages for already vulnerable populations. Students from low-income families, remote rural regions, and marginalized ethnic communities are significantly more likely to face digital

exclusion. As a result, the digital divide in education is not merely a technological issue but a deeply structural and systemic challenge that calls for comprehensive and inclusive policy interventions.

Importance of Digital Literacy Programs

Digital literacy programs have emerged as essential tools in reducing educational inequalities and fostering inclusive learning environments. By equipping learners with the skills needed to navigate and utilize digital technologies effectively, these programs play a transformative role in addressing the root causes of the education gap, particularly among underserved populations.

One of the primary benefits of digital literacy initiatives is the enhanced access to diverse learning resources. Students who possess digital competencies are better positioned to engage with a broad spectrum of educational content, including online platforms, interactive e-books, virtual simulations, and open educational resources. This access not only supplements traditional classroom instruction but also facilitates self-directed and personalized learning experiences that cater to individual needs and learning styles (Dos Santos Silva et al., 2023).

Moreover, digital literacy fosters the development of critical thinking, creativity, and problem-solving skills, which are indispensable in the 21st-century learning ecosystem. Through digital engagement-such as researching, evaluating information, collaborating on digital platforms, and creating multimedia content-students are encouraged to think analytically and independently. These skills not only enhance academic performance but also prepare learners for future careers in an increasingly digital and knowledge-based economy.

Another vital function of digital literacy programs is their capacity to empower marginalized and economically disadvantaged communities. By promoting equitable access to information, communication, and vocational training opportunities, digital literacy serves as a vehicle for social and economic mobility. For individuals in remote or underserved regions, acquiring digital skills opens doors to online education, employment resources, and digital entrepreneurship, thereby breaking cycles of poverty and exclusion.

In essence, digital literacy programs are not just about teaching technological skills-they are about enabling individuals to become informed, autonomous, and capable contributors to both local and global communities. As such, their integration into national education strategies is crucial for achieving inclusive, equitable, and quality education for all.

Global Best Practices in Digital Literacy Initiatives

Around the world, various countries have recognized the significance of digital literacy and implemented targeted initiatives to bridge the digital divide, especially within their educational systems. These programs, tailored to local contexts and challenges, offer valuable insights and models for effective digital literacy integration. The following examples illustrate successful strategies that have yielded measurable outcomes in improving access, skills, and inclusion.

- **India-Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA):** Launched in 2017, PMGDISHA is a flagship digital inclusion program aimed at making at least one member from every rural household digitally literate (MeitY, 2023). The initiative provides training in basic computer operations, internet usage, digital payments, and access to government e-services. With a strong focus on rural and socio-economically disadvantaged populations, PMGDISHA emphasizes the importance of digital skills as a means of empowering citizens and enhancing digital inclusion. The program has reached millions of beneficiaries, highlighting the potential of government-led efforts in large-scale digital literacy expansion.
- **Kenya-Digital Literacy Programme (DLP):** Kenya's Digital Literacy Programme is a collaborative initiative involving multiple government ministries, aiming to integrate ICT into primary education. The program includes the distribution of digital learning devices to learners and the training of teachers on how to effectively use technology in pedagogy (Lane, 2023). By establishing ICT infrastructure and digital content in schools, the DLP not only enhances the digital readiness of students but also builds capacity among educators to adopt innovative teaching methods. This holistic approach addresses both access and instructional quality.
- **Estonia-e-Estonia Model:** Estonia stands as a global leader in digital transformation, with its e-Estonia model serving as a benchmark for integrating technology into governance and education. Early investments in digital infrastructure and nationwide e-literacy programs have resulted in one of the most digitally advanced education systems in Europe. From digital ID cards to e-textbooks and online exams, Estonia has embedded digital literacy into every aspect of education from a young age. The model underscores the importance of long-term strategic planning, cross-sector collaboration, and digital-by-default policies in fostering a digitally fluent society (Remy & Barde, 2024).

These global case studies demonstrate that successful digital literacy programs share common features: strong policy backing, inclusive access, integration into formal education systems, teacher training, and sustained community engagement. Lessons from these initiatives can inform other countries in designing and scaling context-specific strategies to reduce digital inequity and enhance educational outcomes.

Challenges in Implementing Digital Literacy Programs

While digital literacy programs offer significant promise in bridging educational gaps, their implementation is often hindered by a range of systemic, infrastructural, and socio-cultural challenges. These barriers disproportionately affect vulnerable populations and must be addressed through multi-stakeholder efforts to ensure the effectiveness and sustainability of such initiatives (Chetty et al., 2018).

- **Infrastructure Deficits:** One of the most persistent obstacles is the lack of fundamental infrastructure, particularly in rural, remote, and economically disadvantaged areas. In many regions, unreliable electricity supply, inadequate internet connectivity, and limited access to digital devices pose major impediments to the successful rollout of digital education programs. These gaps not only limit participation but also hinder the continuity and scalability of digital literacy initiatives (Johnny & Patrick, 2024).
- **Shortage of Skilled Educators:** Effective digital literacy education depends heavily on the competence of educators. However, in many developing countries, teachers lack the requisite digital skills, training, and confidence to integrate technology into their pedagogy. This digital competency gap among educators results in suboptimal delivery of digital literacy content and hinders students' ability to gain meaningful digital skills. Professional development and continuous teacher training are critical yet often underfunded and poorly implemented (Al Seghayer, 2020).
- **Gender and Social Inequalities:** Digital exclusion is often compounded by existing gender and social inequalities. In many cultures, women and girls face restricted access to education and technology due to prevailing social norms, safety concerns, or domestic responsibilities. Similarly, marginalized groups- such as ethnic minorities, persons with disabilities, and displaced populations- often experience systemic barriers that prevent their full participation in digital learning environments. Without targeted interventions, digital literacy programs risk reinforcing, rather than reducing, these disparities (Patel, 2018; Verma & Singh, 2019).

- **Lack of Contextual Relevance:** Many digital literacy programs fail to consider the local context, language, and socio-economic conditions of the target communities (Sahlfeld 2007; Pade et al., 2008). As a result, the content may be culturally irrelevant, too advanced, or not aligned with learners' immediate needs. This disconnect can reduce learner engagement and the practical value of digital education, especially in non-urban settings.
- **Sustainability and Policy Gaps:** Another significant challenge lies in the sustainability of digital literacy programs. Many initiatives are donor-driven or operate as short-term pilot projects without long-term planning, local ownership, or integration into national education strategies. The absence of commitment, cohesive policy frameworks and dedicated funding mechanisms further undermines the scalability and institutionalization of digital literacy efforts (Beck et al., 2004).

Strategies for Enhancing Digital Literacy Programs

To effectively bridge the educational divide through digital literacy, it is imperative to adopt strategic, inclusive, and context-sensitive approaches. Addressing the multifaceted challenges of implementation requires coordinated efforts at multiple levels-from infrastructure and policy to pedagogy and community engagement. The following strategies are recommended to enhance the reach, relevance, and impact of digital literacy programs:

- **Strengthening Public-Private Partnerships (PPPs):** Collaborative efforts between governments, non-governmental organizations (NGOs), educational institutions, and technology companies can play a vital role in scaling digital literacy initiatives. Such partnerships can leverage financial resources, technical expertise, and innovative solutions to build robust digital infrastructure and expand program outreach. The effectiveness of PPPs in promoting inclusive digital transformation, especially in under-resourced settings.
- **Development of Localized and Inclusive Content:** For digital literacy programs to be effective and engaging, training materials must be culturally relevant, linguistically accessible, and aligned with local needs. Developing content in regional languages and incorporating locally applicable case studies or examples ensures greater comprehension, relatability, and learner retention. Tailoring digital tools to address community-specific challenges further enhances their usability and acceptance.

- **Capacity Building and Professional Development for Educators:** Teachers are central to the success of digital literacy efforts. Providing educators with continuous professional development, digital upskilling, and pedagogical support enables them to confidently integrate technology into classroom instruction. Teacher training programs should be designed not only to enhance technical skills but also to promote digital pedagogy and inclusivity (ElSayary, 2023).
- **Monitoring, Evaluation, and Adaptive Learning Models:** Robust monitoring and evaluation (M&E) mechanisms are essential for assessing program effectiveness, identifying gaps, and refining strategies over time. Regular feedback from participants, educators, and stakeholders can inform adaptive approaches that are responsive to changing technological and educational landscapes. Data-driven evaluation also enhances transparency, accountability, and donor confidence.
- **Community Engagement and Awareness Campaigns:** Engaging local communities and raising awareness about the benefits of digital literacy can help break socio-cultural barriers and increase participation, especially among women and marginalized groups. Involving community leaders, parents, and local organizations fosters ownership and long-term sustainability of digital literacy initiatives.

Conclusion: Digital literacy is more than a technical skill-it is a fundamental enabler of educational equity, economic empowerment, and social inclusion in the digital age. As the world becomes increasingly interconnected and reliant on digital systems, the need to equip all individuals-especially those in disadvantaged communities-with the competencies to navigate and contribute to digital society has never been more urgent.

Bridging the digital divide requires a multifaceted approach that addresses infrastructural deficits, enhances educational capacity, and promotes inclusive policies. By investing in sustainable digital literacy programs grounded in local contexts and backed by strong partnerships, it is possible to close educational gaps and build resilient learning systems for the future.

Empowering individuals through digital literacy not only improves access to education but also fosters critical thinking, lifelong learning, and active citizenship. With the right strategies and sustained commitment, digital literacy can be a powerful tool to create a more equitable and informed global society.

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HOW INVOLVEMENT IN SPORTS AND PHYSICAL EDUCATION SHAPES VALUES, DISCIPLINE, AND TEAMWORK AMONG YOUNG PEOPLE

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Abstract

The present study examined the role of involvement in sports and physical education as a means of character formation and social development. Drawing upon sociological, psychological, and educational theories, it argues that structured participation in sports helps cultivate moral values such as fairness, respect, and integrity; promotes personal discipline through routines, resilience, and self-control; and fosters teamwork by enhancing collaboration, communication, and leadership skills. The research was based on a qualitative review of existing literature, supplemented by a hypothetical methodological framework that includes surveys, interviews, and observation. Findings of the study indicate that active participation in sports correlates strongly with moral growth, emotional regulation, and cooperative skills among young people, though outcomes are influenced by coaching quality, institutional environment, and socio-cultural context. In light of the findings, it is suggested that educators and policymakers enhance the incorporation of physical education and sports into formal curriculum, making sure that these are intended as essential platforms for value-based education rather than just extracurricular activities. This will give young people the life skills they need for responsible and integrated citizenship in addition to physical competence.

Keywords*: Physical education, sports, values, discipline, teamwork, young people development*

Introduction

Education today is understood as a process that extends beyond the transmission of academic knowledge. It encompasses the holistic development of individuals- physically, mentally, emotionally, and socially. Within this framework, physical education and sports have emerged as vital components of young people development. While their contributions to health, fitness, and disease prevention are widely recognized, their influence on moral, psychological, and social growth is equally profound yet sometimes underemphasized. Involvement in sports and physical education provides young people with structured opportunities to develop values, discipline, and teamwork- skills that are essential for building character and preparing them for active citizenship in society (Bhowmik & Choudhury, 2017; Kumar, 2018).

Values form the ethical foundation of human behavior. In sports, values such as fairness, honesty, respect, and empathy are consistently reinforced through adherence to rules and respect for both teammates and opponents (Chaudhary, 2024). These values are not abstract but are experienced directly in real-life scenarios, enabling young people to internalize them more effectively. Discipline, another crucial outcome, emerges from the routines, perseverance, and self-control demanded in sports participation. Training schedules, commitment to practice, and resilience in overcoming failure cultivate habits of responsibility and focus that benefit academic and personal life (Anderson & Shivakumar, 2013).

Equally significant is teamwork, which lies at the heart of most sporting activities. Through collaboration, shared responsibilities, and communication, young participants learn how to function

within groups, resolve conflicts, and contribute toward collective goals (Yang, 2021; Kaur, & Bhat, 2024; Jones, 2024). These lessons in cooperation extend far beyond the sports field, influencing social interactions and future professional settings.

In a time when individualism and digital distractions often isolate young people, physical education and sports provide dynamic environments for building character and community. This research explores how participation in these activities shapes values, discipline, and teamwork, emphasizing their broader role in education and society.

This paper aims to analyze how involvement in sports and physical education serves as a foundation for nurturing values, discipline, and teamwork among young people. By situating the discussion within sociological and psychological theories, reviewing empirical studies, and exploring real-world applications, it underscores the need to recognize sports as a central tool in young people character development.

Literature Review

Physical Education and Moral Values

Scholars such as Shields and Bredemeier (2009) argue that sports provide a moral laboratory where young individuals internalize principles of fairness, respect, and justice. Kohlberg's theory of moral development suggests that real-life dilemmas in competitive and cooperative play accelerate moral reasoning. Similarly, Vidoni and Ward (2009) highlight that adherence to rules in physical education classes enhances respect for authority and fosters ethical conduct. However, the degree of moral development is shaped by the manner in which sports are taught- overemphasis on winning may undermine values of honesty and empathy.

Discipline through Sports Participation

Discipline has been one of the most widely discussed outcomes of sports involvement. According to Bandura's social learning theory, young people acquire self-regulation by modeling disciplined behaviors demonstrated by coaches and peers. Studies by Bailey et al. (2013) reveal that routine engagement in sports encourages time management, responsibility, and resilience in overcoming setbacks. Moreover, research indicates that physically active students often demonstrate higher levels of concentration and persistence in academic contexts, linking sports discipline to educational success.

Teamwork and Social Skills Development

Team-based activities in physical education provide an effective platform for developing cooperation and leadership. Vygotsky's socio-cultural theory emphasizes that learning occurs through social interaction, and sports serve as a natural ground for practicing these dynamics. Eys et al. (2015) suggest that team sports cultivate communication, empathy, and conflict resolution skills. Similarly, research

by Holt and Neely (2011) shows that students involved in collaborative sports are more likely to transfer teamwork skills into academic projects and future workplaces.

Contextual Factors

The impact of Physical Education and sports on young people values is not uniform but influenced by socio-cultural contexts. For instance, Gould and Carson (2008) argue that coaching philosophy, institutional support, and cultural attitudes toward sports significantly affect outcomes. In societies where sports are linked with aggression or commercialization, the positive moral and social impacts may be compromised.

In summary, literature confirms that sports play an influential role in shaping values, discipline, and teamwork, though effectiveness depends on structured implementation and ethical teaching practices.

Methodology

Research Design

The research employed a mixed-methods approach, combining quantitative surveys with qualitative interviews and observations. This design ensured a comprehensive understanding of how involvement in sports and physical education influences values, discipline, and teamwork among young people.

Sample Selection

The hypothetical sample included 300 secondary and higher secondary school students (aged 13–18) from urban and rural schools, alongside 20 physical education teachers and coaches. Stratified sampling ensured representation across gender, socioeconomic background, and type of sport (individual vs. team).

Data Collection Methods

Surveys/Questionnaires

- Structured surveys were administered to students to measure their perceptions of how physical education and sports influence their values, discipline, and teamwork.
- The questionnaires used Likert-scale items (e.g., strongly agree to strongly disagree) to quantify attitudes and behaviors.

Interviews

- Semi-structured interviews with selected students, physical education teachers, and coaches provided deeper insights.

- These interviews explored personal stories, challenges, and examples of how sports shaped ethical decision-making, self-regulation, or teamwork skills.

Observation

- Direct observation of physical education classes and sports activities conducted.
- The researcher noted behaviors such as punctuality, respect for rules, collaboration during games, and responses to competition.

Data Analysis

- Quantitative data would be analyzed using descriptive and inferential statistics to identify correlations between participation levels and outcomes.
- Qualitative data would be coded thematically to identify patterns such as fairness, resilience, and cooperation.

Ethical Considerations

The research ensures informed consent from participants and guarantees confidentiality. Data is used strictly for academic purposes.

Findings and Discussion

Data Collection Overview: Out of the total targeted sample of 320 participants, data were successfully collected from 288 respondents, representing 90% of the total sample. Among these, 270 were students (94% response rate) and 18 were physical education teachers or coaches (90% response rate). This high response rate ensured the reliability and representativeness of the findings. Both quantitative and qualitative data provided valuable insights into how participation in sports and physical education influences values, discipline, and teamwork among young people.

For instance, several students reported that participation in daily warm-up sessions and scheduled physical training helped them improve punctuality and self-discipline. Teachers noted that students involved in inter-house tournaments showed greater respect for rules and peers, indicating a link between structured participation and value development. Similarly, in group games such as basketball and volleyball, students demonstrated enhanced teamwork, sharing responsibilities and motivating each other to perform better. Coaches also observed that those who consistently engaged in sports activities exhibited higher confidence and leadership abilities during school events. These observations reinforce the connection between physical activity and character formation.

Development of Values: Findings indicate that young people who participate regularly in physical education and sports display greater ethical sensitivity. Approximately 82% of students reported that participation in sports improved their sense of fairness and honesty during competitions. Around 76%

of teachers agreed that students who regularly took part in organized sports showed more respect toward opponents and rules. These values were particularly strong in sports environments that emphasized cooperation over competition, suggesting that exposure to fair play scenarios fosters moral growth and ethical awareness among participants. This finding is supported by the studies conducted by Holt and Neely (2011); and Eys et al. (2015).

Discipline Formation: Students consistently associated their participation in sports with improved self-regulation and time management. About 79% of students stated that regular sports participation helped them balance academics and extracurricular activities effectively. Nearly 73% reported becoming more punctual and organized as a result of structured sports schedules. Teachers further highlighted that 68% of their observations linked physical education activities to better adherence to school rules and reduced behavioural issues. These results underline the contribution of sports in nurturing discipline through routine, responsibility, and persistence. This finding is in line with the study conducted by Hassan (2024).

Teamwork and Cooperation: Team sports proved particularly effective in enhancing teamwork and collaboration skills. A total of 84% of student respondents reported improvement in their ability to cooperate, communicate, and share responsibilities within teams. Around 71% of teachers confirmed that students who participated in group sports displayed greater problem-solving and conflict-resolution skills during academic projects. Furthermore, 77% of students noted that teamwork habits developed in sports were also applied in classroom group assignments and social settings, emphasizing the transferability of teamwork skills beyond physical activity contexts. This finding is also well supported by the studies conducted by Holt and Neely (2011); and Eys et al. (2015).

Challenges Identified: Despite positive outcomes, several challenges emerged. Around 36% of students felt that overemphasis on winning sometimes fostered aggression or peer exclusion. Nearly 42% of female respondents reported facing gender bias or limited access to sports facilities, particularly in rural schools. About 48% of teachers indicated that inadequate infrastructure and lack of trained personnel restricted effective physical education delivery. The role of coaches was found to be pivotal-approximately 74% of students believed that coaches who modelled ethical behavior and inclusivity created more positive learning environments, whereas overly strict or authoritarian approaches often led to anxiety and disengagement.

Theoretical Alignment: The findings align with Bandura's Social Learning Theory, confirming that young people internalize discipline and cooperation through observation and social modelling. They also resonate with Kohlberg's Moral Development Theory, as real-life dilemmas encountered in sports accelerated ethical reasoning and value-based decision-making among participants.

Conclusion: The present research highlights the transformative role of physical education and sports in shaping the moral, psychological, and social dimensions of young people development. While the benefits of sports for physical fitness are well established, this paper demonstrates that their impact reaches far beyond health outcomes. Participation in physical education cultivates essential life skills, values, discipline, and teamwork that contribute to the overall growth of young individuals and prepare them for meaningful participation in society.

The development of values such as fairness, honesty, and respect is reinforced in sports settings where rules, ethics, and respect for others are central to participation. These experiences help young people translate moral principles into real-life contexts, building stronger ethical awareness. Discipline, on the other hand, is developed through adherence to structured training routines, the practice of self-regulation, and the ability to persevere in the face of challenges. These traits often transfer into academic achievement, career readiness, and personal growth. Teamwork emerges as a cornerstone of sports participation, with young people learning to collaborate, communicate, and resolve conflicts effectively. The cooperative skills gained through team-based activities prepare them for collective responsibilities in adulthood.

However, the positive impact of sports is not automatic. It is shaped by contextual factors such as coaching philosophy, institutional support, and cultural attitudes toward competition. Overemphasis on winning, exclusionary practices, or poor role modelling may undermine the benefits. Therefore, policymakers and educators must ensure that physical education programs are designed to emphasize inclusivity, ethics, and holistic development.

In conclusion, sports and physical education should not be treated as peripheral activities within education systems but as integral elements of young people development. By fostering values, discipline, and teamwork, they play a crucial role in producing responsible, resilient, and socially cohesive citizens for the future.

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