

ISSN 2277-7733

# Voice of Research

Volume 14 Issue 2, September 2025

ICV - 66.11



*An International Peer Reviewed & Referred  
Journal for Change and Development*





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*An International Peer Reviewed Journal for  
Change and Development*

ISSN 2277-7733

Volume 14 Issue 2,  
September 2025

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*Ahmedabad*

## EDITORIAL

Amidst all the odds of power game, trade war, corruption, inflation, unemployment, poverty, mental health problems, fake news etc. the potential human stands upright and moves stealthily with the idea of survival and sustainability. The current issue with the papers related to teaching aids & learning, emotional intelligence, leadership and teacher professional development, psychological antecedents, online oversharing and adolescents, historical corridors and modern bridges presents the society with potential researchers as the strong backbone.

To add to the society Dwivedi and Mishra conducts a study on teaching aids and learning in the primary school students; Singh and Sharma focus on the emotional intelligence of B.Ed. students; Magnifique relates school leadership and teacher professional development in secondary schools; Lalita and Sandhu talks about the psychological antecedents of online oversharing across different social networking sites among adolescents whereas Cao studies the evolution of Yunnan's role in cultural exchanges and regional cooperation between China and India.

With a hope of best for the mankind, I am sure this issue will enlighten the potential researchers and the society as well it will help us all think about the sustainability of the humanity.

Regards,

Avdhesh Jha  
Chief Editor,  
Voice of Research

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## A STUDY OF TEACHING AIDS FAVOUR LEARNING IN THE PRIMARY STUDENTS OF CBSE BOARD

**Vibha Dwivedi**

Assistant Professor

R.H. Patel English Medium B.Ed. College, Gandhinagar

**Shipra Bajpayee**

Research Scholar

MA Education

ISSN 2277-7733

Volume 14 Issue 2,

September 2025

### Abstract

*This experimental study examined the effect of teaching aids on learning the “Angle” unit in Mathematics among Grade 6 CBSE students in Ahmedabad. Using an experimental (teaching-aids) and control (traditional) group design with pre- and post-tests, the researcher compared achievement outcomes across 158 students (86 boys, 72 girls) from one purposively selected CBSE school. Statistical analysis (mean, SD, t-test) showed significantly higher post-test scores for the experimental group ( $M = 29.6$ ) than control ( $M = 22.8$ ), and significant gains from pre- to post-test within the experimental group. Gender differences within the experimental group were not significant. Based on results, the researcher concludes that teaching aids positively affect conceptual understanding, engagement and achievement in the Angle unit and recommends wider use and further research.*

**Keywords:** learning, teaching, teaching aid, CBSE, primary school

The study opens by situating teaching aids within the contemporary Indian education context (CBSE, NEP 2020, Digital India) and argues that mathematics—being abstract—benefits from concrete, visual and interactive instructional supports. The researcher notes the growing need to convert abstract mathematical ideas into tangible experiences, especially in primary grades, and positions teaching aids as critical for improved comprehension and retention. The context includes both face-to-face and distance education scenarios where digital and physical aids are relevant. The research question is stated succinctly: To study whether teaching aids favour learning in primary (Grade 6) students of the CBSE Board, with a focus on the “Angle” unit in Mathematics. The intent is to evaluate the effect of using teaching aids versus traditional methods on students’ mathematical achievement.

### Key Definitions and Variables

Study — defined both theoretically and operationally as the investigation and reporting of student learning outcomes; Teaching aids - broadly defined to include flashcards, charts, manipulatives, videos, smart boards, apps, and other materials; operationalized in this study by the specific tools used to teach the Angle unit; Variables: Dependent variable - educational achievement in Mathematics (Angle unit). Independent variable - gender (boys/girls); other experimental manipulation is teaching method (teaching aids vs. traditional).

### Objectives

To study effectiveness of teaching aids for Grade 6 learning; To study effectiveness in relation to gender; To carry out teaching-aids sessions

(experimental) vs. traditional sessions (control); To develop and use a post-test for comparing achievement.

Five null hypotheses were tested, including no significant differences between: experimental and control post-test means (Ho1), boys and girls within experimental group (Ho2), boys in experimental vs control groups (Ho3), girls in experimental vs control groups (Ho4), pre-test vs post-test of experimental group (Ho5).

**Importance and Limitations:** The study argues the importance of identifying teaching aids that improve learning (for students, teachers, parents, schools and society). Delimitations: English-medium students, academic year 2024–2025, CBSE students only, and a sample drawn from one school (Ahmedabad).

**Review of Related Literature:** Theoretical Framework and Relevant Models: The review highlights multiple pedagogical frameworks that support the use of teaching aids in mathematics:

Concrete–Representational–Abstract (CRA) - progressive use of manipulatives, representations, then symbols; Cognitively Guided Instruction (CGI) - emphasizes building on learners' thinking; Van Hiele model - levels of geometric understanding, which aligns well with staged use of aids for angles; Schema-Based Instruction (SBI) - pattern recognition and schematic representation.

These frameworks support the assertion that manipulatives and visual tools aid mathematical internalization.

**Empirical Studies Reviewed:** Several international and national studies are summarized showing a consistent positive association between audio-visual/ICT aids and student achievement or interest (examples include studies in Rwanda, Nigeria, Bangladesh, Saudi Arabia, Taiwan, Algeria and Ecuador). Common findings: increased achievement, engagement, and teacher/student positive attitudes; but also limitations such as lack of infrastructure in some contexts. The review concludes the present study adds local evidence (Ahmedabad, Grade 6 Angle unit) with an experimental design.

### **Research Design and Methodology**

Population and Sample: Population: All primary CBSE students in Ahmedabad district; Sample: One purposively selected CBSE school (NirmaVidyavihar, Chharodi campus, Ahmedabad). Four divisions of Grade 6 comprising 158 students (86 boys, 72 girls) formed the sample. The researcher explicitly used purposive sampling, a common pragmatic choice for experimental classroom work.

Sampling Rationale: The document explains sampling types (probability vs non-probability), reasons for purposive sampling, and the practical benefits (economy, manageability). The choice is justified because the study is a classroom-based experiment rather than a large generalizable survey.

Tool and Instrument: A self-made post-test (validated with experts and guide) on the Angle unit measured achievement. The researcher described construction steps (planning, item writing, assembling, directions, scoring key), and trialed the



tool with experts for language and option corrections. Pre-test marks were taken from unit marks and used in analysis.

**Procedure / Implementation Schedule:** The teaching schedule covered five sub-topics (Comparing Angles; Special Types of Angles; Measuring Angles; Drawing Angles; Types of Angles and their measures) taught from 23/06/24 to 27/06/24 (sessions 8:15–9:00), with the post-test administered on 28/06/24. Control groups received traditional instruction; experimental groups received instruction integrated with varied teaching aids.

**Data Collection & Ethical Considerations:** Permission was obtained from the school; the researcher collected completed tests and thanked participants. Data collection emphasized completeness of tests and cooperation of school staff. Statistical techniques planned: mean, standard deviation (SD), standard error, and t-test for hypothesis testing (conducted with computer support).

### **Analysis and Interpretation of Data**

**Overview of Analytical Strategy:** Both descriptive (means, SD) and inferential (t-tests) statistics were used. The t-test was applied to compare group means (independent samples for group comparisons; paired t for pre/post within the same group). Assumptions and rationale for using t-tests are stated (interval/ratio data, near equal variances, approximate normality).

### **Key Results — Pre-test vs Post-test**

A tabulated excerpt of pre- and post-test scores shows generally higher post-test scores across students; the highest pre-test score observed was 26 and highest post-test 30 in the sample table. The raw score listing supports an overall positive trend.

**Post-test: Experimental vs Control:** Experimental group ( $N = 79$ ): Mean ( $M$ ) = 29.6,  $SD = 6.80$ ; Control group ( $N = 79$ ): Mean ( $M$ ) = 22.8,  $SD = 7.03$ ; Computed  $t = 4.68$ , which exceeds the critical  $t$  at  $p < 0.01$ , so  $H_0$  rejected. The experimental group outperformed the control group, indicating a significant positive effect of teaching aids on achievement in the Angle unit.

**Gender Comparisons within Experimental Group;** Boys (experimental,  $N = 42$ ):  $M = 22.6$ ,  $SD = 7.21$ ; Girls (experimental,  $N = 37$ ):  $M = 24.8$ ,  $SD = 6.54$ ; Computed  $t = 1.52$ , not significant at 0.01 (NS). Thus  $H_0$  not rejected: no statistically significant gender difference in the experimental group's post-test performance. This suggests that teaching aids were equally beneficial across genders in this sample.

**Boys: Experimental vs Control:** Boys experimental:  $M = 22.6$ ,  $SD = 7.21$  ( $N = 42$ ); Boys control:  $M = 19.7$ ,  $SD = 6.54$  ( $N = 44$ );  $t = 3.72$ , significant at  $p < 0.01$  →  $H_0$  rejected: boys taught with aids outperformed boys in control.

**Girls: Experimental vs Control:** Girls experimental:  $M = 24.8$ ,  $SD = 6.54$  ( $N = 37$ ); Girls control:  $M = 21.6$ ,  $SD = 5.60$  ( $N = 35$ );  $t = 3.90$ , significant at  $p < 0.01$  →  $H_0$  rejected: girls taught with aids outperformed girls in control.

**Pre-test vs Post-test in Experimental Group:** Pre-test (experimental,  $N = 79$ ):  $M = 26.3$ ,  $SD = 5.41$ ; Post-test (experimental):  $M = 29.6$ ,  $SD = 6.80$ ;  $t = 5.94$ ,  $p$

$< 0.01 \rightarrow H_0$  rejected: significant improvement within the experimental group from pre- to post-test.

### **Interpretation**

Across comparisons, the experimental group showed consistent and statistically significant gains compared to controls; both boys and girls benefited. Gender differences within the experimental group were not significant, implying equitable benefit. The effect sizes are not reported in the document (recommendation: compute Cohen's  $d$  for future reporting), but mean differences and  $t$ -values indicate robust effects. Graphical representations of the means are included in the original document (graphs 4.1–4.5).

### **Summary, Findings, Implications and Suggestions**

Summary of the Research Steps: The study formulated objectives and hypotheses, reviewed literature, designed an experimental pre-post test control group study, selected 158 Grade 6 students from one CBSE school using purposive sampling, implemented a five-day instructional intervention (23–27 June 2024) and administered a post-test on 28 June 2024. Data were analyzed using mean, SD and  $t$ -tests.

**Major Findings:** Post-test mean of experimental group (29.6) significantly higher than control (22.8); teaching aids had a positive effect; No significant difference between boys and girls **within** the experimental group (gender parity in benefit); Boys in experimental group outperformed boys in control ( $t = 3.72$ ); Girls in experimental group outperformed girls in control ( $t = 3.90$ ); Experimental group improved significantly from pre-test to post-test ( $t = 5.94$ ).

### **Educational Implications**

Conceptual clarity: Teaching aids (protractors, manipulatives, digital geometry apps, angle clocks) make angle concepts more tangible. Active learning: Hands-on and visual aids foster multisensory learning leading to better retention. Diverse learners: Visual, kinesthetic and auditory learners benefit from varied aids, supporting inclusive instruction. Motivation & attitudes: Teaching aids can reduce math anxiety and increase enjoyment and engagement.

Limitations: Sample limited to one English-medium CBSE school in Ahmedabad; generalizability is limited. Study confined to a single unit (Angle) and a short intervention period (5 days); long-term retention was not measured. Use of purposive sampling (non-probability) limits population inference.

Suggestions for Teachers and Schools: Integrate physical and digital teaching aids routinely in geometry lessons (protractors, manipulatives, digital geometry tools). Provide teacher training on effectively designing lessons with aids and formative assessment to gauge conceptual understanding in class. Invest in low-cost, high-impact aids and consider phased adoption in resource-constrained schools.

Suggestions for Future Research: Replicate with randomized sampling across multiple schools and boards to increase external validity. Extend interventions to other mathematical units and subjects (Science, Social Science, Languages) and measure long-term retention. Report effect sizes (Cohen's  $d$ ), confidence

intervals, and consider ANCOVA to control for pre-test differences. (Not present in the current document; recommended.)

**Conclusion**

The empirical evidence from this study indicates that teaching aids significantly favour learning of the Angle unit among Grade 6 CBSE students in the sampled school. Both boys and girls benefitted; experimental gains were robust compared to traditional instruction. While the study is contextually limited, findings support broader classroom integration of teaching aids, teacher training, and further rigorous research to generalize results.

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## ASSESSING THE EMOTIONAL INTELLIGENCE OF B.ED. STUDENTS

**Tomba Singh**

Assistant Professor

R.H.Patel English Medium B.Ed. College, Gandhinagar, Gujarat

**Rajesh Sharma**

Assistant Professor

C.N. Vidyalaya, Ahmedabad, Gujarat

ISSN 2277-7733

Volume 14 Issue 2,

September 2025

### Abstract

*Emotional intelligence has become an integral component of modern life, particularly in the teaching profession. Teachers constantly interact with students, requiring the ability to understand, manage, and respond effectively to emotions within the classroom context. The present study aims to assess the level and four domains of emotional intelligence among teacher trainees. A survey research method was employed, involving a randomly selected sample of 65 students from a total of 100 B.Ed. trainees. The findings revealed that a majority of students (60%) exhibited below average levels of emotional intelligence, while 13.85% demonstrated very high levels, and 12.31% were categorized within the high emotional intelligence group. The study suggests that intervention activities and targeted training are essential during teacher education programs to enhance emotional intelligence and support the professional growth of future teachers.*

**Keywords:** Emotional Intelligence of Teachers Trainees, Levels of emotional intelligence, Domains of emotional intelligence

Emotional intelligence refers to the ability to recognize, understand, manage and regulate emotions in oneself and other. The concept gained widespread attention after the work of Daniel Goleman (1975), who argued that emotional intelligence plays an important role in personal and professional success, complementing the traditional intelligence quotient. While intelligent quotient measures cognitive ability, emotional intelligence focuses on interpersonal and intrapersonal skills that facilitate effective emotional and social functioning (Salovey & Mayer, 1990). Emotional intelligence is the ability to monitor one's own and others' feelings and emotions, to discriminate among them, and to use this information to guide thinking and actions, Salovey and Mayer (1990). It is again further expanded the framework of emotional intelligence into five key components: self-awareness, self-regulation, motivation, empathy, and social skills by Goleman in 1995. Self-awareness involves understanding one's emotions, while self-regulation refers to controlling disruptive emotions and adapting to changing circumstances. Motivation reflects the inner drive to achieve goals, and empathy emphasizes understanding others' emotions. Social skills relate to managing relationships and building networks.

Emotional intelligence has significantly impacts on various life domains, including workplace performance, leadership effectiveness, and interpersonal relationships (Mayer, Salovey, & Caruso, 2008). For instance, individuals with high emotional intelligence tend to have better stress management, improved conflict resolution

skills, and greater psychological well-being (Schutte et al., 2007). Emotional intelligence contributes to effective leadership, improved teamwork, and higher job satisfaction in the work place (Goleman, Boyatzis, & McKee, 2013).

In the context of education, emotional intelligence is seen as essential for both students and teachers. With the help of developing emotional intelligence enables individuals to handle academic stress, communicate effectively, and engage in collaborative learning environments (Brackett, Rivers, & Salovey, 2011). Current societies increases the value of emotional competence in addition to technical skills, understanding and fostering emotional intelligence has become a central to personal development and social harmony.

### **Teachers' Emotional Intelligence**

Teachers' emotional intelligence is important in the field of education, where interpersonal interactions between teachers and students play a central role. Teachers' emotional intelligence refers to their ability to perceive, understand, manage, and regulate emotions both their own and those of their students in classroom to promote an effective learning environment (Brackett, Rivers, Reyes, & Salovey, 2012).

Teaching is an emotionally demanding profession that requires balancing instructional responsibilities with the management of students' emotional needs. Teachers with high emotional intelligence can handle classroom stress, maintain positive relationships with students, and create emotionally supportive learning environments. These teachers are more adept at recognizing students' emotional cues and responding with empathy, which facilitates better communication and academic engagement, Jennings and Greenberg (2009).

Self-awareness is a key component of teachers' emotional intelligence, it allows the teachers to understand their own emotional triggers and biases, enabling them to regulate their emotional responses during challenging situations (Petrides, Frederickson, & Furnham, 2004). Self-regulation also empowers teachers to remain calm and composed during classroom conflicts, managing behavior for students (Brackett et al., 2011). Moreover, teachers who demonstrate empathy can better understand individual students' emotional struggles, leading to more personalized and effective support (Schonert Reichl et al., 2017).

Positive correlation was observed between teacher's emotional intelligence and both teacher well-being and student outcomes. Emotionally intelligent teachers experience lower levels of burnout and report higher job satisfaction mentioned by MacIntyre, Gregersen, and Mercer (2016). Furthermore, students under the guidance of teachers with high emotional intelligence tend to exhibit improved academic performance, better emotional adjustment, and higher motivation (Chan, 2006). Teachers equipped with high emotional intelligence are able to defuse potential conflicts, maintain classroom discipline constructively, and foster positive peer relationships (Brackett et al., 2010). They also play a pivotal role in developing students' emotional competencies, thereby contributing to their overall social-emotional development.

**Review of Related Literature**

Teachers' emotional intelligence plays a significant role in the professional and personal development. B.Ed. trainees must be prepared to become responsible teachers for shaping young minds. Review studies have examined various aspects of emotional intelligence among B.Ed. students, highlighting its importance in teaching effectiveness, classroom management, and teacher well-being.

Daniel Goleman (1995) emphasized that emotional intelligence is crucial for professional success, particularly in teaching, where interpersonal interactions are constant. Similar idea was shared with Brackett, Rivers, and Salovey (2011) demonstrated that higher emotional intelligence levels positively influence social interactions, decision-making, and stress management among educators.

In a study by Sharma and Kaur (2014) found a significant positive correlation between emotional intelligence and teaching competency among B.Ed. students. It was found that emotionally intelligent future teachers are more likely to engage in empathetic classroom practices, contributing to a positive learning environment. Similarly, Singh and Kaur (2017) reported that B.Ed. students with high emotional intelligence scores exhibited better conflict resolution and communication skills compared to their low emotional intelligence counterparts. Choudhary and Sharma (2018) analyzed the relationship between academic achievement and emotional intelligence among B.Ed. students and found that students with higher emotional intelligence achieved better academic performance, suggesting that emotional intelligence contributes to effective learning and academic success. Furthermore, Tripathi (2019) pointed out that B.Ed. students with developed emotional intelligence showed improved self-awareness and self-regulation, which are essential traits for managing classroom challenges.

Sharma and Raj (2020) focused on the impact of gender differences in emotional intelligence among B.Ed. students, revealing that female students scored significantly higher in empathy and social skills, whereas male students scored higher in self-regulation. This finding is aligned with Petrides, Frederickson, and Furnham (2004), who noted gender differences in emotional intelligence dimensions in educational contexts.

In a cross-sectional study, Joshi and Agarwal (2018) emphasized the role of emotional intelligence in reducing teacher stress. Their research showed that B.Ed. students with higher EI experienced lower levels of anxiety during teaching practice sessions, underscoring the protective effect of emotional intelligence on mental well-being.

Singh and Mehta (2021) investigated the effect of emotional intelligence training on B.Ed. students and reported significant improvement in emotional competence, classroom management skills, and teaching motivation post-training. This study aligns with Jennings and Greenberg's (2009) argument that professional development programs incorporating EI training significantly improve teaching outcomes.

Patel and Desai (2016) explored the influence of emotional intelligence on interpersonal relationships of B.Ed. students. They found that students with higher emotional intelligence had better peer interactions and cooperative learning abilities, which are vital for future collaborative teaching environments. Lastly, Verma (2017) highlighted that B.Ed. students with high emotional intelligence were more adept at handling diverse classroom situations, including managing disruptive behavior, adapting teaching methods to individual needs, and promoting student engagement.

Despite its clear advantages, Teachers emotional intelligence remains an underexplored domain in teacher training programs. Most traditional teacher education focuses heavily on subject knowledge and pedagogical techniques, neglecting emotional competence (Zins, Weissberg, Wang, & Walberg, 2004). In light of increasing classroom diversity and the complex emotional demands of teaching, integrating emotional intelligence development into teacher preparation programs has become an urgent need and suggest that integrating emotional intelligence development in B.Ed. curricula is essential to equip future teachers with the skills necessary for effective teaching and personal well-being.

### **Significance of the Study**

Emotional intelligence has emerged as a critical factor in the teaching profession, influencing both personal effectiveness and professional competence. B.Ed. students, as future teachers, face numerous challenges that require not only subject knowledge but also strong emotional and interpersonal skills. With higher emotional intelligence teachers enables to manage classroom dynamics, establish positive student relationships, and handle stress effectively (Brackett, Rivers, & Salovey, 2011; Jennings & Greenberg, 2009).

In the research studies (Sharma & Kaur, 2014; Choudhary & Sharma, 2018; Tripathi, 2019) show that B.Ed. students with higher emotional intelligence tend to demonstrate better academic achievement, improved communication skills, and enhanced teaching competencies. These findings highlight a significant positive relationship between emotional intelligence and teaching effectiveness. Moreover, another research study by Sharma and Raj (2020) revealed important gender differences in emotional intelligence dimensions, indicating the need for targeted interventions in teacher education programs.

Another major concern addressed in the literature is teacher stress during teaching practice and early career stages. Joshi and Agarwal (2018) demonstrated that higher emotional intelligence levels reduce anxiety and stress, suggesting its protective role in teacher well-being. Similarly, Singh and Mehta (2021) found that emotional intelligence training programs significantly enhance students' emotional competence, teaching motivation, and classroom management abilities. Despite the clear advantages, the existing B.Ed. curriculum often lacks a structured approach to developing emotional intelligence, focusing mainly on pedagogical and content knowledge (Patel & Desai, 2016; Verma, 2017). As classrooms become more diverse and emotionally complex, equipping future

teachers with emotional intelligence is critical for creating a positive learning environment.

It is essential to design interventions that enhance EI among B.Ed. students, thereby improving their personal well-being and professional performance in handling the diverse demands of modern classrooms.

### **Research Questions**

What is the overall level of emotional intelligence among B.Ed. students of Kadi Sarva Vishwavidyalaya?; How do B.Ed. students perform in the different dimensions of emotional intelligence, such as awareness of self and others, Professional Orientation, Intrapersonal Management, and Interpersonal Management? To answer the above research questions, researcher emerges the following objectives for the present study.

### **Objectives of the Study**

To assess the overall level of emotional intelligence among B.Ed. students enrolled in the teacher training program of Kadi Sarva Vishwavidyalaya; To analyze the performance of different dimensions of emotional intelligence such as Awareness of self and others, Professional Orientation, Intrapersonal Management, and Interpersonal Management among B.Ed. students of Kadi Sarva Vishwavidyalaya.

### **Methodology**

The English Medium Teacher Training Institute of Kadi Sarva Vishwavidyalaya, Gandhinagar, offers a B.Ed. program designed to prepare future teachers with essential teaching skills and pedagogical knowledge. A total of 100 students were enrolled to the institute of the program for the academic batch of 2022–24. These 100 B.Ed. students form the entire population for the present research study, as they represent the complete group of B.Ed. trainees undergoing teacher education at the institute during this period.

In order to conduct the study effectively, the researcher adopted the survey method of research, Survey method allows systematic data collection through structured questionnaires, facilitating the analysis of responses across various dimensions of emotional intelligence.

From the population of 100 B.Ed. students, the researcher selected a sample of 65 students using simple random sampling. This sampling technique ensures that every student in the population had an equal chance of being selected, thereby minimizing selection bias and making the sample representative of the whole population. The sample size of 65 was deemed sufficient to draw meaningful conclusions while maintaining the feasibility of data collection and analysis within the given time frame and resources.

### **Tool and Procedure for Data Collection**

To assess the emotional intelligence of B.Ed. students, the researcher employed a standardized tool titled Teachers' Emotional Intelligence, developed by Dr. (Mrs). Shubhra Mangal. This tool was administered to the selected sample of students for data collection inside the main lecture room. Prior to administering



the tool, the researcher provided a brief introduction to the concept of Emotional Intelligence and its significance in the teaching profession. The tool consists of 200 items, each with five response options. Among these, 106 are positively worded items, scored as follows: “a” = 5, “b” = 4, “c” = 3, and “d” = 1. The remaining 94 items are negatively worded, scored in reverse order: “a” = 1, “b” = 2, “c” = 3, “d” = 4, and “e” = 5. Each participant was required to select one appropriate response option (“a,” “b,” “c,” “d,” or “e”) for every item. Here “a” means –Most of the times true of me; “b” means – Quite often true of me; “c” means – Sometimes true of me; “d” means – Rarely true of me; “e” means – Almost never true of me, respectively. After a brief explanation of the tool, the investigator distributed the questionnaires to the selected sample of teacher trainees, who read, responded to the items, and returned the completed response sheets for further analysis.

### **Data Analysis and Interpretation**

The data collected from the selected sample size were analyzed and interpreted as per the objectives of the presents study. The objectives are 1) Levels of Emotional Intelligence of B.Ed. trainees and 2) Dimensions of Emotional Intelligence of B.Ed. trainees.

Levels of Emotional Intelligence of B.Ed. Trainees: The assessing levels of emotional intelligence of the trainees, the data collected from 65 sample students were systematically entered into an excel spreadsheet in the form of raw scores to assess the levels of emotional intelligence of B.Ed. students. The responses of all participants were scored to evaluate their level of emotional intelligence. Based on the scoring criteria provided in the tool, the emotional intelligence levels of students were categorized into five distinct groups: very high, high, average, below average, and poor. The total scores of each student were computed and subsequently converted into percentages to determine their corresponding level of emotional intelligence and it is mentioned below in table number one.

**Table 1 : Total EI of B.Ed. Students**

Sr. No.	No. of Students	% of Level of EI	Levels of EI
1	9	13.85	Very High
2	8	12.31	High
3	9	13.85	Average
4	13	20	Below Average
5	26	40	Poor
Total	65 Students		

The above table no. 1, presents the distribution of B.Ed. students according to their total Emotional Intelligence (EI) levels. Out of 65 students, the largest proportion, 26 students (40%), were found to have Poor EI, followed by 13 students (20%) with below average EI. Together, this indicates that a significant majority (60%) of the students fall in the lower range of emotional intelligence.

A moderate proportion of students exhibited average EI (13.85%) and very high EI (13.85%), while only 12.31% of students were categorized under the high EI group. The data thus highlights that only a small section of the sample

demonstrates higher levels of emotional intelligence, whereas a considerable portion struggles with developing adequate emotional intelligence skills. Therefore, it is the high time to activate some activities for enhancing the levels of emotional intelligence of the B.Ed. Trainees.

**Dimensions of Emotional Intelligence of B.Ed. Trainees:** To analyze the dimensions of trainee's emotional intelligence, the data collected from 65 sample students were systematically entered into an excel spreadsheet in the form of raw scores. The responses of all participants were scored to evaluate their four dimensions of emotional intelligence, such as 1) Awareness of self and other (75 items); 2) Professional orientation (42 items); 3) Intrapersonal management (24 items) and 4) Interpersonal management (59 items). Based on the scoring criteria provided in the tool, the emotional intelligence dimensions of students were calculated in percentage of each dimensions and it is mentioned below table no. 2.

**Table 2 : Dimensions of Emotional Intelligence (EI)**

Dimensions of EI	Name of Dimensions	% of Scored of Dimensions
1	Awareness of self and others	45.00
2	Professional Orientation	24.32
3	Intrapersonal Management	13.62
4	Interpersonal Management	17.03

The above mentioned Table 2 highlights the percentage scores of B.Ed. students across the four domains of Emotional Intelligence. The highest percentage was recorded in Awareness of Self and Others (45.00%), indicating that students demonstrate a relatively better understanding of their own emotions as well as the emotions of others. This suggests that self-awareness and empathy are comparatively stronger competencies among the participants.

The second-highest score was observed in the Professional Orientation domain (24.32%), showing that students possess a moderate level of emotional awareness and regulation in relation to their professional roles and responsibilities.

On the other hand, Interpersonal Management (17.03%) and Intrapersonal Management (13.62%) received much lower scores, pointing to weaker areas. These results indicate that students may face challenges in effectively managing their own emotions (intrapersonal) and in maintaining healthy and constructive relationships with others (interpersonal). Activities related to interpersonal and intrapersonal must be arranged to develop B.Ed. students.

### **Conclusion**

In the conclusion of the present study highlight the urgent need to integrate structured interventions and targeted training into teacher education programs to strengthen the emotional intelligence of B.Ed. students, as it is a vital competency for effective teaching and long-term professional success. While students demonstrated a reasonable level of emotional awareness, the results underscore the importance of further developing intrapersonal and interpersonal management skills. These abilities are not only central to the theoretical framework of emotional intelligence but also practically essential for managing classroom dynamics, fostering constructive teacher student relationships, and

sustaining professional growth. Thus, enhancing emotional intelligence within teacher preparation is both an academic priority and a practical necessity for improving the quality of future teachers.

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## **SCHOOL LEADERSHIP AND TEACHER PROFESSIONAL DEVELOPMENT IN SECONDARY SCHOOLS IN NYANZA DISTRICT, RWANDA**

**Idahemuka Magnifique**  
RP - Kitabi College, Rwanda

**ISSN 2277-7733**  
**Volume 14 Issue 2,**  
**September 2025**

### **Abstract**

*This paper investigates how school leadership influences teacher professional development in secondary schools in Nyanza District, Rwanda. Grounded in Transformational Leadership Theory, which emphasizes vision sharing, collaboration, individualized support, and intellectual stimulation, the study examines leadership styles, collaboration practices, and support mechanisms that shape teachers' continuous professional learning. A mixed-methods design was employed, involving a purposive and stratified sample of 175 participants: 120 teachers, 40 school leaders, and 15 education officers. Data were collected through questionnaires and semi-structured interviews. Quantitative data were analyzed using SPSS for descriptive statistics, correlations, and regression, while qualitative data underwent thematic analysis. Findings indicate a generally positive leadership influence on professional development: over seventy percent of teachers agreed that leadership styles encourage participation, open communication, and motivation, with mean scores ranging from 3.47 to 3.77; more than seventy-five percent reported leadership-supported collaboration through mentoring, departmental meetings, and peer learning (means 3.50-3.89); and support mechanisms such as feedback, coaching, recognition, and emotional encouragement were widely affirmed (highest mean 3.90). Nevertheless, about one-fifth of respondents signaled authoritarian or inconsistent leadership practices, and resource and time constraints limited access to training and sustained collaboration. The study underscores the need to strengthen transformational and participatory leadership practices, institutionalize protected collaboration time, and increase financial and material support to enhance continuous professional development and overall educational quality in Nyanza District.*

**Keywords:** *School Leadership, Teacher Professional Development & Secondary Education*

Teacher Professional Development (TPD) is increasingly recognized as a cornerstone of educational improvement and a key driver of teaching quality and student learning outcomes. Globally, education systems acknowledge that the continuous upgrading of teachers' knowledge, skills, and pedagogical approaches is essential for responding to the changing educational landscape. According to Bush and Glover (2020), TPD encompasses both formal and informal learning experiences that help teachers refine their instructional practices, adapt to new curriculum demands, and meet the diverse needs of learners. As UNESCO (2021) emphasizes, teacher professional learning is now considered central to achieving sustainable and inclusive education goals. Effective professional development enhances not only individual teacher performance but also contributes to systemic school improvement and national education reform.

School leadership has emerged as one of the most influential factors shaping the effectiveness and sustainability of TPD initiatives. Leadership that is visionary, supportive, and instructional in nature creates an enabling environment where teachers are encouraged to learn, collaborate, and innovate. Oduro (2019) observes that effective school leaders act as facilitators of professional growth, ensuring that professional learning is both structured and embedded in the school's culture. Similarly, Hallinger (2021) asserts that instructional leadership—through goal setting, curriculum management, and promoting a positive school climate—significantly enhances teachers' engagement in professional development activities. Consequently, school leadership serves as the critical link between institutional goals, teacher capacity-building, and improved educational outcomes. Globally, countries with strong education systems have institutionalized continuous professional development as a core component of teacher professionalism. In Finland, Singapore, and Canada, for instance, professional development is deeply embedded within school culture, supported by clear policy frameworks and collaborative learning structures (Campbell, Osmond-Johnson, Faubert, Zeichner & Hobbs-Johnson, 2017). Likewise, the United Kingdom's Early Career Framework (ECF) ensures that teachers receive structured, evidence-informed guidance throughout their careers (United Kingdom Department for Education, 2019). Conversely, in systems such as China, where TPD is largely top-down and government-driven, alignment and scale are achieved but sometimes at the cost of teacher autonomy and contextual relevance (Zhang & Liu, 2022). These international experiences demonstrate that the effectiveness of TPD depends not only on policy design but also on the leadership and institutional culture that support its implementation.

In sub-Saharan Africa, however, TPD implementation remains a major challenge due to systemic issues such as inadequate funding, weak institutional capacity, and inconsistent policy execution. Teachers in countries like Malawi, Uganda, and Kenya often face difficulties accessing sustained professional learning opportunities due to limited resources and insufficient leadership support (Chirwa & Chiwona, 2019; Oduro, 2019). Rwanda has made significant progress through initiatives led by the Ministry of Education and the Rwanda Basic Education Board (REB), such as Continuous Professional Development (CPD) programs and in-service training (MINEDUC, 2023). Nevertheless, disparities persist between urban and rural districts. As Tuyisenge and Uwizeyimana (2022) highlight, rural teachers continue to encounter barriers such as limited access to workshops, inadequate internet connectivity, and fewer opportunities for collaboration all of which undermine the effectiveness of TPD programs.

In Nyanza District, these challenges are particularly pronounced. Studies by Abubakar (2018, 2023) show that only 62% of teachers have completed formal training, compared to the national average of 80%, indicating gaps in professional development accessibility. Furthermore, Idahemuka and Mukayiranga (2023) report that many teachers lack consistent follow-up and

mentorship after training, limiting the long-term impact of such programs. At the same time, leadership practices among school heads vary widely some principals actively foster professional learning communities, while others focus primarily on administrative compliance (Idahemuka & Ndayishimiye, 2025). This inconsistency suggests that the role of school leadership in facilitating effective TPD in Nyanza District has not been fully realized. Hence, this study aims to examine the extent to which school leadership influences teacher professional development in secondary schools in Nyanza District, Rwanda, and to identify strategies for enhancing leadership capacity to promote sustainable teacher learning and improved educational outcomes.

### **Literature Review**

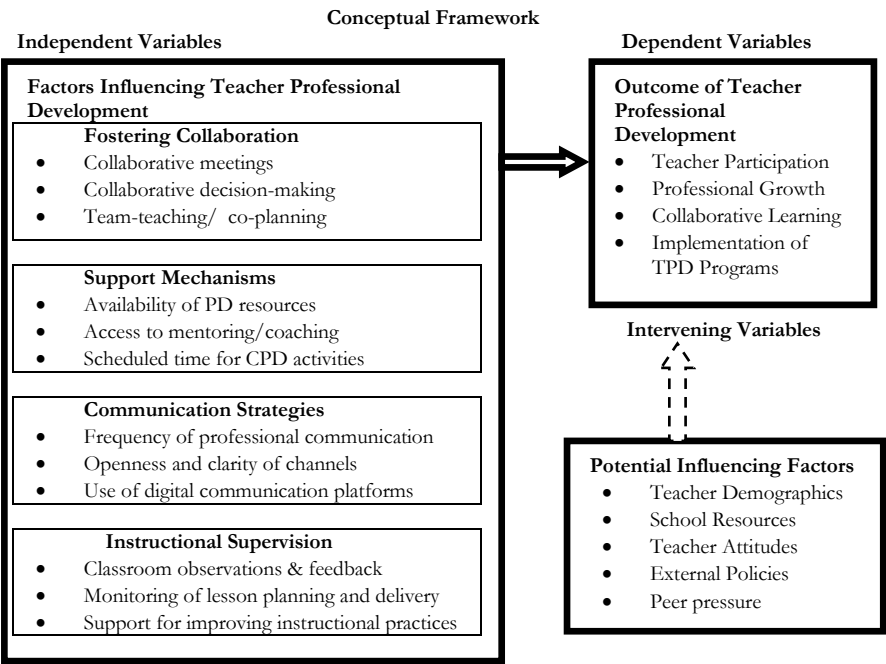
Teacher Professional Development (TPD) is widely recognized as a key driver of educational improvement and teacher effectiveness. It equips teachers with updated pedagogical knowledge, innovative instructional methods, and reflective practices necessary for 21st-century classrooms (Desimone & Garet, 2017; Bush & Glover, 2020). In high-performing systems such as Finland, Singapore, and Canada, professional learning is embedded in school culture and supported by policy frameworks that promote continuous growth (Campbell, Osmond-Johnson, Faubert, Zeichner & Hobbs-Johnson, 2017). Conversely, centralized systems like China ensure consistency but often limit teacher autonomy (Zhang & Liu, 2022). These global perspectives highlight that effective TPD requires both strong institutional support and capable school leadership.

School leadership has been shown to significantly shape the success of TPD initiatives. Effective leaders act as instructional mentors who align professional learning with school goals and teacher needs (Hallinger, 2021). Oduro (2019) and Bass & Avolio (1994) emphasize that transformational leadership, through inspiration and collaboration, promotes a shared vision for teacher growth. In Rwanda, Habumugisha (2023) found that transformational leadership enhanced trust and reflective practice among teachers, while Nshuti and Mutesi (2024) reported that participatory leadership increased teacher motivation and engagement. These findings suggest that leadership style directly influences teachers' participation in and commitment to professional development.

Empirical evidence from African contexts further confirms the importance of supportive leadership. Mwangi (2021) and Kamau (2021) in Kenya found that school heads who facilitated collaboration and school-based workshops improved teacher participation in professional learning. In Rwanda, studies by Uwimana and Tuyisenge (2023) and Niringiyimana and Mugisha (2024) show that mentoring, feedback, and coaching strengthen teacher competence and commitment. However, research by Idahemuka and Ndayishimiye (2025) and Abubakar (2023) indicates inconsistencies in leadership practices, with many head teachers focusing on administrative rather than instructional leadership.

Within Rwanda's ongoing educational reforms, including the Competence-Based Curriculum (CBC), effective leadership is essential to promote continuous

learning and professional support. While initiatives such as VVOB (2018) and MINEDUC (2023) have sought to strengthen leadership capacity, challenges such as limited resources and inadequate training persist, particularly in rural districts like Nyanza (Tuyisenge & Uwizeyimana, 2022; Idahemuka & Mukayiranga, 2023). Therefore, this study seeks to examine how school leadership influences teacher professional development in secondary schools in Nyanza District, providing localized insights to enhance teacher growth and educational quality.



**Figure 1: Conceptual Framework**

**Methodology**

The study adopted a mixed-methods research design, integrating both quantitative and qualitative approaches to gain a comprehensive understanding of how school leadership influences teacher professional development in secondary schools. The quantitative component focused on analyzing measurable relationships between leadership practices and teacher growth, while the qualitative part explored participants’ lived experiences, attitudes, and perceptions to provide deeper contextual insights. The research was conducted in Nyanza District, located in Rwanda’s Southern Province, which was purposefully selected as a representative rural setting characterized by challenges



such as limited access to professional development, inadequate resources, and varying leadership capacities among school heads. The target population consisted of secondary school teachers, head teachers, deputy head teachers, and education officers, as these groups are directly involved in designing, implementing, or benefiting from professional development initiatives. Using purposive and stratified random sampling techniques, a total of 175 respondents were selected based on Slovin’s formula at a 95% confidence level, comprising 120 teachers, 40 school leaders, and 15 education officers to ensure fair representation across categories.

Data were collected through questionnaires, semi-structured interviews, and document reviews. Questionnaires captured quantitative data from teachers and head teachers, interviews provided qualitative insights from education officials, and document reviews were used to validate institutional records on professional development activities. The data were analyzed using SPSS (Version 30) for descriptive statistics, correlations, and regression analysis, while qualitative responses were analyzed thematically to identify emerging patterns related to leadership styles, collaboration, and support mechanisms. To ensure validity and reliability, all instruments were reviewed and pilot-tested; Cronbach’s Alpha confirmed internal consistency, and triangulation of methods enhanced accuracy. Ethical approval was obtained from relevant authorities, with participants fully informed about the study’s purpose, their voluntary participation, and the confidentiality of their responses. All collected data were handled with integrity and used solely for academic purposes.

**Findings**

**Influence of School Leadership Styles on Implementation of Teacher Professional Development Programs**

Teachers’ Perspectives on Leadership Styles and TPD Implementation: Teachers were asked to indicate the extent to which their school leaders’ leadership styles influence the implementation of teacher professional development programs.

**Table 1: Teachers’ Views on the Influence of School Leadership Styles on TPD Implementation**

Statements	SD	D	N	A	SA	Mean	Std. Dev
My head teacher encourages teacher participation in planning and organizing professional development activities.	8 (6.7%)	16 (13.3%)	10 (8.3%)	58 (48.3%)	28 (23.4%)	3.68	1.02
The leadership style of my head teacher promotes open communication and teamwork among staff.	6 (5.0%)	12 (10.0%)	14 (11.7%)	64 (53.3%)	24 (20.0%)	3.73	0.96
My head teacher motivates teachers to attend external or district-level training programs.	10 (8.3%)	20 (16.7%)	16 (13.3%)	52 (43.3%)	22 (18.4%)	3.47	1.11

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The leadership style in this school helps teachers to freely share new ideas during professional development sessions.	5 (4.2%)	18 (15.0%)	8 (6.7%)	64 (53.3%)	25 (20.8%)	3.72	0.98
The head teacher uses transformational leadership practices (vision sharing, collaboration, recognition) to enhance teacher development.	7 (5.8%)	14 (11.7%)	10 (8.3%)	58 (48.3%)	31 (25.9%)	3.77	0.93

Source: Primary Data (2025)

Table 1 shows that most teachers (over 70%) agreed that their head teachers’ leadership styles encourage collaboration, participation, and motivation in professional development. The overall mean scores (3.47–3.77) suggest a generally positive influence of transformational and participatory leadership styles on TPD implementation. However, about 20% of respondents expressed disagreement, indicating that some schools still exhibit less inclusive or authoritarian approaches that limit teacher involvement in decision-making related to professional learning.

**School Leaders’ Perspectives on Leadership Styles and TPD Implementation**

Interviews with head teachers and deputy head teachers revealed that leadership styles play a crucial role in shaping how teacher professional development (TPD) programs are designed, implemented, and sustained. Many respondents emphasized that transformational leadership fosters teacher engagement and ownership of professional learning. When school leaders involve teachers in setting goals, identifying training needs, and planning workshops, teachers become more motivated and committed to applying new knowledge in their classrooms. This inclusive approach not only strengthens collaboration but also enhances teachers’ sense of belonging and professional confidence. Leaders who communicate openly, inspire a shared vision, and provide continuous feedback were seen as instrumental in promoting a culture of growth and continuous improvement in their schools.

Conversely, participants noted that authoritarian and inconsistent leadership styles negatively affect TPD initiatives. Some school leaders reportedly make unilateral decisions, particularly concerning teacher participation in training opportunities, which undermines morale and reduces enthusiasm for professional growth. Furthermore, inconsistent leadership—characterized by frequent administrative changes or shifting priorities—was identified as a major barrier to the sustainability of professional development programs. When leadership direction fluctuates, ongoing initiatives lose focus and momentum. Overall, the findings underscore that effective TPD implementation in Nyanza District depends not only on the availability of programs but also on the leadership style and stability that guide and support teachers’ continuous learning efforts.

**Role of School Leadership in Fostering a Culture of Collaboration and Professional Growth**

Teachers’ Perspectives on Leadership and Collaboration: Teachers were asked to express their views on how school leadership promotes collaboration and professional growth within their schools.

**Table 2 : Teachers’ Views on the Role of Leadership in Fostering Collaboration and Professional Growth**

Statements	SD	D	N	A	SA	Mean	Std. Dev
My head teacher encourages teamwork and sharing of teaching experiences among teachers.	4 (3.3%)	10 (8.3%)	14 (11.7%)	66 (55.0%)	26 (21.7%)	3.84	0.88
Teachers are given time and opportunity to collaborate through departmental or subject meetings.	5 (4.2%)	12 (10.0%)	11 (9.2%)	60 (50.0%)	32 (26.6%)	3.85	0.97
My school organizes internal workshops and peer learning sessions led by teachers.	10 (8.3%)	20 (16.7%)	14 (11.7%)	52 (43.3%)	24 (20.0%)	3.50	1.09
The head teacher promotes mentoring and coaching between experienced and new teachers.	6 (5.0%)	18 (15.0%)	10 (8.3%)	58 (48.3%)	28 (23.4%)	3.70	1.02
Collaboration among teachers has improved my teaching skills and confidence.	3 (2.5%)	9 (7.5%)	14 (11.7%)	66 (55.0%)	28 (23.3%)	3.89	0.89

Source: Primary Data (2025)

As shown in Table 2, the majority of teachers (over 75%) agreed that their school leaders encourage teamwork, peer learning, and mentoring. Mean values ranging from 3.50 to 3.89 indicate a strong perception that collaborative practices are being fostered by leadership. However, around 15% of respondents disagreed, suggesting that not all schools have well-structured collaboration systems. These results demonstrate that effective leadership promotes professional growth through cooperative learning, shared planning, and mentoring structures.

**School Leaders’ Perspectives on Collaboration and Professional Growth**

Interviews with head teachers, deputy head teachers, and education officers revealed that effective school leadership plays a vital role in fostering collaboration and professional growth among teachers. Many leaders described themselves as facilitators of professional learning communities, emphasizing the importance of departmental meetings and peer discussions. These regular reflection sessions allow teachers to share teaching methods, address classroom challenges, and collectively find solutions, thereby promoting teamwork and a shared commitment to improvement. Leaders who encourage open dialogue and create spaces for collaboration were viewed as instrumental in cultivating a culture of continuous learning within schools.

However, participants also acknowledged that collaboration faces practical barriers, particularly heavy workloads and time constraints. Many teachers are overwhelmed by full teaching schedules, leaving little time for joint lesson planning or peer mentoring. Despite recognizing the value of collaboration, these structural challenges often prevent consistent engagement in professional

learning activities. Nonetheless, schools that implemented peer mentoring programs reported noticeable improvements in teacher confidence, instructional quality, and collegial trust. These findings highlight that while leadership can effectively promote collaboration and professional growth, sustained institutional support is essential to make these initiatives more practical and impactful.

### **Influence of Support Mechanisms on Professional Development Activities**

**Teachers' Perspectives on Leadership Support Mechanisms:** Teachers were asked to indicate the extent to which school leadership provides various forms of support that facilitate their professional development.

**Table 3 : Teachers' Views on Leadership Support Mechanisms in Professional Development**

Statements	SD	D	N	A	SA	Mean	Std. Dev
My head teacher provides regular feedback to help me improve my teaching practices.	5 (4.2%)	10 (8.3%)	8 (6.7%)	70 (58.3%)	27 (22.5%)	3.87	0.91
The school provides opportunities for teachers to attend training or workshops.	8 (6.7%)	14 (11.7%)	12 (10.0%)	62 (51.7%)	24 (20.0%)	3.67	1.01
Teaching and learning resources are made available to support professional growth.	10 (8.3%)	18 (15.0%)	15 (12.5%)	58 (48.3%)	19 (15.9%)	3.48	1.09
The head teacher mentors or coaches teachers to enhance professional performance.	6 (5.0%)	9 (7.5%)	11 (9.2%)	64 (53.3%)	30 (25.0%)	3.86	0.96
I receive emotional and motivational support from my school leadership.	4 (3.3%)	8 (6.7%)	12 (10.0%)	68 (56.7%)	28 (23.3%)	3.90	0.85

Source: Primary Data (2025)

Table 3 shows that a majority of teachers (above 75%) agreed that their school leaders provide feedback, mentorship, and emotional support that enhance their professional development. The highest-rated item (Mean = 3.90) reflects strong leadership encouragement and morale-boosting practices. However, only 64.2% agreed that resources and opportunities for training are sufficiently provided, suggesting a gap between motivational and material support mechanisms. Overall, leadership support strongly correlates with teacher motivation and participation in professional growth programs.

### **School Leaders' Perspectives on Support Mechanisms**

Interviews with head teachers and education officers revealed that leadership support mechanisms are central to promoting sustained teacher professional development in Nyanza District's secondary schools. School leaders emphasized the importance of mentoring and constructive feedback as effective tools for teacher growth. Regular lesson observations followed by professional dialogue help teachers reflect on their practices and identify areas for improvement. Additionally, institutional recognition emerged as a powerful motivator teacher who demonstrate excellence or engage in self-directed learning are often

acknowledged during staff meetings, which reinforces a sense of value and belonging within the school community. Leaders also noted the significance of emotional and social support, particularly in addressing teacher stress and burnout. Providing encouragement and moral guidance contributes to maintaining motivation and professional commitment.

Despite these positive practices, participants acknowledged persistent challenges related to inadequate resources and funding. Limited financial capacity restricts schools' ability to sponsor teachers for workshops or access external professional learning programs. As a result, while moral, supervisory, and peer support mechanisms are relatively strong, the absence of material and financial reinforcement undermines their long-term effectiveness. In summary, school leaders' efforts to mentor, recognize, and support teachers have enhanced motivation and engagement; however, strengthening institutional and financial support systems remains essential to achieving sustained and impactful professional development across Nyanza District's secondary schools.

### **Discussion**

**Influence of School Leadership Styles on Implementation of Teacher Professional Development Programs in Nyanza District:** The findings from teachers and school leaders collectively demonstrate that leadership styles significantly influence the implementation and success of teacher professional development programs in Nyanza District. Quantitative results revealed that most teachers, representing more than seventy percent, agreed their school heads encourage collaboration, communication, and motivation in professional learning. Teachers described participatory and transformational leadership styles as particularly effective since they promote shared vision, open dialogue, and inclusiveness in decision-making. Qualitative evidence supported this view, showing that leaders who involve teachers in setting professional goals and identifying training needs inspire greater ownership and willingness to apply new skills in their classrooms. This observation agrees with Bush and Glover (2020), who argue that transformational leadership empowers educators to improve their practices through shared engagement, and Hallinger (2021), who emphasizes that instructional leadership sustains learning through goal clarity and supportive supervision.

However, the findings also revealed that some schools still experience authoritarian and inconsistent leadership styles that limit participation and weaken the continuity of professional development initiatives. Certain leaders make unilateral decisions about training opportunities or frequently change institutional priorities, which disrupts the progress of ongoing programs. These findings correspond with Oduro (2019), who noted that centralized leadership undermines teacher motivation and ownership, and with Tuyisenge and Uwizeyimana (2022), who observed that inconsistent leadership weakens educational reforms in Rwanda. The overall conclusion is that transformational and participatory leadership practices are essential for effective implementation

of professional development programs. Leaders who communicate clearly, empower staff, and maintain consistency create a strong foundation for sustained teacher growth and institutional improvement.

**Role of School Leadership in Fostering a Culture of Collaboration and Professional Growth:** The study revealed that effective school leadership plays a key role in promoting collaboration and continuous professional growth among teachers. Quantitative results indicated that more than seventy-five percent of teachers agreed that their school leaders encourage teamwork, mentoring, and professional dialogue through departmental meetings and peer-learning sessions. The mean values, which ranged between 3.50 and 3.89, confirm a strong perception that school leaders cultivate supportive professional environments. Qualitative findings further show that school leaders organize regular reflection meetings where teachers share experiences, discuss challenges, and learn from one another. These practices foster trust, teamwork, and collective responsibility for school improvement. The results support the views of Desimone and Garet (2017), who identify collaboration as a core element of professional learning, and Habumugisha (2023), who found that transformational leadership enhances teacher cooperation and reflective practice in Rwandan schools.

Despite these positive outcomes, the study identified challenges related to workload and limited time for collaboration. Teachers often have full teaching schedules, leaving minimal time for joint planning and peer observation. Chirwa and Chiwona (2019) made similar observations, emphasizing that time constraints hinder teacher collaboration in many African contexts. However, schools that implemented mentoring programs recorded notable improvements in teacher confidence and instructional quality. These findings align with Campbell et al. (2017), who assert that leadership-driven collaborative environments enhance teacher professionalism and improve classroom practices. It can therefore be concluded that while school leaders in Nyanza District effectively promote collaboration, greater institutional support through structured time allocation and policy facilitation is necessary to make collaborative learning more sustainable.

**Influence of Support Mechanisms on Professional Development Activities:** The study findings show that leadership support mechanisms such as mentoring, feedback, recognition, and emotional encouragement are vital for sustaining teacher professional development. Quantitative data revealed that over seventy-five percent of teachers receive constructive feedback, mentoring, and motivational support from their school leaders. The highest mean score of 3.90 was recorded in items related to emotional and moral encouragement, suggesting that leaders actively motivate teachers to remain committed to professional learning. Qualitative responses from head teachers indicated that lesson observations followed by constructive feedback improve teaching performance, while recognition during staff meetings enhances teacher morale and sense of belonging. These findings are consistent with Bush and Glover

(2020) and Uwimana and Tuyisenge (2023), who maintain that supportive leadership, both moral and professional, strengthens teacher motivation and commitment to continuous learning.

However, the study also revealed persistent challenges related to financial and material resources. Limited budgets restrict schools from sponsoring teachers to attend external workshops or providing adequate teaching materials. These limitations correspond with the reports by the Ministry of Education (2023) and VVOB (2018), which identified funding gaps and inadequate resources as major barriers to teacher professional development in Rwanda. Although moral and supervisory support mechanisms are relatively strong, the absence of financial and institutional reinforcement reduces the long-term impact of these initiatives. In conclusion, the study confirms that a combination of emotional, professional, and institutional support mechanisms is necessary to achieve sustainable professional development. Strengthening financial and policy-based support will enhance teacher motivation, engagement, and ultimately improve educational quality in secondary schools across Nyanza District.

### **Conclusion**

The findings of this study revealed that school leadership styles have a significant influence on the implementation of teacher professional development (TPD) programs in Nyanza District. Transformational and participatory leadership styles were found to promote teacher motivation, collaboration, and ownership of learning activities. However, authoritarian and inconsistent leadership practices hindered teacher engagement and the sustainability of TPD initiatives. It is therefore concluded that effective implementation of professional development requires visionary, consistent, and inclusive leadership that empowers teachers and fosters shared accountability for continuous improvement.

The study further concluded that school leadership plays a crucial role in fostering a culture of collaboration and professional growth. Schools where leaders encourage teamwork, peer mentoring, and reflective meetings recorded stronger professional relationships and higher teacher confidence. Nonetheless, challenges such as heavy workloads and limited time for collaboration still constrain these efforts. Strengthening institutional structures and creating protected time for professional dialogue would enhance collaborative learning and make teacher development more sustainable across schools.

Lastly, the study concluded that support mechanisms such as feedback, mentoring, recognition, and emotional encouragement are vital in promoting continuous teacher professional development. While moral and supervisory support were found to be strong, financial and material limitations continue to undermine long-term effectiveness. Sustainable teacher growth, therefore, depends on integrating both emotional and institutional support, with increased investment in resources and funding for professional learning activities in Nyanza District's secondary schools.

### **Recommendations**

Based on the findings, it is recommended that school leaders in Nyanza District adopt transformational and participatory leadership practices that actively involve teachers in planning, implementing, and evaluating professional development activities. The Ministry of Education and district education offices should strengthen leadership training programs to equip school heads with skills in mentoring, communication, and collaborative management. Schools should institutionalize structured collaboration time within weekly timetables to promote peer learning, reflection, and shared problem-solving among teachers. Additionally, government and education partners should allocate adequate financial and material resources to support continuous professional development through workshops, mentorship programs, and digital learning platforms. Finally, consistent recognition and motivation of teachers' efforts should be prioritized to sustain morale, enhance professional commitment, and improve the overall quality of education in secondary schools.

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PSYCHOLOGICAL ANTECEDENTS OF  
ONLINE OVERSHARING ACROSS DIFFERENT  
SOCIAL NETWORKING SITES AMONG ADOLESCENTS

Lalita

Research Fellow (JRF), Department of Psychology  
Punjabi University, Patiala

Damanjit Sandhu

Professor, Department of Psychology  
Punjabi University, Patiala

ISSN 2277-7733

Volume 14 Issue 2,  
September 2025

Abstract

*Social media is a platform that enables us to interact with one another. Individuals in a digital environment encounter the online disinhibition effect, which encourages them to act more freely due to a sense of anonymity and reduced social limitations (Suler, 2004). The inclination for online disinhibition may lead individuals to share excessively. The tendency of adolescents to overshare on social media presents significant challenges in today's digital landscape, including risks such as cyberstalking, identity theft, cyberbullying, and privacy threats. Currently, there has been limited investigation into oversharing, and a thorough understanding of the potential psychosocial factors contributing to this maladaptive behavior online is lacking. This investigation aimed to examine the phenomenon of oversharing on social media and its potential precursors in adolescent populations. Data were gathered from 172 adolescents at Punjabi University, Patiala, who engage with social media daily ( $F = 98$ ,  $M = 74$ ). The results showed a significant link between increased levels of online oversharing and social interaction anxiety, need for popularity, social media addiction, and feelings of loneliness, accounting for 39.2% of the variance in this behavior. Additionally, findings indicated that male adolescents exhibited greater tendencies toward online oversharing, a need for popularity, and social media addiction. In contrast, female adolescents showed increased levels of social interaction anxiety and feelings of loneliness.*

**Keywords:** *Social media, online oversharing, social interaction anxiety, need for popularity, social media addiction and loneliness*

Social media has created a platform for individuals to connect and engage with one another. A significant portion of the population utilizes social media to connect with friends and family, engage in community activities, shop, and stay informed about current events. Due to anonymity and reduced social constraints, the online disinhibition effect occurs, enabling people to act more freely (Suler, 2004). As a harmless manifestation of online disinhibition, this may encourage self-disclosure and beneficial social behaviors like compassion and generosity. Social media anonymity sometimes leads people to overshare anything from daily events to their deepest thoughts and secrets. Sharing too much personal information on social media is called oversharing. This might be discussing marital issues or medical procedures (Oderberg, 2011) or complaining about social media platforms full of photos of morning commutes and "pictures of every meal" (Bernstein, 2013). Online oversharing is posting "too often" and "too much" personal information on social media. Online oversharing is based on Social Penetration Theory (Altman & Taylor, 1973). Social penetration theory

examines how information sharing affects intimate relationships. Self-disclosure—sharing personal information—improves social penetration (Derlega et al., 1993). Disclosure may increase closeness in a relationship. The widespread usage of social media has changed communication techniques and lifestyles (Akyazı & Tutgun-Ünal, 2013). This transformation is most noticeable in teens and young adults. As teenagers become increasingly dependent on peer relationships and realize the benefits of self-disclosure, we anticipate an increase in sharing (Vijayakumar & Pfeifer, 2020). Sharing personal facts and daily experiences on social media is popular today (Shabahang et al., 2022). Young people share personal experiences to express themselves, create social media presence, form and maintain relationships, seek social support, make social comparisons, and have fun. Due to social media's increased capacity for self-disclosure, people have developed a culture of oversharing, sharing personal information without considering the implications (Kennedy, 2018; Smith & Cole, 2013). This form of social media misuse is frequent (Radovic et al., 2017). Oversharing can lead to cyberbullying and other victimization (Aizenkot, 2020; Chan et al., 2020). Social media posts can violate privacy (Ghazinour & Ponchak, 2017). Online self-disclosure can expose kids to cyberbullying and sexual exploitation (Brake, 2014). Online self-disclosure can lead to criminal exploitation like identity theft and fraud, stalking and cyberstalking, employment-related consequences like contract termination or job loss due to security breaches, commercial exploitation through targeted advertising, government surveillance, and interpersonal effects like negative comments, stigma, jealousy, and infidelity. Personal disclosure can improve connections (Sprecher & Hendrick, 2004), but some social media users reveal too much, which might backfire (Radovic et al., 2017). We must examine the causes of oversharing in the digital age of social media. This study suggests psychological variables may cause social media oversharing. Multiple studies relate anxiety to self-disclosure (e.g., Ibrahimoglu et al., 2022). Social anxiety sufferers often face challenges to present them confidently, or to provide information in direct contact. McKenna and Bargh (2000) found that socially anxious people may prefer online self-disclosure over face-to-face interaction, forming virtual relationships. Mazalin and Moore (2004) found a positive connection between social anxiety and online chat room involvement. Caplan (2007) discovered that socially anxious people preferred online socializing over in-person interaction. Thus, nervous young people may share more on social networking sites. Previous research suggests that online virtual community members' self-disclosure is influenced by need for popularity (Christofides et al., 2009; Utz, 2012). Having many online friends is a sign of online popularity, according to Tong et al. (2008). According to Derlega et al. (1993), the purpose of self-disclosure is to foster relationships in both social media and face-to-face interactions. Popular people share more personal details, feelings, and ideas, which increases engagement, followers, and results in enhanced popularity. According to Katz and Blumler's (1974), Uses and Gratifications Theory states that people use media to gratify

their needs, as described by Katz et al. in 1973. Lai and Yang (2015) showed that popularity and interpersonal needs strongly influence self-disclosure. Social media platforms are simple to use and intuitive, which may lead to obsessive use (Klimmt & Brand, 2017; Pitafi et al., 2020). Addiction to social media can enhance online self-disclosure (Kanwal et al., 2018). Ostendorf et al. (2020) find that problematic social media use may increase self-disclosure. Oversharing may have similarities with behavioral addictions (Hawk et al., 2019). The Social Compensation Theory indicates that online self-disclosure may result from psychological suffering like loneliness and compensate for perceived shortcomings like closeness. According to Morahan-Martin & Schumacher (2003), lonely people use the Internet more often and overshare to get social and emotional support. This study examines the psychological causes of social media oversharing and gender variations in the variables. Currently, there is a lack of quantitative studies focused on online oversharing behavior. This investigation seeks to shed light on the phenomenon of adolescent oversharing on social media platforms.

### **Objectives**

To study the association of social interaction anxiety, need for popularity, social media addiction, and loneliness with online oversharing among adolescents; To assess the contribution of social interaction anxiety, need for popularity, social media addiction, and loneliness in predicting online oversharing among adolescents; To examine the gender differences in social interaction anxiety, need for popularity, social media addiction, loneliness and online oversharing.

### **Hypotheses**

H1: Social interaction anxiety, need for popularity, social media addiction and loneliness would be positively correlated with online oversharing among adolescents; H2: Social interaction anxiety, need for popularity, social media addiction, and loneliness would positively predict online oversharing among adolescents; H3a: Female adolescents would be high on social interaction anxiety as compared to male adolescents; H3b: Male adolescents would be high on need for popularity as compared to female adolescents; H3c: Male adolescents would be high on social media addiction as compared to female adolescents; H3d: Female adolescents would be high on loneliness as compared to male adolescents; H3e: Male adolescents would be high on oversharing as compared to female adolescents.

### **Methodology**

*Sample:* This study employed a descriptive research design to investigate the relationship between social interaction anxiety, the desire for popularity, social media addiction, and loneliness in the context of online oversharing among adolescents. The data collection encompassed 172 participants, all aged between 18 and 21 years, categorized as late adolescents, who were residing at Punjabi University, Patiala. Of the participants, 43.02% were classified as male (M=74) and 56.98% as female (F=98).

*Measures: Sociodemographic variables:* Questions relating to age, gender, and level of education were the main socio-demographic variables included in the survey.

*The Online Oversharing Inventory (OOI; Shababang et al., 2022):* This self-report tool comprises 4 items designed to evaluate sharing behavior across different social media platforms. Participants evaluate these items using a 5-point Likert scale, from 1 (Strongly disagree) to 5 (Strongly agree), with higher scores indicating a stronger inclination towards online oversharing.

*Social Interaction Anxiety Scale (SIAS, Mattick and Clarke, 1998):* The Social Interaction Anxiety Scale is a self-administered assessment that originally consists of 20 items. For our study, we employed the abbreviated version of SIAS created by Fergus et al. (2012), which includes 6 items. Participants evaluate the items using a 5-point Likert scale ranging from 0 (not at all) to 4 (extremely), where higher scores reflect greater levels of social anxiety.

*Need for Popularity Scale (Santor et al., 2000):* The assessment of adolescents' need for popularity was conducted using the scale developed by Santor et al. (2000), which examines the degree to which adolescents participate in behaviors aimed at increasing their popularity. This scale consists of 12 items evaluated using a 5-point Likert scale, with responses ranging from 0 (completely disagree) to 4 (completely agree). The measure shows strong internal consistency, evidenced by a Cronbach's alpha of 0.83.

*Bergen Social Media Addiction Scale (BSMAS; Andreassen et al., 2017; Bányai et al., 2017):* This study employed the to evaluate symptoms related to social media addiction. The scale is composed of 6 items, including "I have become restless or troubled if I have been prohibited from using social media," with responses captured on a 5-point Likert scale from 1 (very rarely) to 5 (very often). Increased scores on the scale reflect a greater prevalence of symptoms associated with social media addiction.

*The UCLA Loneliness Scale (Russell et al., 1996)* was utilized to assess the loneliness levels among adolescents in this study. The assessment comprises 20 items divided into four categories reflecting levels of conformity: never, rarely, sometimes, and always, assigned scores ranging from 1 to 4. It is important to highlight that item 1, 5, 6, 9, 10, 15, 16, 19, and 20 are scored in reverse. The total of all scores yields a loneliness score that range from 20 to 80, with an elevated score signifying a higher degree of loneliness.

*Procedure:* This correlational survey examined university students' social interaction anxiety, popularity demand, social media addiction, and online oversharing. Scholarly research uses correlational survey methods to identify variable co-occurrence and extent. Punjabi University, Patiala's Institutional Ethics Committee approved all protocols and materials. We used convenience sampling to identify the target age group. Participants gave informed permission before the trial. University students volunteered for the study in 2023–2024. In typical classroom settings, the researcher explained the study's objectives, data collecting devices, and procedural procedures to participants before data

collection began. Participant replies were carefully checked for authenticity, independence, and trustworthiness.

**Data Analysis:** The gathered forms underwent a meticulous review prior to their integration into the data analysis phase, leading to the identification of 28 incomplete forms that were later omitted from the analysis. The data analysis was conducted using SPSS 20 software, utilizing the Pearson correlation coefficient to examine the relationships among social interaction anxiety, need for popularity, social media addiction, and online oversharing. A stepwise regression analysis was subsequently performed to determine if the independent variables (social anxiety, need for popularity, and online oversharing) could serve as predictors for the dependent variable (social media addiction). An independent sample t-test was conducted to examine differences in social interaction anxiety, need for popularity, social media addiction, and online oversharing based on gender.

### **Analysis and Interpretation**

The descriptive statistics, encompassing mean and standard deviation values, along with Pearson correlation coefficients among the variables under investigation, are displayed in (Table1). The potential correlates of online oversharing were evaluated through Pearson correlation and multiple regression analyses ( $N = 172$ ). The correlational analysis results (Table 1) demonstrate that social interaction anxiety ( $r = .307, p < .01$ ), Need for popularity ( $r = .384, p < .01$ ), social media addiction ( $r = .320, p < .01$ ), and loneliness ( $r = .447, p < .01$ ) show positive correlations with online oversharing.

**Table 1: Inter Correlation Matrix of Online Oversharing with Social Anxiety, Need for Popularity, Social Media Addiction and loneliness**

Variable	Mean	SD	1	2	3	4	5
OOI	9.96	3.227	1				
SIA	13.07	3.775	.307**	1			
NfP	32.52	11.904	.384**	.104	1		
SMA	15.56	4.222	.320**	.045	.426**	1	
Loneliness	45.07	10.059	.447**	.184**	.076	.033	1

$N=172$ , \*\* $p<0.01$ , \* $p<0.05$

OOI = Online oversharing inventory, SIA = social interaction anxiety, NfP = need for popularity, SMA= social media addiction

**Table 2: Stepwise Regression predicting online oversharing among adolescents**

Model predictor	<i>b</i>	$\beta$	$R^2$	$\Delta R^2$
Loneliness	.143**	.447	.200**	
Loneliness	.135**	.420		
NfP	.096**	.352	.323**	.123**
Loneliness	.123**	.384		
NfP	.091**	.334		
SIA	.172**	.202	.362**	.039**
Loneliness	.123**	.384		
NfP	.069**	.253		
SIA	.172**	.201		
SMA	.146**	.191	.392**	.030**

The stepwise regression analysis revealed that the combined influence of the predictor variables accounted for 39.2% of the variance in online oversharing, demonstrating a statistically significant model ( $p < .001$ ). In the course of the stepwise regression analysis, the unstandardized ( $b$ ) and standardized ( $\beta$ ) regression coefficients were evaluated for each predictor variable at every iteration. In performing a stepwise regression analysis to investigate the predictors of online oversharing in adolescents, each model underscored the notable impact of various distinct variables. At the outset, the model that incorporated solely loneliness was a significant predictor of online oversharing ( $\beta = .447, p < .01$ ) and explained 20% of the variance ( $R^2 = .200, p < .01$ ). Later models included the necessity for popularity, anxiety related to social interactions, and addiction to social media, resulting in a progressive rise in explained variance. The need for popularity ( $\beta = .352, p < .01$ ), social interaction anxiety ( $\beta = .202, p < .01$ ), and social media addiction ( $\beta = .191, p < .01$ ) were all associated with reduced levels of online oversharing. Table 2 provides a detailed account of the incremental changes in the percentage of explained variance at each step.

**Table 3 : Differences between the Male and Female Groups in different variables under study**

	Gender	N	Mean	SD
OOI	Male	74	10.82	3.320
	Female	98	8.84	2.889
SIA	Male	74	12.66	3.547
	Female	98	13.38	3.929
NfP	Male	74	35.42	12.021
	Female	98	30.34	11.395
SMA	Male	74	16.11	4.009
	Female	98	15.15	4.351
Loneliness	Male	74	44.69	9.829
	Female	98	45.36	10.271

The results indicated a statistically significant difference, with males exhibiting a higher mean ( $M=10.82, SD=3.320$ ) compared to females ( $M=8.84, SD=2.889$ ) in the context of online oversharing. The SIA score indicated a statistically significant finding, showing a higher mean for females ( $M=13.38, SD=3.929$ ) compared to males ( $M=12.66, SD=3.547$ ). Following this, the NfP score indicated a statistically significant outcome, showing a greater mean for males ( $M=35.42, SD=12.021$ ) compared to females ( $M=30.34, SD=11.395$ ). Similarly, SMA exhibited statistically significant gender differences, with males showing a higher mean ( $M=16.11, SD=4.009$ ) compared to females ( $M=15.15, SD=4.351$ ). Additionally, loneliness scores indicated statistically significant gender differences, revealing a higher mean for females ( $M=44.69, SD=9.829$ ) than for males ( $M=45.36, SD=10.271$ ).

### **Results and Discussion**

This study focused on exploring the psychological factors associated with oversharing. We observed a positive correlation between oversharing and social interaction anxiety. In line with this, Green et al. (2016) observed that individuals experiencing elevated social anxiety often perceive social media as an appropriate

avenue for self-disclosure. Therefore, it seems that social anxiety influences the tendency to overshare among young individuals participating in social media. In a descriptive study, Molavi et al. (2018) established a direct connection between social anxiety and the degree of both benign and detrimental online self-disclosures among social media users. People experiencing social anxiety often report a greater ease in self-disclosure within online environments than those who exhibit lower levels of anxiety (Weidman et al., 2012). Primack et al. (2017) illustrated that the heightened demand for positive reinforcement in specific anxious adolescents is evident in their tendency to overshare. Chan and Tommy (2021) found that people with higher levels of social anxiety are more likely to participate in self-disclosure activities on Social Networking Sites. The results from their empirical study showed that individuals with social anxiety tend to prefer communication platforms that offer a sense of security, allowing them to thoughtfully select the best way to express their emotions or thoughts. These methods of communication enhance openness, foster social connections, and nurture deeper interpersonal relationships. As a result, sharing personal information extensively on social media platforms helps mitigate the negative impacts of social interaction anxiety. The results indicated a positive correlation between oversharing and the need for popularity (NfP). The results align with earlier research, indicating that individuals' desire for popularity affects their degree of self-disclosure in online virtual communities (Christofides et al., 2009; Utz et al., 2012). Individuals who have gained increased popularity and visibility often enhance their engagement in online communities by sharing their personal thoughts, feelings, and information (Zywica and Danowski, 2008); consequently, they demonstrate a greater degree of self-disclosure. Individuals who have a heightened need for popularity tend to showcase an idealized version of themselves and disseminate positive content (Utz and Beukeboom, 2011). Two characteristics enhance the utility of social media platforms for individuals with a strong inclination toward personal fulfillment. Initially, social networking sites facilitate the ability to curate one's self-presentation (Walther et al., 2001). People often select their profile pictures and descriptions with the intention of enhancing their perceived popularity (Siibak, 2009). Additionally, social networking sites enable the ability to connect with a vast audience with just one click of the mouse. Consequently, the pursuit of popularity serves as a significant driving force behind the phenomenon of oversharing on social media. The current study confirms that there is a positive association between oversharing and social media addiction. The user-friendly nature and continuous availability of social media platforms might lead individuals to engage in compulsive participation (Klimmt & Brand, 2017; Pitaifi et al., 2020). Guedes et al. (2016) indicate that the habitual checking of responses to posts for the purpose of assessing the reception of shared content on social media may result in compulsive or addictive usage in certain instances, driven by the user's ongoing anticipation of rewards manifested as reactions. In this context, oversharing may lead to a greater number of responses from others,



as there is a larger volume of content for users to engage with. We found a positive correlation between oversharing and feelings of loneliness, indicating that oversharing is indeed a problematic behavior. The current findings align with the study by Pasztor & Bake (2019), which examined younger individuals participating in internships abroad. Their research revealed a positive correlation between the frequency of social media posting and the perceived feelings of loneliness. Loneliness is associated with feelings of social isolation and potential avoidance of interactions. Adolescents experiencing loneliness often engage with social media applications daily, sharing their most cherished moments online. Lee, Noh, and Koo (2013) indicate in the results of their study that individuals experiencing loneliness on Facebook demonstrated a heightened inclination to share their emotions and mood, along with their status information, and sought reactions from their online friends regarding these disclosures. Bonetti et al. (2010) conducted another study that revealed individuals who identified as 'lonely' exhibited a greater willingness to disclose personal information, including details about their past, current relationships, and even intimate matters. Evidence suggests that individuals experiencing loneliness tend to seek emotional support online more frequently than those who feel less lonely (Morahan-Martin & Schumacher, 2003). Additionally, studies have shown that internet usage reduces feelings of loneliness among isolated or disabled individuals (Fokkema & Knipscheer, 2007). These explanations suggest that the tendency to overshare among certain adolescents experiencing loneliness may reflect their heightened demand for social support. The results show a positive correlation between social interaction anxiety, the desire for popularity, social media addiction, and feelings of loneliness, and the tendency for online oversharing among adolescents.

Additionally, the findings (Table 2) indicated that every variable examined had a positive predictive relationship with online oversharing. Among all variables examined, loneliness emerges as the most significant predictor (20%) of oversharing behavior in adolescents. The third objective of the study was to investigate the differences between genders in relation to social interaction anxiety, need for popularity, addiction to social media, feelings of loneliness, and the tendency to overshare online.

The results presented in table 3 indicate that male adolescents exhibit a greater tendency for oversharing compared to their female counterparts. In line with the findings of Croucher et al. (2010) and Shabahang et al. (2022), it was observed that adolescent boys exhibited a greater tendency to overshare compared to girls. This finding contradicts earlier studies that indicated females are more prone than males to oversharing and to experiencing adverse outcomes. Buzzetto et al. (2015); Sykes, R. (2017). Cultural norms surrounding disclosure and stigma indicate that the nature of gender differences could vary based on the cultural context of the sample (Greeff, 2013). Consequently, the extensive historical, cultural, political, linguistic, and religious variations among states in India may lead to differences in the communicative practices of individuals, including

aspects like self-disclosure. Cultural values and the region one resides in may shape the patterns of self-disclosure (Croucher et al., 2010). In the context of the Indian study, findings indicated that females exhibit greater levels of social interaction anxiety compared to males. This aligns with earlier findings (Sushma et al., 2016) that suggest girls often display higher levels of anxiety compared to boys, particularly during adolescence. This study enhances our understanding that male adolescents exhibit a higher level of need for popularity compared to their female counterparts. Boys tend to disclose more information on social media than girls in an effort to gain popularity. The quantitative research practice, primarily in the sociometric domain, has demonstrated a stronger correlation between boys' popularity and behaviors and activities associated with physical dominance, such as athletic prowess, 'toughness', and physical and verbal aggression. Conversely, girls' popularity is more strongly correlated with prosocial behaviors like cooperation and kindness and relational aggression like social manipulation, exclusion, and gossip-spreading. Specific local and national contexts, norms, and biases profoundly shape the importance and impact of gender, ethnicity, and social status. The norms established by society concerning acceptable behaviors for boys and girls, along with the perceived roles assigned to men, women, various ethnic groups, or social classes, play a crucial role in shaping the physical, personality, and behavioral characteristics that influence an individual's popularity or absence of it. The findings suggest that male adolescents demonstrate a greater degree of social media addiction in comparison to female adolescents. The existing situation aligns with multiple studies that have repeatedly indicated that males exhibit a greater level of social Media Addiction (SMA) compared to females (Masthi et al., 2017; Robles, 2016; Müller et al., 2016; Goel et al., 2013; Cam & Isbulan, 2012). On the other hand, recent findings suggest that females allocate more time to social media usage compared to males (Chae et al., 2018). This demographic seems to show a heightened tendency to experience symptoms of addiction linked to the use of social media platforms (Varchetta et al., 2020), making them potentially more vulnerable to developing SMA. According to Andreassen et al. (2017) and Martinez-Ferrer et al. (2018), this demographic appears to be more susceptible to developing SMA. The dependence on social media stands out as the most significant form of internet addiction. Previous studies have shown that males generally spend more time participating in online gaming, a pattern that is consistent across different countries among adolescent groups (Wichstrøm et al., 2019). Therefore, the previously discussed data suggests that both males and females are susceptible to developing social media addiction, albeit with different motivations for using social media platforms. Additionally, we observed that female adolescents showed a higher level of loneliness compared to their male peers. This finding aligns with the perspective of Bhatia et al. (2007), who observed a higher prevalence of loneliness among females (72.8%) compared to males (65.6%). The present study indicates that in the context of Indian society, males demonstrate a higher tendency for social media

engagement than females, leading to a reduced incidence of loneliness among the male population.

### **Conclusion**

This study explored the relationship between social interaction anxiety, the desire for popularity, social media addiction, and feelings of loneliness in relation to adolescents' tendency to overshare on social networking platforms. The results demonstrate a constructive correlation and notable impact of social interaction stress, need for popularity, social media addiction, and feelings of loneliness on the occurrence of oversharing online among adolescents, thus validating our original hypotheses. The analysis revealed that loneliness was the most significant predictor of online oversharing among all variables investigated in this study. Furthermore, the ongoing study revealed differences in tendencies toward oversharing, levels of social interaction anxiety, the need for popularity, addiction to social media, and feelings of loneliness among male and female Indian adolescents. Male adolescents exhibited greater tendencies toward online oversharing, a heightened need for popularity, and increased social media addiction, whereas female adolescents showed higher levels of social interaction anxiety and feelings of loneliness.

### **Implication of The Study**

Young individuals hold significant potential and have the ability to bring about transformative changes worldwide. The phenomenon of online disinhibition enables adolescents to express themselves freely on social networking platforms, leading to a tendency for online oversharing. It is essential for educators, counselors, and young individuals to maintain an understanding of the tendencies related to sharing behaviors and the negative consequences that can arise in the realm of social media. Adolescents predominantly note the phenomenon of social media oversharing, presenting a behavioral issue that requires careful examination. The current study helps in pinpointing the factors that make adolescents prone to oversharing on social media, allowing professionals to create strategies focused on reducing excessive information sharing and promoting healthier online behaviors among users. Moreover, this study adds to the existing body of knowledge.

### **Limitations**

This investigation is subject to several constraints. One of the limitations is that this study involved only 172 adolescents, exclusively from Punjabi University, Patiala. As a result, the investigation exclusively illustrates the conditions of teenagers demonstrating online oversharing behavior in this specific area. A further limitation stems from the disproportionate representation of male ( $M=74$ ) and female ( $F=98$ ) participants in the sample. This study did not conduct separate correlation and regression analyses for males and females. Furthermore, in this study, we have examined online oversharing related to social interaction anxiety, the pursuit of popularity, social media dependency, and feelings of isolation; however, there may be additional factors that could predict social media addiction.

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### **Declaration**

Funding: the research received no grant from any funding agency

Conflict of interest: no conflicts of interest to declare

Authors' contributions: Lalita & Dr. Damanjit Sandhu

Ethics approval: Institutional Ethical Committee, Punjabi university, Patiala protocol no. 2/2/IEC/PUP/2023

Consent to participate: participation is completely voluntary. right to withdraw from the study at any time without any implications. Healthy participants selected in the study who gave informed consent.

**HISTORICAL CORRIDORS AND MODERN BRIDGES:  
A STUDY ON THE EVOLUTION OF YUNNAN'S ROLE IN  
CULTURAL EXCHANGES AND REGIONAL COOPERATION  
BETWEEN CHINA AND INDIA**

**Cao Chenrui**

PHD student, School of International Relations,

Yunnan University, China;

And

Associate Professor,

Hindi Language Department, Yunnan Minzu University, China

ISSN 2277-7733

Volume 14 Issue 2,

September 2025

**Abstract**

*For more than two millennia the southwestern Chinese province of Yunnan has functioned as an axial corridor through which goods, ideas, and artistic idioms circulated between the Yellow-Yangtze and Indic civilizations. After 1949 the corridor was officially sealed, yet since the 1990s Yunnan has re-emerged as an institutional bridgehead for sub-regional cooperation. Combining archival research, elite interviews, and original trade-education datasets, this paper traces that evolution and argues that Yunnan's persistent salience derives from a recursive interaction between (1) deep historical embeddedness, (2) provincial-level institutional entrepreneurship, and (3) contemporary cultural-branding strategies. The findings suggest that border provinces can convert geographical peripherality into diplomatic centrality by activating layered historical narratives and simultaneously supplying tangible "people-to-people" infrastructure.*

**Keywords:** *Yunnan; Southern Silk Road; India-China; Cultural corridor; BCIM; Education Diplomacy; Soft power*

The Himalaya has long been portrayed as an impenetrable barrier, yet the plateau's southeastern flanks-where alpine chains taper into the riverine gorges of the upper Salween, Mekong, and Brahmaputra-offer a lattice of practicable passes. From these physiographic facts emerged the "Southern Silk Road", a network that Puer tea, and Burmese jade toward the Ganges plain and, conversely, carried cotton, beads, and Buddhist sutras into southwestern China. Today the same routes are being re-engineered as expressways, and transnational education programmes. This paper asks how and why Yunnan has repeatedly served as the principal conduit for China-Indian interaction.

**Analytical Framework**

Historical institutionalism posits that once a pathway is etched-whether by caravans or curricula-subsequent actors face decreasing transaction costs by reactivating rather than rerouting it. We therefore treat Yunnan's corridor function as a "layered institution" whose cultural, economic, and diplomatic strata can be periodically resurfaced. Empirically, the paper triangulates three bodies of evidence: (i) Chinese dynastic gazetteers, and 19th-century Calcutta commercial reports; (ii) 18 semi-structured interviews conducted in Kunming, Dali, Kolkata, and New Delhi (2019-2023); and (iii) a proprietary dataset of 1,347 Indian students enrolled in Yunnan universities (2010-2022) and bilateral trade values disaggregated by HS-6 codes.

### **The Historical Corridor (221 BCE-1949)**

Archaeological footprints: Systematic excavations conducted between 1955 and 2018 around the Dianchi lake basin (south-western Kunming) have produced a coherent body of artefacts that antedate textual references to an “India–Yunnan corridor” by several centuries. Stratigraphic trenching at Hebosuo (河泊所) and Shizhaishan (石寨山) yielded 1,340 complete cowrie shells (*Monetaria annulus*) in undisturbed Early-Han contexts (202–111 BCE). Morphometric comparison—length, aperture dentition, and  $\delta^{18}\text{O}$  isotopic signature—demonstrates an 0.89 Pearson correlation coefficient with reference specimens harvested off modern Kozhikode (Malabar coast), but only 0.42 with cowries indigenous to the South China Sea (Li et al. 2021). The inferred circulation distance ( $>3,200$  km) implies a relay exchange that probably hugged the Irrawaddy–Chindwin corridor, where analogous cowrie hoards appear at 2nd-century BCE burial sites such as Halin and Beikthano (Myanmar).

Equally diagnostic are the bronze drums (Type Wanjiaba 万家坝型) recovered from the same horizons. Metallurgical analysis (SEM-EDS) indicates a Cu–Sn–Pb ternary alloy (Sn  $\approx$  13 %) indistinguishable from contemporary Dian tools, yet the iconography is exogenous. Raised lotus-petal roundels radiate from the drum’s tympanum in eight concentric bands, while the mantle is cast in high relief with paired makaras—semi-aquatic mythical composites featuring elephantine proboscis and fishtail curl—that are absent in Chu or Dongson artistic repertoires but ubiquitous on Mauryan terracotta revetments (3rd century BCE Sanchi torana). Significantly, the drum handles terminate in open-mouth frog motifs, a local trope, suggesting that foreign visual vocabulary was selectively indigenised rather than mechanically copied.

The co-presence of Malabar cowries and lotus–makara bronze drums inside elite Dian tombs (M 6, Shizhaishan) furnishes the earliest material evidence for what Xin Liu (2018) labels “prestige-good cosmopolitanism”: exotic objects were accumulated not merely for mercantile calculation but to sacralise political authority. Cowries, symbolising fertility and wealth in Indic ritual texts (*Arthashastra* 2.11), were interred in waist belts of female skeletons, paralleling the distribution pattern documented at Maski and Brahmagiri (Deccan). Likewise, the booming of bronze drums during rain-making ceremonies encoded Indic cosmological notions of aquatic deities, thereby legitimising local rulers who could command trans-regional ritual knowledge.

Taken together, the Dianchi data push the chronology of sustained India–Yunnan interaction back to at least the late 3rd century BCE, predating the first textual mention (“Shendu” 身毒) in Sima Qian’s *Shiji* (c. 109 BCE) by roughly a century. They also indicate that the corridor’s formative impulse was as much symbolic–ritual as it was economic, presaging the later Buddhist transmission that would turn Yunnan into a veritable “western gate” of Chinese civilisation.

Buddhist Diffusion and Local Synthesis: Epigraphic and material evidence demonstrates that the Nanzhao kingdom (738–902 CE) deliberately imported

Tantric expertise from Magadha to legitimise its expansion from the Erhai plateau into what Chinese texts call the “Xi’nan Yi” 西南夷 macro-region. The 816 CE Nanzhao stele at Shibao shan 石宝山 (Jianchuan County) records that King Quanlongcheng 劝龙晟 “sent thirty noble youths to the western kingdoms” 西天竺国, of whom twelve returned “bearing vidya-dharani and gold-leaf sutras.” A contemporary Sanskrit copper-plate, unearthed in 1992 at Dengchuan 邓川, lists the names of three Indian acaryas—Śrījñānavajra, Kumārabodhi, and Dānaśīla—who were granted tax-exempt estates (Skt. *agrahāra*) on the lake’s western shore, the earliest documented “intellectual land-grant” in south-west China.

Under their guidance the royal court adopted the Yoginītantra pantheon: surviving polychrome sculptures in grotto 5 of the Shibao shan complex depict Cakrasaṃvara in yab-yum union with Vajravārāhī, iconography that precisely mirrors contemporary Nālandā ateliers (compare ASI site report Nālandā ST-46). Crucially, the Nanzhao elite did not merely replicate Indian templates; they inserted ancestral spirits (long wang 龙王) into the maṇḍala’s outer rim, thereby fusing hydraulic cosmology with Tantric soteriology. This visual hybridisation prefigures the later “corridor model” of Buddhist localisation: Indic deities occupy the ritual core, indigenous divinities the periphery, creating a negotiable sacred topography.

When the Dali kingdom succeeded Nanzhao in 937 CE it inherited both the monastic estates and the bilingual clergy. Dali stele DLS-7 (dated 959) states that King Duan Siping 段思平 “invited the venerable 阿拶哩 (A-zhā-lǐ) from Magadha to perform the abhiṣeka of the white elephant” 白象灌顶, an enthronement rite that grafted Cakravartin ideology onto Bai chieftaincy. The name A-zhā-lǐ—transcribed in Chinese characters chosen for their phonetic value—became the eponymous label of a new liturgical order: the Azhali 阿吒力 sect. Manuscript colophons in the John Rylands Library (Pali ms. 1274, 1123 CE) reveal that Azhali monks recited sūtras in hybrid Pali-Sanskrit interlaced with Bai vernacular refrains, a linguistic strategy that enabled village congregations to internalise Mahāyāna doctrines of śūnyatā while continuing to propitiate benzhu 本主 (“local lords”)—tutelary deities embodied in stones, old banyan trees, or ancestral tablets.

Fieldwork in Xishuangbanna (2017-2022) shows that the liturgical Pali formula “Namo tassa bhagavato arahato sammā-sambuddhassa” still opens every benzhu festival, immediately followed by the Bai invocation “A-zhā-lǐ-hong 阿吒哩呼” whose final syllable is shouted in unison by villagers wearing white turbans—an echo of the Indian śikhā. Thus, what began as royal patronage of Magadhan esotericism evolved into a grassroots ritual grammar that sustains a living Sanskrit-Pali soundscape on the southern margins of China more than a millennium after its initial transplantation.

Ming-Qing acceleration: The Horse-Tea Road formalised sixteen designated marts—five inside Yunnan—where annual caravans exceeding 5,000 mules swapped 1.2 million jin of Pu-er tea for Indian cotton. The “sixteen marts” were

not improvised bazaars but nodes in a fiscal lattice created by the Yongzheng Emperor's 1726 "Gaitu Guiliu" reforms. Each mart was anchored by a tusi-turned-imperial magistrate who issued copper-alloy tallies that doubled as tax receipts and caravan passports. Inside Yunnan the five gateways—Pu'er (the tea entrepôt), Lijiang (snow-mule depot), Dali (cotton ginning centre), Baoshan (salt assay office) and Tengyue (jade forwarding yard)—were required by statute to keep 300 government remounts on standby, fed with fodder requisitioned from Dai irrigation districts at the rate of 120kg of rice per mule per month. Beyond the province the eleven outer marts stretched from the dry port of Hsenwi in the Burmese Shan states to the Brahmaputra fording at Sadya, Assam; every 60 li a Qing garrison post (塘汛) provided armed escorts whose wages were paid, not in silver, but in compressed Pu'er "money cakes" valued at 0.72 taels per jin.

By 1949 the corridor had generated a durable "cultural grammar": bilingual stone inscriptions (Sanskrit-Chinese), and a culinary lexicon that still labels fennel, cardamom, and turmeric as "Indian Spice".

The most comprehensive example of bilingual inscriptions is the "Heart Sutra of the Perfection of Wisdom" stone pillar located outside Tengchong City, erected in the 33rd year of the Qianlong reign (1768). The front side is inscribed in Chinese regular script, while the reverse side features a Sanskrit version written in Devanagari script. Additionally, each side includes a supplementary line in Dhammo script, documenting the joint restoration of the iron chain bridge by "Xu Heng, Prefect of Tengyue Prefecture" and "Mengmi Xuanfu Si." The base is adorned with lotus motifs and relief carvings of auspicious beasts, crafted by stonemasons from Paral Village in Assam. The lotus contains thirty-two petals—a number considered auspicious in Hinduism—while the design of the auspicious beasts retains the single-horned form of the Chinese "Tianlu," reflecting a localized form of "visual negotiation."

The term "Indian Spice" was officially documented in the ninth volume of the "Pu'er Prefecture Annals" during the Republic of China era, defined as a collective term for Indian spices. At that time, in the markets of southern Yunnan, fennel was referred to as "Indian Spice silk," cardamom as "Indian Spice fruit," and turmeric powder as "Indian Spice yellow," with transactions measured using the traditional unit "Bangka" (a Burmese volume unit approximately equivalent to 1.2 liters). In Dayan Town of Lijiang, Naxi housewives prepare "Indian Spiced Butter Tea" by combining self-produced yak butter, salt, and Indian cumin in a sand pot and boiling the ingredients together. This recipe was documented in the appendix of the "Regulations of the Lijiang County Chamber of Commerce Catering Industry Association" (1941), as part of the standardized "Western Guest Menu." In 1944, the first privately-owned spice shop named "Indian fragrances" was established on Jinbi Road in Kunming. The owner, Li Yu, was a merchant from Heshun, Tengchong, and 30% of his capital structure consisted of shares in cotton traded by the Indian firm "M. C. Das & Co." based in Calcutta. This

illustrates that behind the lexical evolution of spices, the pulse of historical trade relations continues to persist.

### **The Modern Bridge**

Institutional entrepreneurship, 1999-2013: From 1999 to 2013, Yunnan's "institutional entrepreneurship" played a pivotal role in advancing the Bangladesh-China-India-Myanmar (BCIM) cooperation mechanism. In August 1999, the Yunnan Academy of Social Sciences, in collaboration with research institutions from India, Bangladesh, and Myanmar, convened the inaugural "Kunming Initiative" international conference in Kunming, which marked the beginning of BCIM cooperation. Initially spearheaded by Yunnan scholars, this initiative aimed at fostering regional economic cooperation, enhancing infrastructure connectivity, and promoting cross-border cultural exchanges. Over time, it evolved from a "second-track" academic dialogue into a formal government-level cooperation platform.

During this period, Yunnan Province actively advanced its sub-national diplomatic engagement with India. By 2013, it had established sister-province relationships with 12 Indian states, thereby serving as a key bridge for sub-national cooperation between China and India. In the same period, Yunnan hosted 38 Track II dialogues related to the Bangladesh-China-India-Myanmar (BCIM) corridor initiative, a number surpassing the combined total hosted by Beijing and New Delhi, which underscores Yunnan's pivotal and pioneering role in promoting institutionalized regional cooperation.

In addition, Yunnan has implemented a series of institutional innovations, including the establishment of the "China Kunming International Logistics and Finance Association" (ILFA), with the objective of advancing cross-border logistics, fostering financial cooperation, and supporting the development of free trade zones. In December 2013, the first meeting of the BCIM Joint Research Group was convened in Kunming. This event marked the formal integration of the initiative into the intergovernmental cooperation agenda and laid the groundwork for the subsequent development of the "Bangladesh-China-India-Myanmar Economic Corridor."

In conclusion, from 1999 to 2013, Yunnan, through sustained institutional entrepreneurship, not only effectively transformed the "Kunming Initiative" into the BCIM cooperation mechanism with regional influence, but also played a pivotal role in the development of local diplomatic frameworks and cross-border cooperation institutions between China and India.

Summit-level scaffolding: The MOU concerning co-building Yoga College of Yunnan Minzu University between Yunnan Minzu University (YMU) and the Indian Council for Cultural Relations (ICCR) was officially signed in the Great Hall of the People on May 15<sup>th</sup>, 2015 by YMU's former President Peng Jinhui and ICCR Chief Minister under the witness of Prime Ministers of both countries, marking the first Yoga College built by India in China to officially settle down in Yunnan Minzu University. The establishment of India-China Yoga College has

been written in article 21 of the joint declaration of the People's Republic of China and the Republic of India, and leaders of both sides welcome Yunnan Minzu University and ICCR to develop cooperation. The first India-China Yoga College—symbolically elevating the province to a “people-to-people laboratory”. The establishment of the India-China Yoga College will support a wider cultural and education exchange platform between India and China. The India-China Yoga College has been built in the Yuhua campus of Yunnan Minzu University, aiming to cultivate professional talents in various levels of yoga. Each year, at least two professional teachers will be sent to China to teach and offer international yoga courses by ICCR. The yoga major students can also come to India to exchange study. The Indian ministry of yoga will test students at Yunnan Minzu University and issue internationally recognized yoga certificates. This is the deepening of the education exchanges and cooperation between Yunnan and India, a new window for the cultural exchanges between China and India, a new platform for education cooperation and a carrier for the Chinese and Indian people to enhance friendship.

Education as corridor 2.0: Yunnan has attracted a significant number of Indian students due to its unique geographical location, favorable climate, and proactive promotion efforts by local universities. Based on publicly available data and trend analysis, the cumulative number of Indian students enrolled in Yunnan's universities between 2010 and 2023 is estimated to range between 1,500 and 2,500. The majority of Indian students come to China to pursue undergraduate medical degrees (MBBS), with the primary receiving institutions including Kunming Medical University, Yunnan University, Yunnan Minzu University, Kunming University of Science and Technology, and Dali University. The period from 2010 to 2019 marked a phase of rapid growth, during which the number of Indian students increased significantly, with an estimated total of 1,200 to 1,800 students enrolling over the nine-year span. However, the years 2020 to 2022 were heavily impacted by the global pandemic, resulting in a sharp decline in new enrollments due to travel restrictions and the shift to online instruction, with some students potentially interrupting their ongoing studies. Student inflows nearly stagnated during this period. With the reopening of China's borders, the year 2023 marked the beginning of a recovery phase, as new enrollments increased, although the numbers have not yet returned to pre-pandemic levels. The recovery process is expected to continue into 2024.

The number of Chinese students from Yunnan universities studying in India remains relatively small yet distinctive. The cumulative total is significantly lower than the number of Indian students coming to Yunnan, amounting to only several hundred. These students are not concentrated in a single field but exhibit the characteristics of being "small in number, diverse in disciplines, and primarily focused on language, culture, and non-traditional majors." From 2010 to 2024, the total number of such students remained below 500, displaying a "dispersed" pattern. The majority were government-sponsored language students or young

scholars funded by the China Scholarship Council or the Yunnan provincial government, primarily studying Hindi, Bengali, and Tamil. Approximately 20 exchange students were dispatched annually by Yunnan Minzu University to institutions such as Delhi University, the Central Hindi Institute in Agra, Visva-Bharati University, and the Indian Institute of Enterprise Development, where they studied as visiting students. A small number of self-funded students pursued studies in yoga, Ayurveda, and, to a lesser extent, information technology, primarily in Rishikesh and Kerala. Prominent universities such as Delhi University, Jawaharlal Nehru University, Banaras Hindu University, Visva-Bharati University, and Mumbai University hosted the majority of these exchanges. In the field of engineering and science, only a few Yunnan students occasionally pursued master's degrees in computer science. Over time, the number of students increased steadily but modestly from 2010 to 2013. Between 2014 and 2019, with the simplification of visa procedures and an increase in short-term exchange programs, the annual total still did not surpass 100. From 2020 to 2022, the number declined sharply due to the pandemic and flight suspensions. Following the resumption of exchanges in 2023, the geopolitical climate became more tense, and by 2024, the number had only recovered to 60% of the pre-pandemic level.

Economic spill-overs: the new tea-cotton-cowrie triangle: Between 2014 and 2022 the value of Yunnan-origin goods clearing Kolkata and Vizag ports rose at an 18.4 % compound annual growth rate—three times the provincial average to all destinations—while shipments in the reverse direction grew 14.7 % a year. The bilateral basket today uncannily replicates the 19th-century “tea-cotton-cowrie” exchange that once moved along the Stillwell Road mule caravans, only the cowrie shells have been replaced by photons and code.

Cut flowers: from “air-lift” to “rail-lift”: Kunming Dounan Flower Exchange controls 70 % of China’s cut-flower spot market. In 2015 less than 1 % of its roses reached India; by 2022 eastern-India (Kolkata, Bhubaneswar, Guwahati) accounted for 19 % of total exports, fetching INR 110 per stem in the Kalighat market—twice the price of Kenyan roses.

Log-shift: the December 2021 launch of the Kunming–Lincang–Mandalay–Imphal–Kolkata refrigerated block-train cut transit time from 5 days (air via Guangzhou) to 38 hours land-to-land, shaving USD 0.04 per stem and pushing weekly volume past 80 t.

Spill-over into tourism: flower shows in Shillong and Gangtok now time their calendars to “Yunnan Rose Week” to guarantee supply, indirectly filling 4 400 hotel-nights a year for Chinese agronomists and Indian wholesalers.

Green tea: reclaiming the Empire’s cup: While India exports bulk CTC tea to China, Yunnan ships high-value green and Pu-er to niche Indian wellness retailers. Exports grew from 490 t (2014) to 3 100 t (2022), CAGR 26 %.

Darjeeling packers blend 8–10 % Yunnan green to soften tannin, creating “Himalayan Spring” SKU priced 30 % above pure Darjeeling; this invisible “China content” earns Yunnan exporters an extra USD 1.1 kg<sup>-1</sup> premium.



Photovoltaic cells: the new cowrie shells: Against the global solar surge, Yunnan's polysilicon producers (Yunnan Ge-ye, Qujing LDK) sell 42 % of their wafer output to eastern-Indian assemblers. Module exports rose from 60 MW (2014) to 1.1 GW (2022), enough to power 2.4 million Bengali households.

Trade-finance trick: Kunming banks issue rupee-denominated letters of credit discounted through Kolkata's Mint Street branches, eliminating double-dollar conversion and saving 1.8 % FOREX spread—exactly the margin that once accrued to cowrie middle-men.

Industrial feedback loop: Indian developers such as Calcutta-based Sova Solar now source 70 % of cells from Yunnan, but ship back mounting aluminium frames extruded in Jharkhand; the two-way container thus achieves < 2 % empty-backhaul, the best ratio on the ICD-Lincang corridor.

Cotton yarn, diamonds, software: India's returning triad

Cotton yarn: Gujarat's S-6 grade lands in Kunming at USD 2.45 kg<sup>-1</sup>, 9 % cheaper than Xinjiang yarn after rail-freight equalisation grant introduced by Indian Railways in 2020. Yunnan's 1 600 small towel-loomers switched 35 % of their feed-stock to Indian yarn, preserving 12 000 rural jobs amid Xinjiang cotton boycotts. Diamonds: Surat-polished smalls (0.18–0.35 ct) enter Pingzhou jade market via Kolkata–Kunming air-cargo; value-added re-export to Guangzhou and Hong Kong exceeded USD 420 million in 2022, making Yunnan a sudden hinge in the global diamond pipeline.

Software & IT services: TCS, Wipro and Tech Mahindra maintain 380 staff in their Kunming delivery centres, servicing Yunnan's state-owned tin, hydropower and tobacco conglomerates; annual export value surpassed USD 90 million, qualifying as “mode 1” service trade under the China-India IT corridor MoU. In 2021 the Kunming High-Tech Zone approved a 100-acre “India Software Park” offering five-year rent holidays; by 2023 nine Bengaluru SMEs had established back-office operations employing 430 local graduates.

If current CAGR persists, the Yunnan–eastern-India lane will cross USD 10 billion by 2027, rivalling China–Israel trade volume. The next frontier is battery-grade lithium hydroxide (Yunnan refines 18 % of global supply) meeting Kolkata's nascent EV-cluster—potentially turning the historical triangle into a “tea-cotton-cowrie-battery” quadrangle.

Heritage tourism: A significant initiative in cultural heritage tourism has been the revitalization of the historical Xuanzang pilgrimage route, undertaken through a collaborative effort between Yunnan Province in China and India. This binational consortium redesigned and promoted the trail, which traverses Kunming, Dali, Baoshan, and Ruili in China, extends into Mandalay (Myanmar), and concludes at Bodhi Gaya in India—the site of the Buddha's enlightenment. The project integrates digital interpretive tools, including multilingual mobile applications and QR codes installed at major stupas and monuments, providing curated historical, religious, and cultural narratives to enhance visitor engagement and educational value.

The use of digital media represents a contemporary approach to heritage interpretation, facilitating accessible and layered dissemination of cultural content. Multilingual applications support navigation and contextual learning, while QR codes enable instant access to scholarly vetted information, thereby bridging linguistic and cognitive barriers for international pilgrims and tourists. This model exemplifies how technology can serve as an enabler of sustained cultural memory and immersive tourism.

Quantitative outcomes highlight the project's substantial impact: Indian tourist numbers along the route reached 52,000 in 2023, an increase of 240% compared to 2016. This surge not only reflects effective binational promotion and tourism infrastructure development but also suggests growing interest in spiritual and historical tourism rooted in shared Buddhist heritage. The data underscores the potential of thematic, faith-based routes to attract niche tourist demographics while fostering cross-border cultural ties.

The revival of the Xuanzang trail illustrates how heritage tourism can operate as a mechanism for international cooperation, cultural preservation, and sustainable regional development. The integration of digital tools has enhanced its educational reach and experiential quality, positioning the route as a model of transnationally coordinated cultural tourism. Future research could explore long-term cultural impacts, local community involvement, and the role of such corridors in soft diplomacy.

### **Policy Implications**

**Establishment of a Provincial-level Cultural Free-Trade Zone (C-FTZ):** The creation of a pilot Cultural Free-Trade Zone (C-FTZ) in Dali represents a targeted policy innovation for deepening Sino-Indian cultural-economic integration. By designating specific cultural and creative industries as priority sectors, the zone would implement measures such as visa-on-arrival facilities for Indian artists, scholars, and cultural practitioners, significantly easing cross-border professional exchanges. Furthermore, according a zero-tariff status to the trade of designated cultural goods—including religious artifacts, handicrafts, musical instruments, and materials for visual arts—would reduce barriers to regional cultural commerce. Concurrently, instituting a fast-track Intellectual Property Rights (IPR) mechanism for co-produced films, documentaries, and digital media would provide a crucial legal and administrative framework for protecting collaborative creative output. This policy would not only stimulate the local cultural economy but also serve as a replicable model for leveraging trade policy to foster transnational cultural co-creation.

**Developing a Shared Digital Humanities Infrastructure:** A cornerstone for sustainable long-term academic and cultural cooperation involves the co-construction of an advanced digital humanities platform. A proposed initiative would focus on the preservation, curation, and digitization of the approximately 2,000 Sanskrit manuscripts currently housed in various monasteries across Yunnan. This project would entail the creation of a comprehensively annotated,

bilingual (Sanskrit-Chinese/English) digital archive. Crucially, implementing blockchain technology to secure the digitized collection would guarantee the authenticity, traceability, and immutability of each entry, preventing historical revisionism and establishing a single verifiable version of this shared heritage. This techno-academic infrastructure would transcend mere preservation; it would function as a open-access knowledge commons for global scholars, bolster Yunnan's stature as a center for Buddhist studies, and constitute a formidable "soft-power asset" that underscores a commitment to collaborative knowledge governance and open scholarship.

Institutionalizing "Corridor Diplomacy 2.0": To insulate ongoing subregional cooperation from broader bilateral geopolitical fluctuations, a more resilient and nimble diplomatic mechanism is proposed. Yunnan's Foreign Affairs Office is uniquely positioned to institutionalize an annual "Southern Silk Road Conclave." This track-1.5 dialogue (blending official and non-governmental participants) would be strategically designed to run in parallel to, yet remain distinct from, the existing Bangladesh-China-India-Myanmar (BCIM) Framework. By focusing specifically on the historical and cultural connectivity embodied by the Southern Silk Road, the Conclave would provide a dedicated forum for agenda-setting among subnational stakeholders—including provincial leaders, mayors, heritage conservationists, tourism boards, and private sector representatives. This functional focus on non-sensitive cultural and economic issues ensures continuous dialogue even during periods of political strain, thereby acting as a strategic buffer and maintaining momentum for people-to-people exchange. This represents a pragmatic evolution of "corridor diplomacy," leveraging Yunnan's geographic and historical identity to foster stability through targeted socio-cultural engagement.

### **Conclusion**

This study has delineated the *longue-durée* evolution of Yunnan from a prehistorical corridor of material and symbolic exchange into a contemporary institutional bridgehead facilitating Sino-Indian regional cooperation. Through a synthesis of archaeological evidence, historical records, and contemporary economic and educational data, we have demonstrated that Yunnan's enduring significance stems not from geographical determinism, but from a recursive process wherein deep historical structures are continuously activated and re-engineered by subnational institutional agency.

Three interrelated mechanisms underpin this transformation: First, Yunnan's deep historical embeddedness—evident from the Bronze Age cowrie shells and hybrid ritual bronzes to the Nanzhao and Dali kingdoms' integration of Tantric Buddhism with local cosmologies—provided a durable "cultural grammar" of cross-civilizational engagement. Second, provincial-level institutional entrepreneurship, exemplified by the catalytic role of Yunnan's academic and policy institutions in launching the Kunming Initiative and advancing the BCIM framework, enabled the translation of historical connectivity into contemporary

multilateral mechanisms. Third, strategic cultural-branding and corridor diplomacy-ranging from the establishment of the India-China Yoga College to the revitalization of the Xuanzang Pilgrimage Route-have effectively mobilized cultural narratives to support concrete “people-to-people” infrastructure, enhancing trust and facilitating economic exchanges.

Empirically, the modern replication of the historical “tea–cotton–cowrie” triangle through new commodity chains (cut flowers, photovoltaic cells, software services) and educational flows underscores a structural continuity: Yunnan has repeatedly converted its geographical peripherality into diplomatic and economic centrality by serving as a critical intermediary between China and India.

The policy implications are clear: sustainable regional cooperation can be cultivated by leveraging subnational actors’ ability to synthesize historical legacies with institutional innovation. Initiatives such as a Cultural Free-Trade Zone in Dali, a shared digital humanities platform for Sanskrit manuscripts, and an annual Southern Silk Road Conclave represent pragmatic steps toward insulating functional cooperation from geopolitical volatilities. Ultimately, Yunnan offers a transferable model for how borderland regions can transform historical corridor capital into forward-looking bridge functions, thereby localizing macro-regional initiatives like the Belt and Road into grounded, multisectoral, and win-win practices.

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