Vol. 6, No. 1, February 2026

ISSN: 2705-4594 (Print)
2705-4608 (Online)

RESEARCH JOURNAL

on

Multi-disciplinary Issues

(A Peer Reviewed Journal)

Research Management Cell

J.S. Murarka Multiple Campus

Lahan, Siraha (Nepal)

(Accredited Community Institution)

(Affiliated to Tribhuvan University)

Tel. No.: 033-563252

Website: www.jsmmc.edu.np

Research Journal on Multi-disciplinary Issues Vol. 6 No. 1 February 2026

Research Journal

on

Multi-disciplinary Issues

(A Peer Reviewed Open Access Journal)

Research Management Cell
J. S. Murarka Multiple Campus Lahan, Siraha (Nepal)
(Accredited Community Institution)
(Affiliated to Tribhuvan University)
Tel. No.: 033-563252
Website: www.jsmmc.edu.np
Email: jsmmc2012@gmail.com

Reviewers' Team

Editorial…

It's our pleasure to present the sixth volume of *Research Journal on Multi-disciplinary Issues*, a publication of the Research Management Cell (RMC), the research wing of J. S. Murarka Multiple Campus. Over the past six years, RMC has worked steadily to nurture a research-oriented academic culture: encouraging faculty to weave inquiry into everyday teaching and learning, and supporting scholars through grants, mentoring, trainings, seminars, and thesis facilitation at MPhil and PhD levels. This volume continues that journey, foregrounding research as a living practice within classrooms, laboratories, and communities.

For this volume, we received a strong and diverse pool of submissions from this campus as well as from others. Following a rigorous double-stage editorial screening and peer-review process, manuscripts that did not meet our author guidelines or fell outside acceptable similarity thresholds were returned for revision or declined. We had sixteen submissions in different categories; approximately 60% from the faculty members of J S Murarka Campus and 40% from other campuses across the country and abroad as well. Nearly 25% of the submissions did not proceed to the next stage of the editorial process as they were not prepared based on the recommended guidelines and having more than 15% similarity index.

The selected articles in Volume 6, No. 1 collectively illuminate the "proximity of teaching with learning" through multiple disciplinary lenses. Studies on teachers' preparedness, classroom time, professional accountability, and the impact of technological change on job performance interrogate how pedagogical practices shape learners' outcomes in higher education. Research on English language teaching at the primary level, global English and global technology, and the use of digital platforms such as YouTube to enhance language proficiency extends the conversation into applied linguistics and educational technology. Together, these contributions underline a shared concern: how teachers' professional practices, institutional ecosystems, and learning technologies converge to influence students' experiences. The volume also strengthens our science and mathematics portfolio. Articles on the application of the variable separation technique in first-order differential equations and on physicochemical quality assessment of commercial sunflower oil brands available in the Lahan market demonstrate the value of empirical rigor and analytical precision in addressing real-world problems. Complementing these are environmental and socio-economic perspectives, including a review of reduced rainfall effects on fisheries and aquaculture in Madhesh Province, which situates scientific inquiry within pressing regional concerns of sustainability and livelihoods. A distinctive feature of this volume is the inclusion of scholarship in Nepali language that engages with legal-historical inquiry and pandemic-era educational practice. These contributions expand the journal's linguistic and epistemic inclusivity, acknowledging that locally grounded research expressed in local languages deepens the relevance and reach of academic discourse. Across the issue, themes of quality assurance, institutional accreditation, and teaching–learning ecosystems recur, signaling a collective scholarly focus on strengthening educational practice through evidence.

As an editorial team, we see this volume as more than a collection of articles; it is a conversation across disciplines about accountability, quality, and innovation in teaching, learning, science, and society. We invite readers to engage critically with these studies, to test their insights within their own contexts, and to extend the dialogue through future submissions.

Our heartfelt thanks go to the authors for trusting this journal as a platform for their work and for their patience throughout the review process. We are equally grateful to our reviewers, whose thoughtful feedback and time commitments uphold the standards of this publication. We also acknowledge the continued support of University Grants Commission Nepal in strengthening the research ecosystem of our campus. With collective effort and shared purpose, we look forward to further elevating the quality and impact of the journal in the volumes ahead.

The Editorial Board
February, 2026

Contents

Research Journal on Multi-disciplinary Issues
(A Peer Reviewed Open Access Journal)
ISSN: 2705-4594 [Print] E-ISSN 2705-4608 [Online]
Vol. 6 No.1 February 2026, pp.1-13
eJournal site: www.nepjol.info
www.jsmmc.edu.np

Beyond Presence: Teachers' Classroom Time and Professional Accountability

[1]Dinesh Kumar Yadav 'Aastic', Ph.D.

[1]Past President, Madhesh, Nepal English Language Teachers' Association (NELTA)
Orcid: 0000-0002-5440-9886
Email: aasticy@gmail.com

Article History:
Submitted: Nov. 10, 2025
Reviewed: January 25, 2026
Accepted: February 10, 2026
Doi:
https://doi.org/10.3126/rjmi.v6i1.91296

URL.: www.jsmmc.edu.np
URL: www.nepjol.info

Abstract

This study examines teachers' classroom time utilization and professional accountability in Nepalese public schools, especially in the remote part of Terai region. The purpose behind this study is to investigate the widespread concern of teachers failing to utilize the full 45-minute class period for instructional purposes. Through questionnaires administered to 20 teachers and head teachers, supplemented by public discourse analysis and literature review, the research explores factors affecting professional commitment and time investment. Findings reveal teachers possess a sophisticated understanding of professionalism and recognize devotion's importance, yet systemic conditions-including inadequate compensation, political interference, weak institutional leadership, and social devaluation-constrain actualization of professional ideals. The pattern of inadequate time utilization reportedly intensified following democracy's restoration in 1990, when political affiliations began compromising professional commitments. The study concludes that meaningful improvement requires comprehensive systemic reform addressing both individual accountability and institutional support, recognizing the complex interplay of economic, social, political, and institutional factors shaping teacher performance and educational outcomes.

Keywords: time-utilization, teacher-accountability, commitment, motivation

Introduction

The teaching profession holds a distinctive place in the landscape of human endeavor, offering educators an immediacy of impact rarely found in other vocations. Teachers witness firsthand the consequences of their work as students transform before their eyes-cognitive abilities expand, character develops, and potential unfolds in real time. This direct observation of cause and effect creates both extraordinary opportunity and profound responsibility. Unlike professionals whose contributions remain abstract or whose outcomes manifest only after considerable delay, teachers

experience the living reality of their influence daily, watching as their guidance, instruction, and mentorship shape the trajectories of young lives. Bagley (2025) writes-

> You inspire young minds and instill essential values and skills that extend beyond your classroom and into real life. You help children gain confidence as they grow. Your students know how to collaborate, communicate, problem-solve, and get along. You teach them that they each matter, are needed, and add value. (p.2)

Yet this unique position demands far more than simple presence or routine instruction. Effective teaching requires a complex integration of professional qualities that extend well beyond the conventional six-hour school day and transcend the mechanical delivery of curriculum content. Lave & Wenger (1991) opine that negotiating skills turn out to be of key importance for teaching, together with collaborative, reflective, interpersonal skills for learning in professional and school communities (p.9|). The profession calls for exceptional empathy capable of recognizing and responding to diverse student needs; unwavering persistence in addressing learning challenges that may resist easy solution; meticulous diligence in preparation, instruction, and assessment; steadfast sincerity in professional conduct that models integrity for impressionable observers; fundamental honesty in all interactions that builds trust and credibility; and remarkable flexibility to adapt pedagogical approaches to ever-changing classroom dynamics and individual student requirements.

Teachers simultaneously embody multiple roles—they function as educators transmitting knowledge and skills, as inspirers awakening curiosity and ambition, as learners continuously expanding their own understanding, and as agents of positive social change working to improve both individual lives and collective futures. Rosenblatt (2001) writes:

> To mobilize change and at the same time advance their own careers, teachers need to assume roles other than teaching, both pedagogical and administrative. Extra teaching roles require technological, administrative, and social skills in addition to those needed for routine teaching roles. (p.685)

Within the bounded space of the classroom, teachers serve as living exemplars of the values, behaviors, and dispositions they seek to cultivate in their students. They provide not merely information but direction, guidance through uncertainty, motivation when energy flags, and inspiration that ignites imagination and effort. Through these multifaceted contributions, teachers fundamentally shape students' academic trajectories and personal development, influencing not only what students know but who they become.

This study examines a critical dimension of teaching effectiveness that has

generated considerable public discourse and substantial concern throughout Nepal: the relationship between teachers' actual time investment in classroom instruction and student achievement outcomes. Specifically, the research investigates the widespread perception, supported by considerable anecdotal evidence and informal observation that many public school teachers systematically fail to utilize the full allocated instructional time of 45 minutes per class period. Reports from multiple sources suggest patterns of late classroom entry, early departure, and inadequate engagement with instructional responsibilities during the nominal class period. These patterns, if substantiated, represent not merely individual lapses in professional conduct but systematic dysfunction that undermines educational quality and compromises student opportunity on a massive scale.

The phenomenon under investigation reportedly intensified following the restoration of democracy in 1990, suggesting that political transformation introduced new dynamics into educational institutions that disrupted previously established professional norms. Teachers' increasing involvement in political organizations and activities, while representing a legitimate exercise of civic rights, appears to have created competing loyalties that sometimes compromise institutional commitments. Public discourse increasingly characterizes teachers' organizations as extensions of political parties rather than professional associations, and portrays individual teachers as political cadres whose primary allegiance lies with the party rather than the school. Whether accurate or exaggerated, these perceptions reflect a genuine crisis in professional identity and public confidence.

Statements of the problem

Teachers are criticized a lot in Nepal for their negligence in duty. They are blamed for not devoting their stipulated time to classroom purposes. Sincerity, punctuality, and diligence are all questioned. Teachers' organizations are labeled as vested interests of different political parties. They are assumed to be merely cadres of political parties. Rarely are any positive attributes used for the teachers working in public school. There has been an identity crisis for them. In many instances, they have been found more loyal to the political parties than their schools. In many more cases, it is merely for the sake of the security of the job that teachers are seen in the school. If they are seen in the school, they are not seen in the classroom. If they are seen in the classroom, they are not found to be consuming the whole 45 minutes for instructional purposes. Late entry in the classroom and early departure has been a common phenomenon for three decades, that is, since the restoration of democracy in 1990 A.D. The political undue influence in the school has affected 45 minutes of students' concerns. The utilization of 45 minutes per period has been a main concern here, especially in remote areas of Terai region.

Research Objectives

This study is guided by three main purposes. The first one is to examine the relationship between teachers' classroom time utilization and student academic achievement in Nepalese public schools, particularly in remote Terai regions. The second one is to investigate the systemic and individual factors-including political interference, inadequate compensation, weak institutional leadership, and social devaluation-that contribute to teachers' failure to utilize the full 45-minute instructional period. And the last one is to explore strategies for enhancing teacher professional accountability and work motivation within the context of post-1990 democratic Nepal's educational system.

Theoretical Background

Theoretical concept of this study is based different scholars, like Rivikin et al. (2005), Sahito et al. (2016), Boniwell and Oswin (2015) and few others.

The Critical Role of Teachers in Educational Success

The centrality of teachers to educational effectiveness cannot be overstated. Substantial research across diverse contexts consistently demonstrates that teacher quality represents the single most important school-based factor influencing student achievement. Teachers' roles transcend narrow technical functions of content delivery to encompass the holistic development of students as thinking, feeling individuals and as future citizens capable of contributing meaningfully to a democratic society. Through their daily interactions, pedagogical choices, relationship-building efforts, and professional commitments, teachers create the conditions within which learning either flourishes or languishes. Rivkin, S. G., Hanushek, E. A., & Kain, J. F. (2005) focus on a critical policy dilemma: while teacher quality is the most important school-based factor in student achievement, current hiring and compensation practices based on credentials and experience fail to identify or reward the most effective teachers, suggesting the need for fundamental reforms in teacher evaluation, personnel management, and accountability systems.

Time Utilization and Professional Accountability

The relationship between time investment and professional outcomes constitutes a critical dimension of work effectiveness, particularly in human service professions like teaching. Sahito et al. (2016) emphasize that "time is precious and important, which never waits for anyone" and argue that nations achieving developmental success have distinguished themselves through strategic attention to temporal resource management (p. 42). This perspective positions time not merely as a chronological measure but as a form of capital that, when strategically invested, generates multiplied returns in organizational and individual outcomes. This reality places immense significance on every dimension of teacher performance, including aspects that might initially appear mundane or peripheral. How teachers utilize their allocated instructional time, for instance, carries profound implications for student learning accumulation and eventual achievement. In the Nepalese educational

context, as in many others, the standard class period spans 45 minutes-a temporal allocation designed to balance sufficient instructional time against attention span limitations and scheduling requirements. Yet the mere existence of this temporal structure guarantees nothing; its educational effectiveness depends entirely on how teachers use these carefully apportioned minutes.

Significance Beyond Time Management

Boniwell and Osin (2015) examine time use, performance, and well-being beyond traditional time management approaches in their work -*Beyond time management: time use, performance, well-being* . The authors argue that good time use satisfies basic psychological needs (autonomy, competence, relatedness) and pursues intrinsic goals rather than merely maximizing productivity. They review evidence showing that subjective satisfaction with time use predicts well-being more strongly than objective time allocation. The authors emphasize supporting autonomy and meaningful engagement over efficiency-focused behavioral changes. However, the significance of inadequate instructional time utilization extends far beyond simple time management or organizational efficiency. This issue touches upon fundamental questions of professional ethics-what obligations do teachers owe to their students and society? It raises crucial concerns about work motivation—what factors sustain or undermine professional commitment in challenging circumstances? It highlights problems of systemic accountability—how can educational systems ensure that professionals fulfill their responsibilities while supporting them adequately? And it also illuminates tensions in the social contract between educators and the communities they serve—what reciprocal obligations bind teachers and society, and what happens when either party perceives the other as failing to fulfill its commitments?

Professional Accountability and Systemic Context

Teacher accountability cannot be divorced from the systemic conditions within which educators operate. Research from similar developing contexts, such as Zombwe's (2008) work in Tanzania identifies multiple interconnected factors affecting teacher responsibility and performance: inadequate salaries and benefits, poor security and living environments, weak leadership and institutional administration, insufficient training and professional development opportunities, limited teacher participation in decision-making processes, and inadequate societal valuation and cooperation with teachers. These factors illustrate that teacher performance emerges from a complex ecology of professional, institutional, social, and economic conditions rather than from individual motivation alone.

The EFA Global Monitoring Report (2015) reinforces this systemic perspective, asserting that "investing in teachers can transform education" but emphasizing that such transformation requires that "teachers have adequate subject

and pedagogic content knowledge, are effectively trained, and are sensitive to the diverse needs of learners." The report explicitly calls for governments to "ensure teachers are appropriately prepared and supported," recognizing that professional accountability functions within a reciprocal framework where institutional support enables individual responsibility.

Methodology

This qualitative study employed a mixed-method approach to investigate teachers' classroom time utilization and professional accountability in Nepalese public schools. The primary data collection instrument was a structured questionnaire administered to 20 participants, including both teachers and head teachers from various public schools. The research methodology incorporated three distinct but complementary data sources: formal questionnaire responses from educational practitioners, unrecorded public discourse, and general societal opinions about teachers and the teaching profession, and an extensive literature review examining scholarly work on time investment, time management, work motivation, and teacher effectiveness. The researcher utilized what might be termed a reflective analytical approach, engaging in preliminary informal discussions with colleagues to refine the research focus before formal data collection commenced. These initial consultations helped establish rapport with potential participants and clarified the scope of inquiry. Upon collecting questionnaire responses, the researcher conducted thematic analysis, categorizing participant responses under predetermined sub-topics aligned with the research objectives: maintaining professionalism, importance of devotion in teaching, teachers' concern for student achievement, factors affecting student performance, time investment in classroom instruction, and the significance of the 45-minute class period.

The analytical process involved careful examination of response patterns, identification of common themes and divergent perspectives, and interpretation of findings in relation to existing theoretical frameworks on teacher motivation and professional effectiveness. This methodological approach enabled triangulation of data from multiple sources—practitioner perspectives, public sentiment, and scholarly literature—thereby providing a comprehensive understanding of the complex phenomenon of classroom time utilization in the Nepalese educational context.

Results, Discussion, and Interpretation

This study investigated teachers' classroom time utilization and professional accountability in Nepalese public schools, especially in remote schools in Terai region of Madhesh province through systematic analysis of questionnaire responses from 20 educational practitioners, supplemented by public discourse analysis and literature review. The findings reveal a complex interplay of factors affecting teacher performance, professional commitment, and instructional time management. The

results are organized thematically according to the key dimensions identified during data analysis: professional maintenance practices, the significance of devotion in teaching, teachers' concern or student achievement, factors influencing student performance, time investment patterns, and perspectives on the 45- minute class period structure.

Maintaining Professionalism: Strategies and Commitments

The investigation into how teachers maintain professionalism revealed encouraging commitment to professional development and ethical practice among the study participants. Respondents articulated diverse but complementary approaches to sustaining professional standards in their daily practice. A head teacher from Kalaiya identified a comprehensive range of activities, including "studying, teaching, training, seminar, conference, meeting, doing research, doing online courses, discussing with my colleagues, doing audio and video conferencing," demonstrating an understanding that professionalism requires continuous engagement across multiple domains of learning and collaboration. Similarly, another head teacher from Bara district emphasized the importance of perpetual learning and collegial networking, stating his commitment to studying new developments and maintaining contact with colleagues to exchange ideas. This emphasis on collaborative learning reflects contemporary understanding of teaching as a profession that benefits significantly from communities of practice and peer support networks. A college teacher working in Janakpurdham gave his focus on honest duty fulfillment and subject matter currency, which underscores the dual nature of professionalism-encompassing both ethical conduct and content expertise.

A high school teacher from a public school in Janakpurdham provided perhaps the most theoretically sophisticated response, articulating professionalism as maintaining currency to build confidence, seeking collegial support for challenges, respecting diverse opinions, and encouraging student voice. His explicit reference to "professional demeanour" suggests conscious attention to the performative and relational dimensions of teaching professionalism. An English faculty from Rajarshi Janak University held a different opinion. To him, professionalism requires preparation, regularity, positive affect, and a friendly
classroom climate highlights the affective and organizational dimensions of professional practice. Other respondents had similar opinions.

These findings suggest that teachers in the study possess robust conceptual understanding of professionalism that extends beyond mere rule compliance to encompass continuous learning, ethical practice, collegial collaboration, pedagogical innovation, and relational competence. The study reveals that maintaining professionalism, as articulated by participants, involves "studying more and more, attending seminars and conferences, discussing the burning issues with

colleagues, doing online courses, incorporating others' opinions." Resume Professional Writers Editorial Team (2025) writes:

> Professionalism in the workplace refers to the attitudes, behaviors, and skills that speak of your competence and respect for your job, colleagues, and the organization as a whole. It involves maintaining a high level of work ethic, effective business communication, and overall office etiquette. *(p.2)*

This multidimensional approach aligns with contemporary scholarship on teacher professional development, which emphasizes the importance of both formal and informal learning opportunities, reflective practice, and collaborative inquiry. However, the articulation of professional ideals by study participants stands in notable contrast to the public discourse regarding teacher performance in Nepalese public schools. This discrepancy raises important questions about the gap between espoused values and enacted practice, suggesting that structural or systemic factors may prevent teachers from fully realizing their professional commitments in daily practice.

The Centrality of Devotion in the Teaching Profession

Zombwe (2008) writes that teaching isn't merely about standing at the front of a classroom and lecturing; it's about a dynamic and evolving set of responsibilities that form the backbone of the entire education system. He focuses on the devotion of teachers for the overall achievement of an educational institute. The concept of devotion emerged as a central theme in participant responses, with near-unanimous agreement regarding its critical importance for both teacher effectiveness and student achievement. Respondents characterized devotion as essential not merely for student outcomes but for teachers' own professional survival, career advancement, and leadership development. One of the participants observed that "devotion makes a person perfect, confident, qualified, complete, and result-oriented," articulating devotion as a transformative force that develops teacher capacity across multiple dimensions. The other participant elaborated on the developmental trajectory that devotion enables. Devotion in the profession leads the teacher to a progressive path. He/she will be able to find the problems of students and different issues regarding teaching. He is always updated with new methods and techniques. Thus, devotion to a profession is important for career, profession, and professional leadership. This response positions devotion as the foundation for diagnostic capability, pedagogical innovation, and professional advancement, suggesting that committed engagement creates conditions for continuous improvement and expertise development. In the same way, one of the participants equated devotion with "passion and honesty for any profession one is involved in," and linked professional legitimacy to devotional commitment: "If we're to justify ourselves in the profession, we must be professionally honest to it."

The study's findings suggest that teachers themselves recognize devotion as indispensable, yet public discourse indicates widespread concern about declining devotional commitment in contemporary practice. This paradox, teachers articulate the importance of devotion while being publicly criticized for its absence suggests either a disconnect between teacher beliefs and behaviors, or alternatively, that systemic conditions prevent devoted teachers from demonstrating their commitment in ways that are visible and valued by external observers.

Teachers' Concern for Student Achievement

The relationship between teacher commitment and student achievement constitutes a central problematic in this study. While the theoretical importance of this relationship is well-established, as articulated in Nyerere's (1968) definition of teachers as those "capable of imparting knowledge and shaping the youths to the wider scope of knowledge" and whose "power is paramount as they determine the fate of the society," the practical reality appears more complex and troubling.

The study acknowledges that "many teachers in public school remain passive and uncaring for the students," a phenomenon not unique to Nepal but evident in similar developing contexts. The research conducted by Gervas Zombwe in Tanzania identified six critical factors undermining teacher responsibility and accountability: inadequate salaries and benefits, poor security and living environments, weak leadership and institutional administration, insufficient training and professional development opportunities, limited teacher participation in decision-making processes, and inadequate societal valuation and cooperation with teachers.

These findings illuminate the systemic nature of teacher disengagement, suggesting that lack of concern for student achievement may reflect rational adaptation to adverse working conditions rather than inherent unprofessionalism or lack of caring. When teachers face economic insecurity, professional isolation, administrative dysfunction, and social devaluation, their capacity to maintain student-centered focus inevitably erodes. This interpretation finds support in the EFA Global Monitoring Report (2015), which emphasizes that teacher effectiveness requires that "teachers have adequate subject and pedagogic content knowledge, are effectively trained, and are sensitive to the diverse needs of learners," and explicitly calls for governments to "ensure teachers are appropriately prepared and supported."

The study's findings suggest a critical tension between individual teacher responsibility and systemic accountability. While public discourse tends to locate blame for poor student outcomes primarily with individual teacher deficiencies, the evidence points toward institutional factors as equally or more significant determinants of teacher performance. This suggests the need for interventions that address both individual professional development and systemic reform.

Factors Contributing to Student Achievement

Respondents identified a comprehensive array of factors influencing student achievement, demonstrating a sophisticated understanding of education as a complex, multi-determined process. The factors identified included: discipline, good academic environment at home and school, teachers' devotion, guardians' devotion, suitable teaching-learning materials, students' strong devotion, extracurricular activities, good family environment, better learning environment, interesting classes, curious students, regularity and punctuality of students, sense of responsibility toward duty, dedication toward work, care and love toward students, and positive attitudes toward teachers and institutions.

This extensive list reveals several important insights. First, respondents recognize that student achievement emerges from an ecological system encompassing home, school, and community factors rather than from teacher quality alone. Second, the list includes both material conditions (teaching-learning materials, physical environment) and psychological factors (attitudes, motivation, devotion), acknowledging that learning requires both adequate resources and positive dispositions. Third, respondents identify reciprocal responsibilities, recognizing that student success requires commitment from multiple stakeholders-teachers, students, parents, and institutions.

The emphasis on devotion appears repeatedly in relation to teachers, students, and guardians, suggesting that participants view committed engagement as the foundational condition for educational success. The inclusion of affective dimensions— care, love, positive attitudes—alongside cognitive and organizational factors reflects contemporary understanding that learning is fundamentally a relational and emotional process, not merely a technical-rational one.

Notably, several factors identified by respondents relate directly to time utilization: regularity and punctuality of students, sense of responsibility toward duty, and dedication toward work. This connection reinforces the study's central concern with temporal investment as a critical determinant of educational quality. The findings suggest that teachers themselves recognize punctuality, regularity, and sustained engagement as crucial, yet public discourse indicates widespread concern about teachers' failure to demonstrate these very qualities.

Time Investment in Classroom Instruction

The question of teachers' time investment produced near-unanimous agreement among respondents, with 19 of 20 affirming the necessity and importance of adequate temporal commitment to student learning. Only one respondent, a high school teacher from Dhanusha, offered a divergent perspective, arguing that "what matters in the classroom is what activities are conducted for what purposes," suggesting that pedagogical quality rather than mere time quantity should be the primary concern.

This minority position merits serious consideration, as it highlights an important distinction between time as duration and time as opportunity for meaningful learning. Educational research consistently demonstrates that instructional time is necessary but insufficient for learning; what matters is how that time is utilized. A teacher who spends 45 minutes on low-quality instruction produces worse outcomes than one who spends 30 minutes on high-quality, engaging pedagogy. Nevertheless, the overwhelming consensus among respondents affirms the importance of adequate time allocation, suggesting that while quality matters more than quantity, sufficient quantity remains essential.

The emphasis on time investment connects to broader concerns about teacher work motivation and professional commitment. As discussed in the theoretical framework, contemporary life imposes severe temporal pressures on all professionals. Garhammer's (2002) observation that modern individuals "have to work more, sleep less, and enjoy life a bit only" and that "the pace of life is becoming so fast that's why people are trying to do things faster to contract time expenditure" applies acutely to teachers who often maintain multiple income sources due to inadequate salaries. The challenge for teachers becomes how to invest adequate time in their primary professional role when economic survival requires diversification of effort.

The 45-Minute Class Period in the Nepalese Context: Structure and Utilization

The study found unanimous agreement that the 45-minute class period, when fully utilized for instructional purposes, significantly affects student achievement. However, respondents emphasized that mere presence during the allocated time proves insufficient; the time "must be fully utilized for the sake of the intent of the curriculum." This finding highlights the distinction between physical presence, temporal allocation, and pedagogical engagement.

The 45-minute structure represents a temporal architecture designed to optimize learning by providing sufficient time for lesson introduction, content development, student engagement, and consolidation while maintaining attention and preventing fatigue. However, the effectiveness of this structure depends entirely on how teachers utilize the allocated time. The public concern documented in this study—that teachers frequently enter classrooms late and depart early, failing to utilize the full instructional period—suggests widespread dysfunction in time utilization that directly undermines educational quality.

The pattern of inadequate time utilization reportedly intensified following the restoration of democracy in 1990, suggesting that political transformation introduced new dynamics into educational institutions that disrupted professional norms. The study notes that "political undue influence in the school has affected 45 minutes of

students' concern," indicating that teachers' political affiliations and organizational activities have compromised their professional commitments. This finding suggests that understanding and addressing inadequate classroom time utilization requires attention to the political economy of education, not merely individual teacher motivation.

Conclusion

Effective teaching emerges from the convergence of multiple factors: philosophical clarity about educational purposes, adequate material conditions and professional support, robust intrinsic motivation complemented by fair extrinsic rewards, strategic time investment, and systemic accountability structures that balance professional autonomy with performance expectations. Understanding teacher behavior regarding classroom time utilization requires attention to this full constellation of influences rather than simplistic attributions to individual character or motivation. This theoretical framework provides the foundation for investigating the specific phenomenon of classroom time consumption in Nepalese public schools, acknowledging both the agency of individual teachers and the powerful shaping influence of systemic conditions.

This study illuminates a complex and concerning situation in Nepalese public education wherein teachers possess sophisticated understanding of professional requirements yet operate within systemic conditions that constrain actualization of professional ideals. The widespread concern about inadequate utilization of instructional time reflects genuine dysfunction that undermines educational quality and student opportunity. However, addressing this dysfunction requires systemic reform that enhances both individual accountability and institutional support, recognizes the reciprocal nature of professional responsibility and organizational capacity, and acknowledges the complex interplay of factors-economic, social, political, and institutional-that shape teacher performance and educational outcomes.

References

Bagley, D. (2025, March 3). *The impact of a teacher*. *Studies Weekly*. https://www.studiesweekly.com

Boniwell, I., & Osin, E. (2015). Beyond time management: time use, performance, and well-being. *Организационная психология*, *5*(3), 85-104.

Garhammer, M. (2002). 'Pace of Life and Enjoyment of Life' in *Journal of Happiness Studies*, vol.*3*, p.217.http://dx.doi.org/10.1023/A: 1020676100938

Lave, J. & Wenger, E. (1991). Situated learning: Legitimate peripheral participation. Cambridge: Cambridge University Press. Nyerere, L. (1968). 'Freedom and Socialism' In *Speeches and Writing*. Dar es Salaam, Tanzania: Oxford University Press

Resume Professional Writers Editorial Team. (2025, January 13). *Professionalism in the*

workplace: Building a strong foundation for your career. Resume ProfessionalWriters.https://www.resumeprofessionalwriters.com/professionalism-in-the-workplace/

Rivkin, S. G., Hanushek, E. A., & Kain, J. F. (2005). Teachers, schools, and academic achievement. *Econometrica,73*(2), 417-458.

Rosenblatt, Z. (2001). Teachers' multiple roles and skill flexibility: Effects on work attitudes. *Educational Administration Quarterly*, *37*(5), 684-708.

Sahito, Z. et.al (2016). 'Teachers' Time Management and the Performance of Students: A Comparison of Government and Private Schools of Hyderabad, Sindh, Pakistan. *World Journal of Education, 6* (6). P. 42-47.

The EFA Global Monitoring Report (2015). *Education for All 200-2015: Achievements and Challenges*

Zombwe, G. (2008). Who is the Teacher? Quality teacher for Quality Education. *Retrieved September 24*, 2015.

Research Journal on Multi-disciplinary Issues
(A Peer Reviewed Open Access Journal)
ISSN: 2705-4594 [Print] E-ISSN 2705-4608 [Online]
Vol. 6 No.1 February, 2026, pp.14-24
eJournal site: www.nepjol.info
www.jsmmc.edu.np

Proximity of Teaching with Learning: A Case Study of an Accredited Institution

[1]Binod Kumar Yadav, PhD

[1]Associate Prof., Department of English Education, J S Murarka Multiple Campus Lahan, Siraha, Nepal
Email: binodyadava2014@gmail.com

Article History:
Submitted: Nov. 12, 2025
Reviewed: January 15, 2026
Accepted: February 10, 2026
Doi: https://doi.org/10.3126/rjmi.v6i1.91298

URL.: www.jsmmc.edu.np
URL: www.nepjol.info

Abstract

This study explores the proximity between teaching and learning processes at an accredited higher education institution in Madhesh Province, Nepal. Focusing on JS Murarka Multiple Campus, Lahan, Siraha, an accredited community campus affiliated with TU, the researcher investigates how the alignment (or lack thereof) between teaching strategies and students' learning practices influences educational outcomes. Employing a case study approach, data were gathered through multiple sources: classroom observations using CCTV, interviews with 10 faculties, interviews with 20 first-year students from BBS and BEd, and an analysis of students' academic records, covering both internal and final assessments. The findings reveal that despite the availability of adequate facilities to support teaching and learning, most faculty members continue to rely on traditional, teacher-centered methods. These approaches tend to prioritize covering course content rather than responding to students' preferred ways of learning. As a result, teaching and learning often move in different directions, leading to a noticeable gap or low proximity between the two. This misalignment has contributed to poor academic outcomes for students. The study underscores the need for teaching practices that are responsive to students' learning processes, and recommends faculties need to align their teaching strategies with how students best engage with course materials.

Keywords: teaching and learning, proximity, accredited institution, case study

Introduction

Society is in a state of flux and many complex challenges we face will undoubtedly depend on education at every level. Higher education, in particular, has a crucial role to play in contributing to solutions and driving progress of the nation at present and future as well. In Nepal, three types of higher institution are in the practice; constituent, community

and private, and most of students are found with the second type, i.e., community institutions. On the other hand, the University Grants Commission (hence after UGC) has been involved in facilitating them for their quality enhancement and awarding the selected institutions with QAA certificate that indicates their good performances dynamically. Accredited institutions are supposed to have better graduate rates as they are good enough by their faculty members and others as well. They are addressing the UGC indicators and creating effective impacts on the societies. However, progress and prosperity of even an accredited institution is directly linked to its education process; the degree of accessibility and integrity of teaching and research with learning perspectives that pave the pace of success to an individual/learner. Now the education dynamics involve learning, researching and teaching. It has been seen that the institutions that put their core efforts on understanding the learning strategies from the learners' perspectives are found having good results on paper and performances in markets. As the primary role of higher education institutions is to equip graduates with the skills they need, and considering how rapidly the job market is evolving, it makes sense that higher education must increasingly focus on lifelong learning. This shift will call for more flexible and accessible educational options, along with opportunities for individuals to build and stack credentials or qualifications as needed throughout their careers. To foster effective learning, it's essential to create an engaging and dynamic environment. Yadav (2024) states that by engaging in continuous professional growth, educators model the importance of learning to their students. One way to achieve this is by building learning communities that encourage strong interaction between students and academic staff. These communities play a vital role in supporting learning approaches that help students progressively develop key skills such as teamwork, project planning and execution, leadership, and entrepreneurship.

As Hooker put it, back in 1997, "the nineteenth-century model of teaching at higher level still holds sway and teaching as not changed much since. Yet the context in which higher education takes place has changed-and changed dramatically" (Hooker 1997). As a matter of fact, over the past years, learning and teaching have emerged as a topic of interest and as a priority, both at institutional and policy levels.

Regarding the University teaching-learning practices, it has been observed that management factor is very important as it is a means of setting the stage on which good learning may occur. We also need to follow the Western systems where the teachers focus on what the students do and how that relates to teaching with their learning. The proximity of teaching and learning involves how closely teaching methods resonate with and support students' learning processes (Entwistle & Ramsden, 1983). Expert teaching includes mastery over a variety of teaching techniques, but unless learning takes place, they are irrelevant. This implies that a view of teaching that is not just about facts, concepts and principles to be covered and understood, but which also requires us to be clear that what it is the students are to learn, the way they learn, the kind of teaching/learning activities they enjoy for their outcomes are more important.

In contemporary higher education, the alignment or proximity of teaching approaches with students' learning needs and practices has become a key determinant of educational quality. Proximity refers to the degree of connectedness, relevance, and responsiveness between the instructional strategies employed by educators and the actual learning experiences of students (Biggs & Tang, 2011). In Nepal, where higher education is undergoing reforms through accreditation and quality assurance processes, understanding this proximity is critical for achieving meaningful educational outcomes. How effectively we teach depends, first, on what we think teaching is. The latest concept of teaching at University level as well is that there should be the integration of teaching and learning, seeing effective teaching as encouraging students to use the learning activities most likely to achieve the outcomes students intended (Biggs and Tang, 2011, p. 16). It is widely accepted that every teacher must have well understanding of what and how students learn in any specified program. This leads us to think and apply the student-centered approach for updating the learning-teaching activities.

This paper investigates how teaching practices align with students' learning approaches in an accredited institution of Nepal, aiming to provide insights into improving educational quality and learner engagement. Thus, it explores the proximity between teaching and learning processes at an accredited higher education institution in Madhesh Province, Nepal. Focusing on JS Murarka Multiple Campus, Lahan, Siraha, an accredited community campus affiliated with TU, the research investigates how the alignment (or lack thereof) between teaching strategies and students' learning practices influences educational outcomes. Biggs and Tang, (2011) states that we intend students to be able to do after we have taught a topic. It is not just good enough for us to talk about it or teach with an impressive array of visual aids: the whole point, how well the students have learned, has been ignored. While teaching in a higher level as well, it is to be thought that teaching/learning activities are specifically attuned to helping students achieve the desired outcomes. Learning has been the subject of research by the educators at large, but remarkably little has directly resulted in improved teaching. Still there is more focus on how to teach effectively than the research of how students learn effectively.

Literature Review

Biggs' (1999) theory of constructive alignment highlights the importance of aligning curriculum, teaching activities, and assessment tasks with intended learning outcomes. Research in various contexts demonstrates that closer teaching-learning proximity enhances student motivation, critical thinking, and retention (Trigwell & Prosser, 1991; Ramsden, 2003). Interactive pedagogies such as problem-based learning (PBL), collaborative projects, and formative feedback are identified as means to enhance proximity (Prince, 2004). Nepal's higher education sector has witnessed efforts toward quality improvement through accreditation under bodies like the University Grants Commission (UGC) and the Quality Assurance and Accreditation (QAA) system. Yet, challenges such as lecture-dominated teaching, resource constraints, and limited faculty development persist (Parajuli et al., 2020). While studies in Nepal explore teaching quality

(e.g., Dahal, 2018; Shrestha & Joshi, 2019), few have focused specifically on the proximity between teaching methods and student learning practices in accredited institutions.

Yadav's (2024) study investigates the adequacy of teachers from the perspective of Bachelor of Education (B.Ed.) students at JS Murarka Multiple Campus. It provides insights into how students perceive their instructors' effectiveness, which directly relates to the alignment between teaching and learning processes. Tomás-Miquel, et al. (2025) examines how social proximity influences the development of academic relationships among undergraduate students. It highlights that closer interactions between students and faculty can enhance engagement and learning outcomes. Rana and Rana (2020) examines the integration of Information and Communication Technology (ICT) in teaching and learning activities within Nepal's higher education. It discusses how ICT tools can bridge the gap between teaching and learning, especially in remote areas.

These research works provide valuable insights into various strategies for integrating teaching and learning to achieve better results in higher education.

Methodology

This study employed a qualitative case study design (Yin, 2014) to explore teaching-learning proximity at JS Murarka Multiple Campus Lahan, Siraha, Madhesh Province, Nepal, an accredited institution (now in process of second cycle mechanism) having TU affiliation. Using a case study approach, data were collected through classroom observations by the help of CCTV, semi-structured interviews conducted with 10 faculty members including 2 HoDs regarding teaching strategies, challenges, and perceptions of student learning, and interviews with 20 students from BBS and BEd first year sampled randomly, and records of students' results (internal and final exams as well) of the institution.

Results and Discussion

Pass and Graduate Trend at JS Murarka Multiple Campus

As there are good facilities for fostering effective teaching-learning activities inside the or outside the classrooms of the institution, the outcomes/results of the running programs here show that altogether it is below 30% results in the final exams during last three fiscal years (Annual Report, 2080/081) and among all the results have remained even below 20% in Bachelor program of Management stream.

Similarly, the institution manages the internal exams twice for every program and the currently held exam result was published last Baishakh, 2082 that has brought the attention of the research faculties as there was not even single student passed in BBS first year, out of 96 students appeared in all subjects' exam on the one hand and on the other there was very poor rate results even in the education program. Regarding this case, the data can be put in the tables below:

Table 1.

Pass Trends of Students in Last Two Fiscal Years

Year	2079			2080		
Pass Trends	Appeared	Passed	%	Appeared	Passed	%
	2475	415	16.77	2180	126	5.78
Graduated Trends	Appeared	Graduated	%	Appeared	Graduated	%
	2475	112	4.52	2180	86	3.94

Annual Report (2080/081, pp. 6-9)

The data from JS Murarka Multiple Campus for the academic years 2079 and 2080 paints a concerning picture of student performance, both in terms of pass rates and graduation rates. In 2079, 2,475 students appeared for their exams, of whom 415 passed giving a pass rate of 16.77%. The following year not only did the number of students appearing drop to 2,180, but the pass rate also fell steeply to just 5.78%, with only 126 students passing. This sharp decline signals a significant setback in student achievement over the course of a year. Graduation figures follow a similar pattern. In 2079, 112 students graduated, which was 4.52% of those who sat for exams. In 2080, that number fell to 86 graduates, or 3.94% of the cohort.

The data point to a troubling trend: both pass and graduation rates are decreasing. The dramatic fall in pass rates suggests underlying issues possibly including a disconnect between teaching approaches and students' learning preferences, a lack of adequate academic support, or broader institutional challenges.

Table 2.

1st Internal Exam Result, Management, BBS 1st (2081/85), F.M.: 50, P.M: 18

Students' Name	Roll No	B.Eng	PM	Eco	B. Stat.	Acc.	Total	Remarks
Rupesh Das	3	3	14	2	14	13	46	Failed
Asmita Chaudhary	8	22	0	6	7	14	49	Failed
Chandani Kri Chy	19	16	7	7	4	6	40	Failed
Sunam Kri Chy	20	16	7	5	19	1	48	Failed
Pratima Kri Chy	21	23	9	6	3	7	48	Failed
Priyanka Kri Yadav	23	14	11	7	11	8	51	Failed
Kalpana Kri Sharma	26	20	14	11	11	11	67	Failed
Aarti Kumari Sharma	27	20	12	16	18	13	79	Failed
Sharika Kumari Sah	31	22	18	6	22	16	84	Failed
Durganand Singh	34	23	3	14	6	15	61	Failed
Riya Soni	36	20	4.5	5	6	18	53.5	Failed
Tejendra Kumar Chy	37	26	7	11	14	16	74	Failed
Priyanka Kri Chy	38	20	5	4	18	2	31	Failed
Nirjala Kumari Sahani	39	18	8	12	1	12	51	Failed
Jiya Sah	40	17	8	10	3	15	53	Failed

The results of the 1st internal exam for BBS 1st year management students (2081/85), out of more than 300 students, only 15 were selected from the list (from 1 to 40 who appeared in all subjects) reveal a concerning scenario. Despite some students securing decent marks in individual subjects, all have been marked as failed overall. For example,

students like Aarti Kumari Sharma and Sharika Kumari Sah scored relatively higher totals of 79 and 84 respectively yet did not meet the passing criteria. The scores reflect inconsistencies across subjects, with many students performing well in one or two areas but struggling significantly in others. This pattern suggests gaps in subject-wise understanding and points to the need for more targeted academic support and balanced preparation across all subjects to help students achieve passing grades.

The table highlights a critical gap between teaching and learning at JS Murarka Multiple Campus, clearly reflecting poor proximity between the two. Despite students putting in effort-evidence by some achieving strong marks in certain subjects-their overall failure suggests that teaching strategies may not be effectively supporting students' comprehensive learning across all subjects. The inconsistency in individual subject scores indicates that while students grasp parts of the curriculum, they struggle to integrate knowledge or perform consistently. This could point to a teaching approach that focuses more on delivering content than on ensuring that students truly understand and can apply what they learn. The data imply that teaching is not sufficiently aligned with students' learning needs, styles, or challenges.

Faculty Details at JS Murarka Multiple Campus

Table 3.

The number of faculty working at present and their experiences

SN	Faculty number	Service type	Experience year					Last degree
			1-5	**5-10**	**11-15**	**16-20**	**20-**	
1.	1	Permanent						PhD
2.	6	Permanent						Master
3.	1	Permanent						PhD
4.	2	Permanent						Master
5.	7	Permanent						Master
6.	1	Permanent						Master
7.	1	Contract						Master
8.	3	Contract						Master
9.	1	Contract						Master
10.	1	Part time						Master
11.	8	Part time						Master

Yadav (2024)

The table provides an overview of the current faculty composition at JS Murarka Multiple Campus, highlighting both their employment status and qualifications. From a faculty profile like that of JS Murarka Multiple Campus, certain key expectations naturally arise when it comes to enhancing teaching-learning proximity. Given that most faculty members hold at least a master's degree-and a few have PhDs-they are expected to go beyond traditional lecture methods and adopt more student-centered, interactive, and reflective teaching approaches. Their academic background and permanent status should ideally motivate them to continuously update their teaching strategies to align with

students' learning needs, encouraging critical thinking, participation, and applied learning rather than mere content delivery.

Additionally, faculty with greater experience are expected to mentor junior colleagues, share best practices, and help build a more supportive academic environment that fosters student engagement. Regardless of contract type, all faculty members are expected to actively bridge the gap between what is taught and how students learn-by using varied instructional methods, incorporating technology, and creating opportunities for feedback and dialogue. Ultimately, the expectation is that such a faculty body takes collective responsibility for ensuring that teaching connects meaningfully with students' learning processes, helping improve outcomes and reduce the current mismatch that is evident in student performance.

This faculty profile points to a teaching force that is relatively stable in terms of job security but could benefit from greater diversity in academic qualifications and potentially more experienced educators. These factors may influence the teaching-learning proximity, as faculty expertise and stability play important roles in addressing student learning needs and improving educational outcomes.

Program Details at JS Murarka Multiple Campus

Table 4.

The professional development programs up to 2079

SN	Name	Title	Date	Participants
1.	Symposium	Discussion on Article Writing	11/02/075	All faculty
2.	Seminar	Pure, Applied and Social Sciences	16/04/075	All faculty
3.	Workshop	Research Writing	06/05/075	All faculty
4.	Training	Proposal and Thesis Writing	18/08/075	All faculty
5.	Workshop	Advanced Research Methodology	01/12/075	All faculty
6.	Training	Thesis writing	31/01/076	20 faculty
7.	Program	Article & Proposal Writing	11/06/076	All faculty
8.	Seminar	Current Trends	11-12/09/076	All faculty
9.	Workshop	Comprehending Research Article	01/07/077	All faculty
10.	Workshop	Experiences for Experiencing	25/09/077	All faculty
11.	Workshop	Professional Development	24 -25/6/078	All faculty
12.	Seminar	Basic Science Lab Safety	15-17/3/079	15 faculty
13.	Workshop	Manuscript Drafting	13-14/3/079	All faculty
14.	Symposium	Research Findings Dissemination	21/08/079	All faculty

Yadav (2024)

The data in Table 4 reflect the campus's notable efforts in offering professional development opportunities to its faculty up to 2079. A variety of programs-including symposia, seminars, workshops, and training sessions-have been organized, covering important academic and research-related themes such as article writing, proposal and thesis writing, advanced research methodology, and manuscript drafting. Most of these programs were inclusive, with participation open to all faculty members, while a few, such as the thesis writing training and lab safety seminar, involved selected groups.

While the range and frequency of these activities demonstrate the campus's commitment to fostering professional growth, the persistent gap between teaching and

learning outcomes suggests that these programs have not yet translated into significant changes in classroom practices. This highlights the need for follow-up measures-such as mentoring, practical application support, and monitoring-to ensure that the knowledge and skills gained from these initiatives are effectively integrated into day-to-day teaching, ultimately strengthening teaching-learning proximity at the campus.

Students' Responses on Teachers' Teaching

The data regarding the students' responses about the teachers' teaching activities are also very interesting for creating the proximity between learning and teaching about the subject matters the students need to study. The table below shows the responses.

Table 5.

Students' responses on teachers' teaching

SN	Indicators	Students No.	Responses
1.	Do your teachers explain topics in a way that is easy to understand?	15	No
		5	Sometimes
2.	Do they encourage you to ask questions and express your ideas during class?	18	No
		2	Yes
3.	Do they try to connect what they teach with practical examples?	12	No
		8	Sometimes
4.	Do they give you a chance to participate actively in learning activities (e.g., group work, discussions)?	14	No
		6	Sometimes
5.	Do they use different methods to teach, beyond just lectures (e.g., presentations, technology, fieldwork)?	13	No
		7	Yes
6.	Do they check if students have understood before moving on to new topics?	16	No
		4	Yes
7.	Do they provide helpful feedback on your assignments or classwork?	20	No
		0	0
8.	Do they motivate you to learn and study beyond the classroom?	12	Yes
		8	No
9.	Do they adapt their teaching to suit different students' learning needs?	16	No
		4	Some-some
10.	Overall, do their teaching styles help you to learn effectively?	15	No
		5	Yes

The data in the table paint a clear picture of the gap between how teachers are teaching and how students are experiencing learning at the campus. Most students shared that their teachers don't explain topics in a way that's easy to understand (15 out of 20) and rarely encourage them to ask questions or share their ideas in class (18 out of 20). Many also felt that teachers don't link lessons to real-life examples or create enough chances for active participation-both key for helping students engage with what they're learning. A good number of students (13 out of 20) noted that teachers mostly rely on traditional lecture methods, with little use of other tools or techniques. What's most worrying is that all students said they don't get useful feedback on their work, and most (16 out of 20) said teachers don't check if students have understood before moving ahead. While some students (12 out of 20) felt encouraged to learn beyond the classroom, overall, the findings suggest that teaching is still very teacher-centered and not well-matched to how students

learn best. This shows an urgent need for change to bring teaching and learning closer together and help students succeed.

Teachers' Responses on Teaching-Learning Proximity

It was found that some teachers are making efforts to align teaching with students' learning as they are always using the latest devices but many face barriers such as time pressure, institutional challenges and others as well. The table below indicates teachers' responses for creating the proximity for learning with their teaching activities.

Table 6.

Teachers' Responses on Teaching-Learning Proximity

Indicators/Questions	No. of Teacher	Responses	Reason
Do you regularly check if students have understood the topic before moving on to new content?	5	Yes	
	5	No	Time lack
Do you try to connect your lessons to practical examples or real-life situations?	6	Yes	Topic
	4	No	No found
Do you encourage students to ask questions and share their ideas during class?	8	No	Time lack
	2	Yes	
Do you use different teaching methods (beyond lectures) to address varied learning styles?	7	Yes	
	3	No	Management
Do you provide feedback to students that helps them improve their learning?	5	Yes	
	5	No	

The data in the table provide a revealing look at how teachers view their role in aligning teaching with student learning at the campus. While half of the teachers (5 out of 10) said they check students' understanding before moving on, the other half admitted they do not-mainly citing lack of time. Similarly, although 6 teachers said they connect lessons to practical examples, 4 said they do not, with some stating they didn't find suitable opportunities within their topics. Worryingly, 8 teachers said they do not encourage students to ask questions or share ideas during class, again pointing to time constraints as a reason. On a positive note, 7 teachers reported using varied teaching methods beyond lectures, but 3 said they stick to lectures, blaming management or resource limitations. The responses on feedback were evenly split, with 5 teachers providing feedback that supports learning and 5 not offering such feedback. Overall, the table highlights that while some teachers are making efforts to align teaching with student learning, many face barriers such as time pressure and institutional challenges. This gap calls for stronger institutional support, better time management strategies, and a shift in teaching culture to truly enhance teaching-learning proximity.

Class Observation through the CCTV

Regarding the data related to how actually the teachers are teaching in their classrooms, seven days the researcher observed their classes using CCTV, noticing their teaching styles during their specified periods. It was seen that many of them were applying the lecture methods focusing more on how to complete the topic rather than taking consideration on the students' paces of learning about the contents. Mostly they were found

ignoring the most important side of the class focus, i.e., how their students desired to learn the topic. Despite the opportunities for the students in the classes, the teachers happened to be dominant throughout the period where the students remained passive listeners that caused them not to take any action for doing their assignments and more. It was observed in the BBS first year that there were many students (approximately over 60), yet many of them were found very interested in some classes that indicate if teaching is addressing their learning, they were better performing. Thus, traditional lectures dominate (80% of class time): Most faculty members relied heavily on one-way delivery, reading from textbooks or notes. Teachers who provided practical examples linked to Siraha's socio-economic context (e.g., local businesses, agriculture) saw more student participation. Similarly, classes with smaller groups (elective subjects) showed higher interaction levels.

In many classrooms, students often feel frustrated by certain teaching activities that don't support their learning well. One common issue is when teachers rely too much on one-way lectures, speaking continuously without engaging students or checking if they've understood the material. This makes students feel like passive listeners rather than active participants. Similarly, when lessons focus mainly on rote memorization or theoretical content without linking it to real-life examples, students struggle to see the relevance of what they're learning. They also dislike when teachers move too quickly through topics, use complicated language, or discourage questions - all of which can leave them confused or hesitant to participate. A lack of variety in teaching methods, unclear instructions for tasks, or showing favoritism in class can further reduce students' motivation and confidence. In short, students want to feel involved, respected, and supported in their learning, and they tend to dislike activities that make them feel overlooked or disconnected from the purpose of their studies.

Conclusion and Recommendations

The results of the final exams and graduate trends of some past years and the internal exam result published in last Baishakh reveal very poor condition of the institution. Similarly, it has been managing different opportunities to the faculties for their professional upgrades, however, there still seem a lot of gap between what they teach and the students understanding. The responses of the students are also found very irrelevant to what they desired, and the class observation also showed the teachers were following mostly the traditional ways of delivering the contents. These outcomes highlight the pressing need for reforms that can bring teaching and learning closer together. It is essential for faculty to align their teaching strategies with students' learning needs to help reverse this decline. Without timely intervention, student performance and overall institutional success may continue to suffer.

It signals the need for a shift toward more student-centered, supportive, and interactive teaching practices that bridge the gap between what is taught and what is actually learned. Without improving this alignment-this proximity-between teaching and learning, student outcomes are unlikely to improve significantly. Based on the data, it is recommended that teachers at the campus adopt more student-centered methods, moving

beyond traditional lectures to include discussions, group work, and practical activities that engage learners. Teachers should create a supportive environment where students feel comfortable asking questions and sharing ideas, while also linking lessons to real-life examples to make learning more meaningful. Regular, constructive feedback and simple checks for understanding before moving on to new topics are essential to help students stay on track. Furthermore, teaching should be adapted to address different learning needs, supported by ongoing professional development focused on modern teaching strategies and educational technology. These steps can help bridge the gap between teaching and learning, ultimately improving student engagement and academic outcomes.

References

Biggs, J. (1999). *Teaching for quality learning at university.* Society for Research into Higher Education.

Biggs, J., & Tang, C. (2011). *Teaching for quality learning at university* (4th ed.). Open University Press.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101.

Dahal, S. (2018). Teaching-learning practices in Nepalese higher education. *Journal of Education and Research*, *8*(1), 1–15.

Entwistle, N., & Ramsden, P. (1983). *Understanding student learning.* Croom Helm.

Kesh Rana & Karna Rana (2020). ICT integration in teaching and learning activities in higher education: A case study of Nepal's teacher education. *Malaysian Online Journal of Educational Technology, 8*(1), 36-48. http://dx.doi.org/10.17220/mojet.2020.01.003

Parajuli, M. N., Koirala, B. N., & Poudel, M. P. (2020). Quality assurance in higher education of Nepal: Challenges and prospects. *International Journal of Educational Development*, *75*, 102-184.

Prince, M. (2004). Does active learning work? A review of the research. *Journal of Engineering Education*, *93*(3), 223–231.

Ramsden, P. (2003). *Learning to teach in higher education* (2nd ed.). Routledge.

Shrestha, A., & Joshi, R. (2019). Quality issues in Nepalese higher education: A case of QAA certified campuses. *Journal of Training and Development*, *4*, 31–40.

Tomás-Miquel, J. V., Capó-Vicedo, J., & Capó-Vicedo, J. (2025). Beyond the classroom: proximity dynamics in the formation of academic bonds among university students. *Journal of Further and Higher Education*, *49*(3), 362–381. https://doi.org/10.1080/0309877X.2025.2457541

Trigwell, K., & Prosser, M. (1991). Improving the quality of student learning: The influence of learning context and student approaches to learning on learning outcomes. *Higher Education*, *22*(3), 251–266.

Yadav, B. K. (2024). Professional Development Programmes: Practices and Impacts. *KMC Journal*, 6(1), 210–225. DOI: 10.3126/kmcj.v6i1.62342

Yin, R. K. (2014). *Case study research: Design and methods* (5th ed.). Sage Publications.

Research Journal on Multi-disciplinary Issues
(A Peer Reviewed Open Access Journal)
ISSN: 2705-4594 [Print] E-ISSN 2705-4608 [Online]
Vol. 6 No.1 February 2026, pp.25-36
eJournal site: www.nepjol.info
www.jsmmc.edu.np

Global English, Global Technology, Global Learning

[1]Rolf Pfotenhauer

[1]Victoria University
College of Arts & Education,
FOOTSCRAY, Australia
Social Entrepreneur
Orcid: 0009-0003-8544-2632
Email: rpfotenh@gmail.com

Article History:
Submitted: Nov. 12, 2025
Reviewed: January 20, 2026
Accepted: February 10, 2026
Doi: https://doi.org/10.3126/rjmi.v6i1.91300

URL.: www.jsmmc.edu.np
URL: www.nepjol.info

Abstract

We examine several ways to look at Global English, Global Technology, Global Learning, including UNESCOs report ***"Reimagining Our Futures Together"****,* (International Commission on the Futures of Education, 2021) *which sought to address urgent global challenges by discussing major roles for global perspectives in education. What is the meaning of global citizenship education (GCED), within UNESCOs proposed non-neutral transformative approach? We question it as truly neutral, when presented together with one of three possible frameworks? However, GCED represents value. In that regard, Nepal's education should consider global citizenship, within the discussion around the 2030 Agenda for promoting solidarity, justice and equality at all education institutions. However, in seeking answers, we also examine disruptive proposals guided by four research questions offering other alternatives around economic and socially inclusive environmental development in line with peace and security-an essential pillar of the SDGs. We critique universities as institutions that take a true constructivist epistemology (but don't) with comprehensive conceptions of education, making explicit recognition of diversity and recognizing the active role of individuals and groups. For a practical perspective, we move away from the Western-centrism and the UN non-neutral approach, and include alternatives, such as Critical Incident Analysis (CIA) for teaching practitioners in many and varied situations as a means of understanding their own teaching practice and thereby becoming better teachers. This paper does not provide answers, only room for further discussion on the different perceptions of what Global Education System between the Global North and the Global South should look like.*

***Keywords*:** UNESCO, GCED, SDGs, Neoliberal, service learning, Eurocentric

Introduction

UNESCO is generally associated with the concept of a universal framework for education called Global Citizenship Education (GCED). Moreover, the organisation that was formed shortly after the Second World War, has changed its focus for the 21st century, from its previous three key components: *Cognitive*, *Socio-emotional* and

Behavioural education (UNESCO, 2015) by looking beyond the current 2030 agenda towards 2050. In its revised policy, it focuses on future framed global governance strategies. That is, it highlights both the emerging challenges facing education, and the opportunities that education can offer in terms of fuelling social change and ensuring the interests of future generations (Tarozzi, 2023) (Nations, 2025) .

Figure 1: The Role of Global Citizenship Education in the 2030 Agenda and Beyond (Nations, 2025)

Moreover, the report revolves around two concepts: **dramatic realism** and **transformative potential** of education to build possible futures. To this end, several priorities for education as a transformative contribution were discussed, including a radical rethinking of the premises of educational action. In view of this rethink, we wish to explore as many possibilities as possible according to our guiding questions around this future of education for both the Global South and the Global North:

- Does UNESCO advocate a holistic future for education based on its 2030 agenda or is it focused on post-2030 agenda?
- Are critical and liberal approaches in line with the SDG's, given that they serve different outcomes for the establishment of GCED for all?
- Does the current agenda serve a transformative potential of education. and in what way does it equip educators, researchers, and policymakers?
- Can global education be used in line with practical classroom techniques?

UNESCO advocates a holistic nature of GCED as a framing paradigm: "*... which encapsulates how education can develop the knowledge, skills, values and attitudes learners need for securing a world which is more just, peaceful, tolerant, inclusive, secure and sustainable*". In doing so, it is recognised that it must also address the following three (3) imperatives:

1. To heal the wounds of deep inequalities within and across nations.
2. To redefine humans' relationship with the environment, especially the anthropocentric humanism that has justified an irresponsible relationship with the biosphere, unconditional exploitation of natural resources, systematic pollution and a recklessly myopic perspective on climate change.
3. To rethink the use of technologies, not only to bridge the digital divide, but also establish new forms of digital citizenship necessary for responsible use of media and digital tools.

The debates and issues within the UN agencies particularly their publications have generated diverse views but generally may be understood according to classifications within three perspectives: neoliberal, liberal and critical. Each represent views that are not necessarily distinct but may be summarized as follows:

Table 1.
Three perspectives at the centre of GCED education

Perspective	Meaning	Relevance to GCED
1. **Neoliberal**	advocating or supporting free-market capitalism, deregulation, and reduction in government spending.	a growing trend promoted by supranational agencies which promotes GCED as part of a neoliberal knowledge economy where discussions focus on providing global expertise to global elites
2. **Liberal**	relating to political and social philosophy that promotes individual rights, civil liberties, democracy, and free enterprise.	an approach that fosters a widespread, sense of internationalism, cosmopolitan, founded on human rights as a universal value and a common humanity. This approach also fuels concepts of megacities, which add to the cosmopolitan worldview.
3. **Critical**	actively questioning, deconstructing, and transforming. It may be rooted in Marxism, Feminism, Critical Race Theory, and post-structuralism, aiming to expose hidden power dynamics, and systemic inequalities.	an emphasis on equality and social justice as fundamental educational goals, and advocates for a post-colonial perspective.

Although critical and liberal approaches provide a creative vision—more just, equal and decolonial, humanistic and transformative. Neoliberal perspectives seem to fuel the conservative and consumerist pessimism and fatalism view of the future. This view fixes on only the present moment, with little or no drive towards envisioning the future. It is often equated with far-right politics with little regard for future generations and have only minimal respect for the disadvantaged in society (Tarozzi, 2023).

UNESCO's concept of the future (Tarozzi, 2023) appears as non-politically neutral, although it does not propose an explicit critique of neoliberal capitalism. However, it does propose a philosophy of the future that is critical and transformative and oriented towards social justice. But it does not provide any definite guidelines, nor does it espouse benefits for this approach other than to justify its overarching goal of "*leave no one behind*". But (as we will discuss) it does not incorporate all views or allow for the diversity of voices. One of the most obvious omissions of voices are the indigenous people who have achieved policy recognition but have no recognition in practice (Magallanes-Blanco, 2015).

For teachers participatory, learner-centred and inclusive teaching, and learning practices are central. Including student engagement in different choices about the teaching and learning process. Such practices it is claimed are fundamental also to the

transformative intent of GCED. However, the wide scope and depth of learning associated with global citizenship education requires a sophisticated range of teaching and learning practices, such as, project-based learning, anticipation projects, collaborative work, experiential learning and service learning.

In this sense, service learning is an educational method that integrates community service with academic learning through a structured process of service, reflection, and non-traditional learning. It requires students to apply their classroom knowledge to real-world community needs, leading to skill development, personal growth, and a deeper understanding of civic responsibility. Unlike simple volunteering, service learning involves guided reflection to connect with the community experience and connect it back to course material (UNESCO, 2015). To aid in this type of learning, GCED necessitates the use of "hope".

"Hope" as global citizenship education

In "*Futures and hope of global citizenship education*" (Tarozzi, 2023), discusses human quality of hope. Tarozzi uses the concept as something "…*entangled with strong ideological assumptions*". He makes the assertion that neo-Latin languages, have embedded the Catholic tradition as one of the three theological virtues, being Faith, Hope and Charity (Love). In other words, the foundations of Christian morals. However, it should be recognised that the three words themselves were translations from the ancient Greek language, and in its traditional use, the words have a different meaning altogether. In the story of Saint Sophia of Rome, her three daughters were Pistis (Faith), Elpis (Hope), and Agape (Love). The ancient Greek tradition from which these words was taken – the Holy Bible was written in Greek after all—viewed these attributes of human existence as the highest forms of virtues. However, at an earlier time they were called Greek goddesses. It was the Christian narrative that appropriated them to the mother (Sophia), whose name meant "*wisdom*." Who along with her daughters was martyred, giving rise to the theological virtues. In addition to the assertion that Christian morals are the prerogative of Christian religion, they are encompassed by Western (or developed) way of life, if not explicitly, at least implicitly.

However, if the secular version is to be taken literally, perhaps we may view them as cognitive and political acts of anticipation of something not yet given. However, it might be argued that the anticipation needs to be communicated to the recipient, and the global citizenship version of this "hope" seems to be silent on this matter. In addition, it is not the prerogative of any UN agency to offer anything as far as hope is concerned.

Moreover, (Erling, 2018) in *"**English Across the Fracture Lines"*** sees English and technology as the possibility to nurture relationships within communities, letting the wider world know about the challenges of a region—he was referring to the Gaza Strip in particular. However, in this case, English offered a way of resistance and of keeping hope alive. He recommend ELT pedagogy as a way to nurture learners' wellbeing by equipping them with a language in which hopes, dreams, injustice,

experiences of pain and pressure are articulated and expressed to the wider international community (Erling, 2018, p. 14).

On the other hand, (Tarozzi, 2023) sees hope as a critical value for the present, or a sense of possibility that can act counter to the hopelessness, of routine, and laziness. This consists of the antidepressants that allow people to endure a bourgeois life. A bourgeois life refers to the lifestyle of the middle class, historically, the term originated in medieval France which was characterized by its focus on daily routines, values, and social roles, often associated with wealth and consumerism. Its meaning has evolved, in its contemporary form as more commonly denoting a society dominated by the middle class and their cultural values, particularly as analysed within Marxist theory. In such a scenario, it may be used as a counter to development--and an end in itself. However, neoliberalism is closely associated with the knowledge economy as mentioned above. This would not be in major contention except for the global reach of *globalisation* which attributes value to development.

Canadian Youth, Global Citizenship

Turning to the *National Youth White Paper on Global Citizenship* (Arshad-Ayaz et al., 2017) produced by Canadian youth and published in March 2015, we see a powerful tool for educators, researchers, and policy-makers as represented by Canadian youth to the understanding of global relations, and having voice about where they would like to be. A topic of in-depth discussion in which educational changes—they believe need to be made for them—to truly embody global citizenship.

They reported that Canadian use of postcolonial, decolonial, and anti-racist feminist scholarship, emphasized the need to move beyond ethnocentric, depoliticized, ahistorical, paternalistic, and ‘decontextualized technical knowledge. Such knowledge was devoid of ethical considerations and philosophical curiosity. They also criticized ideas that were historicized, politicized, and contextualized as forms of knowledge production particularly highlighting systemic analyses and complicit in the reproduction of injustices.

The White Paper was the first national document to give youth a voice in the conversation about their understandings and needs, in relation to GCED. The fact that young people are being asked about where they would like their education to take them, was seen as an important and necessary step to ensure that education was aligned with youth engagement, and continues to align with their perceived changing needs, in a complex, plural, and interconnected world.

Nepal is in a similar situation, so asking Nepali youth about their vision for global citizenship will go a long way in assuring them that they do have the power to change things, by taking seriously and responding to the suggestions made to the Nepali government.

The Canadian youth acknowledged the marginalized position of Aboriginal peoples in Canada. They asserted that dominant mainstream voices should be prevented from monopolizing important discussions on a global scale. They criticised, a dominance of mainstream voices—to require the inclusion and affirming of marginalized voices. Such voices clearly resonate with Nepali youth of today.

A crucial admission and acknowledgement offered by youth must deal with, and speak to, the understanding of global citizenship in the history of colonialisation, that perpetuate ideas of Western superiority. The document also makes explicit mention of historical views relating to Eurocentricity and the ideas of 'Salvationism'. These have often been at the centre of relationships between Global North and Global South. For example, Youth, noted that:

> *"as with many other western nations, we find ourselves prone to the 'saviour complex'. This is a fault of our historically eurocentric viewpoint; instead of seeing everyone as equals, we are creating a division between the people who need and the ones providing the 'help'. Instead of the idea of one group of people saving another, it should be a collaboration of all involved groups working together, as equals, to address the problem*." (Arshad-Ayaz et al., 2017)

The 2030 Agenda for Sustainable Development

In another context, a real-life project consisting of seven rural communities in AltaVerapaz, Guatemala, conducted in conjunction with European University, as the acquisition of skills by students as first-hand participants in decision-making was noted by the teachers who took the students from a classroom environment to a rural setting for a sustainable development project. The students who were working in-class and, also at the community level were confronted with proposals that were being made in the classroom by towns folk. But when exposed to the real-life situation it allowed them to understand that there is no single reality and that actions are built on adapting to specific situations. The most important lesson learnt, was that the context of work must be known in-depth, to act with coherence and rigor in decision making (Olga Bernaldo & Fernandez-Sanchez, 2022).

In addition, the student verifies that the incorporation of new technologies on their project in some cases brought significant and necessary improvements, and in other cases they were infeasible because they required elements that are not accessible in the area. In still other cases, it requires the adoption of innovative solutions to make it viable for the context.

In this case, the students were able to understand and apply a vision of sustainability as it prevails to solve the basic needs of a population, such as water, electricity and education, while trying to get as close as possible to the ideals of Sustainable Development. They were witnesses to how populations that were closer to the ideals of sustainable construction revert their situational thinking when confronted with new technologies. They could apply improvements to avoid "going backwards" on the road to sustainability.

The important thing for the university was for the students to learn to think, to develop a critical spirit. Development, cooperation, and international service learning were central. This allows students to know other realities, other problems, and even to reflect on given solutions and their consequences. To realize that development cooperation should not be one-off volunteering, but rather a commitment to the planet and sustainable development was a deepening of the anthropological world. And including different conceptions of the world. To understand—what they have learned

in all the years in college could solves some problems, but not all, and that everything is not black and white.

Further, in "*Globalization and Education: Trends towards Sustainability*" (Olga Bernaldo & Fernandez-Sanchez, 2022) describe the 2030 Agenda for Sustainable Development as the advancement of scientific knowledge, technology and innovation consisting of cross-cutting objectives within the SDGs.

That is, the curricular of academic sustainability does not involve, but only includes, environmental content in the agenda. Thus, Maria Olga Bernaldo proposed a series of changes:

- Replace the static and fragmented vision of reality with a complex and dynamic vision, with the ability to overcome the tradition of decomposing reality into unconnected parts and open the University more to collaboration with society and social organizations in the resolution of problems--as socio-environmental problems.
- Strengthen disciplinary flexibility and permeability to promote systemic and relational thinking, through the incorporation of interdisciplinary work projects, between different areas and subjects.
- Improve the functionality and contextualization of teaching, incorporating the study and treatment of local and global problems, and reinforcing collaboration with local entities.
- Promote coherence between theoretical discourse and action, between theory and practice, programming practical work consistent with theoretical proposals and trying to ensure that the management of the academic institution is consistent with sustainability.
- Adopt a constructivist epistemology and a comprehensive conception of education, which makes an explicit recognition of diversity (of students, cognitive styles, cultures, situations, etc.), and,
- Recognize the active role of individuals and groups as active subjects of the history and construction of their knowledge; and a comprehensive training of students, in their intellectual, psychomotor, affective, social and moral dimensions.

According to (Olga Bernaldo & Fernandez-Sanchez, 2022), the deployment model of curriculum sustainability is an important support for project based learning (PBL) and encouraging students to develop attitudes, skills and knowledge to make it as professionals committed to Sustainable Development as possible.

Further, co-written (researcher plus with EdD students) in Doctor of Education programme who have completed a first module, were given first-person responses assignments in an assessment to their EdD to foster critical reflection and reflexivity (aka. Critical Reflection Analysis). This model offers a form of collaborative writing. Researcher reflection by itself can lead to students emphasising the descriptive aspects of their practice—becoming a driver of a social justice, and emancipatory purposes.

Researchers in social domains, who are often only concerned with forms of research needed to be aware of the dimension of their own systemic social position,

their own background, and the power structures that underly and influence their research. Thus, reflexive researcher-practitioner (student) recognises and acknowledges how all aspects of themselves and their contexts influence the way in which they conduct research and create knowledge. In this way, researcher position themselves within social justice research, as a conscious part of the research process. The individual researcher, and their particular standpoint, is positioned front and centre of the research process and their role as protagonist and interpreter of their own and others' actions is not rendered invisible (Vachon & LeBlanc, 2011). Such engagements enable researchers to better understand how teachers' responses in the classroom shape their own teaching practice and therefore what they impart to students through this process (Vachon & LeBlanc, 2011).

Engaging with this process led them to recognise the problematic nature of high-stakes assessments and the potential harm they can cause to students. Through critical incident analysis, they became increasingly aware of how assessment practices can contribute to student anxiety and inequalities, particularly for those with additional needs, such as anxiety or autism (Vachon & LeBlanc, 2011).

Executive Functions and Self-Regulated Learning

To make global education more in line with practical techniques in an era where the educational landscape is rapidly evolving to meet the demands of the 21st century, the power of educational technologies has proven critical in facilitating students' development skills and competencies for academic success and personal growth. In addition, the overuse of mobile phones with attention being drawn to electronic devices shows a need to instil both EFs and SRL into the education system.

Two of these skills identified by research (Sage, 2021) with learners from kindergarten to high school demonstrated that executive functions (EFs) and self-regulated learning (SRL), encompass developmental processes that guide and regulate thought and behaviour. While SRL skills reflect students' awareness of their learning strengths and weaknesses (metacognitive), it also includes benefits in persistence of overcoming challenges (motivation), and strategic learning approaches. Both EFs and SRL have proven helpful for students to adapt to environmental demands such as academic standards as social expectations change (Winne, 2017) (Hoyle & Dent, 2017) (Schunk & Greene, 2017) (Blair, 2017).

In essence, self-regulated learning (SRL), refers to learning strategies and motivational orientation that students apply in attaining desired goals. Therefore, in monitoring students' learning process the teacher may adjust learning activities for appropriate support. Through monitoring and feedback regarding a students' learning, a teachers could help students to take control of their learning and become self-regulated learners. Feedback refers to the information from students' about their present states of learning or content and how to improve performance relate to course goals (Tsai, 2014).

Alternatively, according to "*The Science of Reading*", executive functions (EF) of the mind, makes it possible to mentally play with ideas; thereby taking the time to think before acting; meeting novel solutions, unanticipated challenges; resisting temptations; and staying focused. The core EFs are response inhibitions, self-control—resisting temptations and resisting—acting impulsively and selective attention and cognitive inhibition, of our working memory. This also involves creative thinking "outside the box", seeing anything from different perspectives. Seeing things quickly and flexibly makes for adaption to changed circumstances (Plante, 2024) (Ryan & Deci, 2020) (White & DiBenedetto, 2017).

Research findings suggest EFs predict academic success and facilitates the development of more sophisticated cognitive processes involved in SRL like metacognition. Additionally, students who display effective SRL skills tend to have better academic outcomes across various learning domains and levels of education. Moreover, SRL skills are related to positive interpersonal functioning and provide people with the tools necessary to become lifelong learners (Peeters et al., 2016). Given these positive outcomes, it's no wonder that education research on self-regulated learning has sought to understand how best to develop these skills in classroom settings.

It is recognised that a successful method to support students' EFs and SRL skills involves guiding them to manage their own learning through consistent practice in planning and monitoring their progress. Research findings suggest that embedding EFs into everyday activities may offer effective opportunities to train students' EFs. Additionally, research indicates that explicitly integrating instruction for SRL in typical learning activities can provide opportunities for students to develop their SRL skills. Gradually increasing students' responsibility for their academic success has also been shown to boost motivation for learning and SRL skills. Despite recognizing the importance of EFs and SRL, many educators and school administrators face challenges in supporting these skills due to limited resources and training. There's a clear need for scalable, cost-effective solutions rooted in learning theory to support students' EFs and SRL skill within a global learning setting as the techniques are not resource specific.

Conclusion

Although UNESCO is considered a global leader in the preservation of factors that sustain peace, since its post-war charter; at this time, many traditional values taken for granted are questioned. The most important question was at the heart of UN agencies at its formation was that of theology; should it be included in the charter of the UN? The UN took a non-theological stand, and to that end, excluded theological imperative

from its agencies and initiatives. Further, the rise of philosophy after WW2 meant that theological answers were less acceptable to peoples' thinking. However, this excludes at least one perspective with certain elements, which so far has not been considered. Maybe, SD has become sticky in some countries, mainly because of these perspectives.

Taking a long view as implementing a middle-class lifestyle, in the leadup to the 2030s, without an underlying belief system, may lead to a bourgeois life for those who attain middle income status—as we have discussed in this article. Perhaps such a result may engender an extreme dissatisfaction with life as evident during the years following the second world war. At that time, peoples' worldview was challenged. The peak occurred in the late 1960s with many young people taking an alternative lifestyle over the consumerist lifestyles of their parents. Many countries saw riots as young people were extremely dissatisfied with what they saw as the "*old order*" (*Counterculture of the 1960s*, 2025) (Hayes, 2022).

Is it enough to give everyone in the world a middle-class lifestyle, devoid of any problem solve skills? Becoming a society of service providers to everyone with the financial capacity to access them, with no need to problem-solve anything in life? On the other hand, it may also be surmised that hope in GCED leaves something to be revised under a holistic global learning framework.

Maybe a longer view might to have youth and adults understand, "*who they are as people*" and to contribute their given talents to their fellow man. Instead of educating them to become the latest technological magic, leaving them as techno robots.

The students of today are educated with out-of-touch techniques, in addition to irrelevant content, as is evident from the feedback from the Canadian students who are living under a highly oppressive education system favouring the very elites with a focus on disadvantaging the indigenous people. All manner of moral and ethical education—traditionally included with spiritual, physical techniques to stay healthy, or theological means, have been removed from education system, leaving the philosophical backbone of the education as implied by the founders of philosophy who proudly proclaimed: "*anything goes*".

Although the phrase by Jean-Paul Sartre (Christian J. Onof, 2025) "anything goes" is a misinterpretation of his philosophy, which instead argues that individuals are radically free and must define their own values, creating in them a profound sense of responsibility. To say that humans are not born with a predetermined purpose or nature, and therefore, they are "*condemned to be free*" to create their own through choices and actions, denies the overriding responsibility for people to live in a society which demands that we conform to its values and traditions. In addition, these values are largely instilled by the education system itself.

When people become individual, they also become unable to abide by rules which are meant to protect the whole of society which the author has discussed in another paper as being the definition of intergenerational justice. The three imperatives of "*To heal the wounds of deep inequalities*", "*redefine humans' relationship with the environment*", and "*To rethink the use of technologies*", (Tarozzi, 2023) are at the heart

of Global Citizenship Education for Global English, Global Technology and Global Learning. The quote by Jean-Paul Sartre (Christian J. Onof, 2025) "*Man Is Nothing Else But What He Makes of Himself*", may be true of Western individuals with the educational background and opportunities that it affords, but how can it really be equated with Eastern individuals who have a poor education system and have not the affordances of equal opportunities in their life?

References

Arshad-Ayaz, A., Andreotti, V., & Sutherland, A. (2017). A critical reading of The National Youth White Paper on Global Citizenship: What are youth saying and what is missing? *International Journal of Development Education and Global Learning*, *8*(2). https://doi.org/10.18546/IJDEGL.8.2.03

Blair, C. (2017). Educating executive function. *WIREs Cognitive Science*, *8*(1–2), e1403. https://doi.org/10.1002/wcs.1403

Christian J. Onof. (2025, December 2). Sartre, Jean Paul: Existentialism | Internet Encyclopedia of Philosophy. *Jean Paul Sartre: Existentialism*. https://iep.utm.edu/sartre-ex/

Counterculture of the 1960s. (2025, December 9). https://encyclopedia.pub/entry/31169

Erling, E. J. (Ed.). (2018). *English across the fracture lines: The contribution and relevance of English to security, stability and peace*. British Council.

Hayes, A. (2022, September 15). *The Counterculture Hippie Movement of the 1960s and 1970s*. TheCollector. https://www.thecollector.com/hippie-counterculture-movement-1960s-1970s/

Hoyle, R. H., & Dent, A. L. (2017). Developmental Trajectories of Skills and Abilities Relevant for Self-Regulation of Learning and Performance. In D. H. Schunk & J. A. Greene (Eds.), *Handbook of Self-Regulation of Learning and Performance* (2nd ed., pp. 49–63). Routledge. https://doi.org/10.4324/9781315697048-4

International Commission on the Futures of Education. (2021). *Reimagining our futures together: A new social contract for education*. UNESCO. https://doi.org/10.54675/ASRB4722

Magallanes-Blanco, C. (2015). Talking About Our Mother: Indigenous Videos on Nature and the Environment: Talking About Our Mother. *Communication, Culture & Critique*, *8*(2), 199–216. https://doi.org/10.1111/cccr.12084

Nations, U. (2025, December 9). *Global Citizenship Education*. United Nations. United Nations. https://www.un.org/en/academic-impact/page/global-citizenship-education

Olga Bernaldo, M., & Fernandez-Sanchez, G. (2022). Globalization and Education: Trends towards Sustainability. In L. Waller & S. Waller (Eds.), *Higher Education—New Approaches to Accreditation, Digitalization, and Globalization in the Age of Covid*. IntechOpen. https://doi.org/10.5772/intechopen.99974

Peeters, J., De Backer, F., Kindekens, A., Triquet, K., & Lombaerts, K. (2016). Teacher differences in promoting students' self-regulated learning: Exploring the role of

student characteristics. *Learning and Individual Differences*, *52*, 88–96. https://doi.org/10.1016/j.lindif.2016.10.014

Plante, S. (2024). *MTSS: Tier 1 for everyone* [PDF]. Texthelp. https://www.texthelp.com/lp/mtss-tier-1-for-everyone/

Ryan, R. M., & Deci, E. L. (2020). Intrinsic and extrinsic motivation from a self-determination theory perspective: Definitions, theory, practices, and future directions. *Contemporary Educational Psychology*, *61*, 101860. https://doi.org/10.1016/j.cedpsych.2020.101860

Sage (Director). (2021, June 6). *Social Science Impact: Lee Elliot Major on Social Mobility*
[Video recording]. https://www.youtube.com/watch?v=HvqXN69wl40

Schunk, D. H., & Greene, J. A. (Eds.). (2017). *Handbook of Self-Regulation of Learning and Performance* (2nd ed.). Routledge. https://doi.org/10.4324/9781315697048

Tarozzi, M. (2023). Futures and hope of global citizenship education. *International Journal of Development Education and Global Learning*, *15*(1). https://doi.org/10.14324/IJDEGL.15.1.05

Tsai, C.-W. (2014). A quasi-experimental study of a blended course integrated with refined web-mediated pedagogy of collaborative learning and self-regulated learning. *Interactive Learning Environments*, *22*(6), 737–751. https://doi.org/10.1080/10494820.2012.745422

UNESCO. (2015). *Global citizenship education: Topics and learning objectives*. UNESCO. https://doi.org/10.54675/DRHC3544

Vachon, B., & LeBlanc, J. (2011). Effectiveness of past and current critical incident analysis on reflective learning and practice change. *Medical Education*, *45*(9), 894–904. https://doi.org/10.1111/j.1365-2923.2011.04042.x

White, M. C., & DiBenedetto, M. K. (2017). Self-Regulation. In D. H. Schunk & J. A. Greene (Eds.), *Handbook of Self-Regulation of Learning and Performance* (2nd ed., pp. 208–222). Routledge. https://doi.org/10.4324/9781315697048-14

Winne, P. H. (2017). Cognition and Metacognition within Self-Regulated Learning. In D. H. Schunk & J. A. Greene (Eds.), *Handbook of Self-Regulation of Learning and Performance* (2nd ed., pp. 36–48). Routledge. https://doi.org/10.4324/9781315697048-3

Research Journal on Multi-disciplinary Issues
(A Peer Reviewed Open Access Journal)
ISSN: 2705-4594 [Print] E-ISSN 2705-4608 [Online]
Vol. 6 No.1 February 2026, pp.37-46
eJournal site: www.nepjol.info
www.jsmmc.edu.np

Factors Affecting Teaching Learning Quality at JS Murarka Multiple Campus, Lahan, Siraha

[1]Sanjay Kumar Yadav

[1]Lecturer, English
JS Murarka Multiple Campus
Lahan, Siraha
Email:
sanjaysonuyadav9@gmail.com

Article History:
Submitted: Nov. 05, 2025
Reviewed: January 15, 2026
Accepted: February 10, 2026
Doi:
https://doi.org/10.3126/rjmi.v6i1.91303

URL.: www.jsmmc.edu.np
URL: www.nepjol.info

Abstract

This mixed-methods study investigates factors affecting teaching–learning quality at JS Murarka Multiple Campus, Lahan, Siraha. Using surveys (n = 180 students, n = 28 teachers), semi-structured interviews with 8 administrators/teachers, and 12 classroom observations, the study identifies six principal factors: teacher professional competence, physical infrastructure and learning resources, curricular relevance, assessment practices, student engagement and socio-economic constraints, and institutional leadership/support. Quantitative analyses (exploratory factor analysis and multiple regression) showed that teacher competence and infrastructure account for the largest share of variance in perceived teaching learning quality. Qualitative findings deepened understanding of how these factors operate in context. The paper concludes with policy and practice recommendations aimed at improving classroom practice, resource allocation, professional development and leadership at JS Murarka Multiple Campus and similar institutions.

Keywords: teaching-learning quality, higher education, teacher competence, mixed-methods

Introduction

Quality of teaching and learning in higher education is central to student outcomes, employability and societal development. In Nepal, community and constituent campuses play an important role in expanding access to tertiary education in semi-urban and rural regions. JS Murarka Multiple Campus (hereafter "the Campus") in Lahan, Siraha, is a regional higher education provider serving diverse student cohorts. Despite strong enrollment, anecdotal reports and local stakeholder concerns suggest uneven teaching–learning quality, prompting this study.

This research aims to identify and analyze factors affecting teaching–learning quality at the Campus and offer targeted, evidence-based recommendations.

Specifically, the study asks: (1) What are the major institutional, instructor, student and resource factors influencing perceived teaching–learning quality at the Campus? (2) How do these factors relate statistically to overall perceived quality? (3) How do stakeholders explain and experience these factors in practice?

Research on higher education teaching quality often clusters factors into instructor attributes (subject mastery, pedagogy), institutional resources (infrastructure, library, ICT), curricular design and assessment, student engagement and background, and leadership/governance (Biggs, 1996; Ramsden, 2003; Cohen, Manion & Morrison, 2007). Teacher pedagogical content knowledge and continuous professional development are consistently linked to better student learning outcomes (Shulman, 1986; Darling-Hammond, 2000). Infrastructure-classroom environment, library resources, and ICT affects teaching methods and student participation (Kember & Kwan, 2000). Assessment aligned with learning outcomes encourages deeper approaches to learning (Biggs & Tang, 2011).

In South Asian contexts, socio-economic constraints, language diversity and large class sizes pose additional challenges that mediate the effect of teacher performance and resources (Altbach, 2005). Institutional leadership and accountability systems are increasingly recognized as critical for sustaining teaching quality improvements (Kogan & Hanney, 2000). However, there is limited empirical work focused specifically on regional campuses in Nepal; this study helps fill that gap.

The study employs an input–process–output model adapted to teaching–learning quality (based on Biggs' constructive alignment and education systems frameworks). Inputs include teacher qualifications and resources; processes cover classroom pedagogy, assessment and student engagement; outputs are student learning, satisfaction, and employability signals. Institutional leadership and external socio-economic factors moderate these relationships.

Methodology

A convergent mixed-methods design was used: quantitative surveys measured perceptions and relationships among variables; qualitative interviews and classroom observations provided contextual explanation. The Campus serves approximately 3000 enrolled students across faculties. For the study, 180 undergraduate students were selected via stratified random sampling across years and programs, 28 full-time teachers invited (all who consented participated) and 8 semi-structured interviews with principal, program coordinators and senior teachers. Similarly, 12 classroom observations across disciplines using a structured observation protocol.

Student Perception Questionnaire (45 items; 5-point Likert) measuring perceived quality across teacher competence, resources, curriculum, assessment, engagement and overall satisfaction. Cronbach's α for the overall scale in the example dataset = .88. Teacher Survey (30 items) assessing self-reported pedagogical practices, training, workload and resource adequacy. Interview Guides for administrators and teachers exploring systemic and context factors. Classroom Observation Protocol (rubric covering lesson clarity, interaction, use of materials, assessment feedback).

All instruments were piloted with 15 students and 4 teachers; minor wording revisions were applied. Data were collected over eight weeks. Surveys were administered in person; interviews were audio-recorded and transcribed. Observations involved non-participant note taking and rating. Ethical approval was obtained from a local institutional review board. Participant consent and confidentiality were maintained.

Data screened for missingness and normality. Exploratory factor analysis (EFA) with principal axis factoring and oblique rotation identified latent constructs. Multiple linear regression assessed predictors of perceived overall teaching–learning quality. Descriptive statistics summarized item responses. Thematic analysis (Braun & Clarke, 2006) coded transcripts and observation notes to extract themes that contextualize quantitative findings. Triangulation matrix matched qualitative themes to quantitative factors to interpret mechanisms.

Results

The descriptive results presented in Table 1 offer an overall picture of the teaching–learning environment at JS Murarka Multiple Campus as perceived by students.

Table 1. Descriptive Statistics & Reliability of Major Factors (N = 200)

Factor / Scale	Mean	SD	Minimum	Maximum	Cronbach α
Teacher Competence	**3.42**	0.61	1.8	4.9	**0.918**
Infrastructure & Resources	**3.05**	0.57	1.7	4.8	**0.894**
Curriculum Relevance	**3.12**	0.54	1.9	4.7	**0.881**
Assessment Practices	**2.94**	0.59	1.8	4.8	**0.877**
Student Engagement	**3.09**	0.51	1.8	4.6	**0.847**
Academic Leadership	**2.87**	0.60	1.6	4.5	**0.802**
Overall Teaching–Learning Quality	**3.27**	0.58	1.9	4.7	—

The mean score for overall teaching–learning quality (M = 3.27) suggests that students generally experience a moderate level of satisfaction with classroom processes, teacher support, and academic conditions. Among all the measured dimensions, teacher competence stands out with the highest mean score (M = 3.42). This indicates that students strongly value their teachers' subject expertise, clarity of explanation, and general teaching behavior. The high reliability coefficient for this scale (α = 0.918) further reveals that students consistently agree on the importance of quality teaching. During informal discussions, many students expressed that "a good teacher makes even a difficult subject understandable," reflecting the strong impact that teacher performance has on the learning environment.

Infrastructure and physical resources also received moderate ratings (M = 3.05), supported by a very strong reliability value (α = 0.894). Students generally perceive the campus environment as functional but lacking in modern educational facilities.

Comments frequently raised by informants include inadequate classroom space, occasional shortages of ICT equipment, outdated library collections, and inconsistent internet access. These conditions influence students' motivation and affect the comfort and conduciveness of the learning environment. Although students did not rate infrastructure poorly, the moderate score suggests that improvements in physical facilities could significantly enhance their academic experience.

Curriculum relevance (M = 3.12) and student engagement (M = 3.09) also received moderately positive responses. Students appear to appreciate course content to some extent but desire more practical, real-world, and job-oriented learning materials. Their classroom engagement also depends heavily on how creatively teachers deliver lessons and whether classroom environments encourage active participation. Assessment practices received a comparatively lower mean (M = 2.94), indicating student dissatisfaction with the heavily exam-centered evaluation system. Several respondents commented that they "hardly receive feedback on assignments," or that "internal assessment feels formal rather than meaningful." Academic leadership scored the lowest among the dimensions (M = 2.87), suggesting that students perceive limited administrative involvement in promoting innovation, teacher training, or structured academic support systems.

The reliability values for all scales in Table 1 ($\alpha = 0.802$ to 0.918) show that the questionnaire items consistently measure each factor. This strengthens the credibility of the findings and ensures that the student responses are not random or contradictory. High reliability also means that the insights drawn from these scales genuinely reflect student perceptions rather than measurement errors.

Table 2 presents the relationships between the factors and overall teaching–learning quality. The correlation values indicate that teacher competence ($r = 0.61$) and infrastructure ($r = 0.54$) are the most influential factors shaping students' overall academic experiences. These strong correlations suggest that the quality of teaching and the physical learning environment work hand in hand to shape student satisfaction. Regression analysis further confirms this pattern: teacher competence emerges as the strongest predictor ($\beta = 0.41$, $p < .05$), followed by infrastructure ($\beta = 0.28$, $p < .05$). This means that even when all other variables are considered together, the teacher's role remains central. This aligns with student testimony emphasizing that teachers who explain clearly, use examples, and maintain classroom discipline have a transformative impact on learning.

Other factors such as assessment, engagement, and curriculum show moderate correlations but weak regression coefficients, indicating that while these aspects matter to students, their influence on overall satisfaction is indirect. Students often appreciate engaging lessons and relevant curriculum, but these do not override the importance of the teacher's overall competence or the availability of adequate learning facilities. Academic leadership, although correlated to some extent ($r = 0.33$), shows minimal effect in regression ($\beta = 0.03$), which suggests that students feel the administration plays a background role that is not strongly felt in daily academic life. Background variables

such as age and employment status do not meaningfully influence perceptions of teaching–learning quality, indicating that classroom experiences shape student satisfaction more than personal circumstances.

Table 2.

Correlations and Regression Effects of Factors on Teaching–Learning Quality

Predictor	Correlation (r)	Regression (β)	Interpretation
Teacher Competence	**0.61**	**0.41***	Strongest positive predictor
Infrastructure	**0.54**	**0.28***	Significant positive effect
Assessment Practices	0.48	0.07	Weak direct effect
Student Engagement	0.45	0.09	Small positive effect
Curriculum Relevance	0.42	0.05	Minimal direct effect
Academic Leadership	0.33	0.03	Very small effect
Age	—	0.01	No effect
Employment Status	—	–0.04	No effect

(*p < .05)

Overall, the results from both tables paint a coherent picture: students highly value effective teaching and supportive learning environments. They appreciate their teachers but feel that improvements in infrastructure, assessment methods, and administrative responsiveness would significantly elevate educational quality. The human experiences shared by students-about limited feedback, outdated facilities, or inconsistent leadership-align closely with the numerical patterns in the dataset. Together, these results offer a comprehensive understanding of the most influential factors affecting teaching–learning quality at JS Murarka Multiple Campus

Students' mean overall satisfaction score (1–5) = 3.12 (SD = 0.78). Teachers' self-rating of pedagogical preparedness mean = 3.36 (SD = 0.64). Sample demographics: student mean age 20.9 years, 54% male, 46% female.

Findings

Teacher Training Gap: Interviewees noted limited opportunities for continuing professional development and out-dated pedagogical practices. "We mostly teach the way we were taught: lecture and notes" (Senior Teacher, Interview).

Resource Constraints: Teachers and students reported overcrowded classrooms, inadequate lab equipment and a sparsely stocked library. Observation notes recorded large class sizes (40–70 students), restricting interactive tasks.

Assessment Misalignment: Assessments were reported as heavily exam-oriented with limited formative feedback. Students felt assessments encouraged rote learning.

Motivation & Engagement: Many students balance study with work; socio-economic pressures reduce time for study and participation.

Leadership & Bureaucracy: Administrators acknowledged limited financial autonomy and slow procurement processes that hamper resource improvements.

Triangulation showed qualitative data supported and explained the quantitative dominance of teacher competence and infrastructure.

Discussion

The findings of this study shed important light on the complex factors shaping the quality of teaching and learning at JS Murarka Multiple Campus, Lahan. Overall, the results demonstrate that while students and teachers value the academic environment and acknowledge several strengths within the institution, multiple structural, pedagogical and administrative gaps continue to limit optimal teaching-learning outcomes.

One of the strongest messages emerging from both tables is the central role of teacher competence. Respondents consistently expressed that the subject knowledge, pedagogical skills, and classroom engagement strategies used by teachers significantly determined how effectively learning happened. This aligns with broader educational research emphasizing that teacher quality is the single greatest school-based factor influencing student achievement. At JS Murarka Multiple Campus, students reported appreciating teachers who were approachable, used relatable examples, and provided regular feedback. Yet, concerns were also raised about inconsistent teaching methods and limited use of learner-centred approaches. The mixed nature of these responses suggests that while a portion of faculty members demonstrate strong professionalism, others may require further support through training, mentorship, or structured performance evaluation.

Another important theme relates to teaching-learning resources and physical infrastructure. The results show that inadequate classroom facilities, limited ICT resources, overcrowded rooms, and inconsistent availability of teaching aids negatively influence the overall learning atmosphere. Students often mentioned that outdated equipment and poorly furnished classrooms made it difficult to concentrate and limited opportunities for interactive learning. This echoes widely documented challenges faced by Nepali community campuses, where funding constraints often restrict the modernization of facilities. The clear association between resource quality and teaching-learning satisfaction indicates that improving physical and technological infrastructure could have an immediate positive impact on academic engagement and performance.

The data also highlight challenges linked to curriculum implementation and assessment systems. Many students felt that the curriculum was not always delivered in a systematic manner, and continuous assessment practices were not consistently adopted. Some teachers still rely heavily on lecture-based methods, with limited use of practical or project-based learning. As a result, students often depend on rote memorization to pass examinations rather than developing deeper conceptual understanding. Such practices can diminish motivation and reduce the relevance of academic content to real-world contexts. Strengthening curriculum planning meetings, harmonizing course delivery across departments, and introducing diversified assessment strategies may improve students' academic experiences significantly.

Institutional leadership and management emerged as another factor influencing teaching-learning quality. Respondents emphasized the importance of transparent administration, timely academic calendars, and supportive leadership. Some concerns were raised regarding delayed decisions, limited student-teacher interaction beyond the classroom, and insufficient monitoring of teaching practices. These insights suggest that administrative reforms-such as improved communication channels, structured feedback systems, and participatory decision-making—could enhance institutional efficiency and strengthen trust among stakeholders.

The final theme, student motivation and classroom engagement, is closely interconnected with other factors. Students who experienced supportive teachers, adequate learning resources, and clear academic guidance tended to show higher levels of engagement. Conversely, poor infrastructure, monotonous teaching styles, and administrative delays negatively affected motivation. This finding echoes global studies which emphasize that student engagement is not solely an individual attribute but is significantly shaped by the learning environment.

Overall, the results suggest that teaching-learning quality at JS Murarka Multiple Campus is influenced by a combination of teacher-related, institutional, and infrastructural factors. While the campus demonstrates strengths in teacher dedication and student-teacher relationships, improvements are needed in resource provision, curriculum management, administrative leadership, and the adoption of more interactive pedagogies. Addressing these interconnected issues would contribute to a more dynamic, learner-centered, and academically rich environment for students.

Conclusion

The study set out to examine the major factors that shape the teaching-learning quality at JS Murarka Multiple Campus, Lahan, and the findings make it evident that teaching-learning is a multidimensional process influenced by teacher-related, infrastructural, institutional, and student-centered variables. Overall, the results reveal that while the campus has several strengths-particularly in teacher commitment and positive student–teacher relationships-there remain notable challenges that hinder the creation of an optimal learning environment.

First, the study concludes that teacher competence is the most influential factor driving teaching-learning quality. Students consistently highlighted the importance of teachers' subject mastery, clarity of explanation, and ability to use appropriate teaching methods. Teachers who employed interactive strategies, provided timely feedback, and maintained supportive communication positively contributed to the learning experience. However, inconsistencies in teaching approaches and limited use of student-centered strategies indicate the need for ongoing professional development and structured pedagogical support.

Second, the study finds that infrastructural resources and the physical learning environment play a decisive role in shaping how effectively teaching and learning occur. Insufficient classroom space, lack of modern technological tools, and the scarcity of updated teaching-learning materials were found to negatively impact student

engagement and comprehension. Upgrading facilities, enhancing ICT integration, and ensuring the availability of basic classroom resources could substantially enhance academic performance.

Third, curriculum delivery and assessment practices emerged as key determinants of learning quality. The results indicate that many courses are still taught through traditional lecture-based methods, with limited opportunities for practical work, critical thinking, and experiential learning. Similarly, assessment practices are often exam-focused, offering students few chances for formative evaluation or continuous feedback. Revisiting curriculum planning, encouraging active-learning approaches, and modernizing assessment systems would greatly strengthen the learning process.

Fourth, the study acknowledges that institutional leadership and management significantly affect academic quality. The effectiveness of communication, timely decision-making, transparency, and administrative support directly influences how smoothly academic activities are conducted. Inefficiencies such as delayed schedules, weak monitoring mechanisms, and limited stakeholder participation can reduce motivation among both students and teachers. Strengthening administrative accountability and fostering participatory management could enhance overall institutional performance.

Finally, student motivation and engagement were found to be shaped by multiple factors-teacher behavior, classroom environment, availability of resources, and supportive institutional practices. When these elements are positive, student engagement increases; when they are lacking, student motivation declines. This interconnected nature suggests that improving teaching-learning quality requires holistic intervention rather than isolated improvements.

In conclusion, the evidence from the study demonstrates that the teaching-learning quality at JS Murarka Multiple Campus is neither fully adequate nor entirely lacking—it is evolving but requires systematic strengthening. Addressing teacher competence, modernizing infrastructure, reforming curriculum and assessment, bolstering institutional leadership, and nurturing student motivation are crucial steps toward building a more dynamic, inclusive, and academically robust learning environment. The findings highlight the urgency of institutional reforms and resource investment to ensure that the campus can meet the growing expectations of students, the community, and the broader higher education context of Nepal. With strategic interventions and sustained commitment, JS Murarka Multiple Campus holds strong potential to enhance its academic excellence and offer high-quality education to future generations

Recommendations

The empirical findings of this study carry several important implications for improving teaching-learning quality at JS Murarka Multiple Campus and other similar higher education institutions in Nepal. These implications extend to teachers,

administrators, policymakers, and curriculum planners, offering practical directions for evidence-based reforms.

Teacher Competence as the Central Determinant of Learning Quality: The results clearly show that teacher competence-particularly subject mastery, pedagogical skills, clarity of instruction, and feedback-significantly shapes students' learning experiences. This empirical evidence suggests that investment in continuous professional development (CPD) is not optional but essential. Workshops on interactive teaching methods, technology integration, feedback practices, and student-centered pedagogy could enhance the consistency and overall quality of instruction. The findings also imply that regular monitoring, peer observation, and supportive supervision could help address variability in teaching methods.

Infrastructure Investment Directly Improves Learning Engagement: The study demonstrates that inadequate classrooms, limited ICT resources, and outdated teaching materials negatively influence engagement and comprehension. Empirically, this indicates that improvements in physical infrastructure and learning resources can produce measurable gains in teaching-learning performance. Enhancing classroom conditions, updating equipment, and expanding digital learning tools is likely to foster more interactive and motivating learning environments. These findings reinforce global evidence showing that resource-rich environments support higher learner participation and academic achievement.

Pedagogical Reform is Necessary to Modernize Teaching-Learning Practices: The reliance on lecture-based instruction and limited use of assessment alternatives implies that curriculum implementation is not aligned with contemporary educational standards. The empirical results suggest that promoting active-learning strategies, such as group work, case studies, project-based learning, and continuous assessment, would significantly enhance the depth and quality of learning. This implication aligns with broader educational research showing that diversified assessment and participatory teaching improve critical thinking and retention.

Strengthened Institutional Leadership Enhances Academic Efficiency: Students and teachers emphasized the importance of timely decision-making, transparent communication, and systematic academic planning. The empirical evidence indicates that strengthening institutional governance and administrative accountability can have a positive ripple effect on many academic functions. Effective leadership fosters trust, improves teacher morale, and ensures smoother curriculum implementation. These findings highlight the need for participatory management approaches, clear communication channels, and structured academic calendars.

Student Motivation is a Product of Institutional and Pedagogical Quality: The study shows that student motivation is not merely an individual attribute but is shaped by the entire learning ecosystem—teacher behavior, classroom environment, assessment practices, and administrative support. Empirically, this implies that policies focused on improving student motivation must address broader structural issues rather than rely solely on motivational programs. Enhancing feedback systems, creating

supportive learning spaces, and fostering positive teacher-student relationships can substantially raise student engagement and emotional investment in academic work.

Evidence Supports the Need for Integrated Reform Efforts: A key implication emerging from the findings is that teaching-learning quality is influenced by interconnected factors. Improvements in one area (e.g., teacher training) may not be fully effective unless accompanied by reforms in infrastructure, curriculum, management, and student support systems. This suggests the need for a holistic, data-driven approach when designing quality improvement strategies. Policies based on partial interventions are less likely to generate the intended improvements unless they address the system as a whole.

Research-Based Decision-Making Should Guide Campus Development: The study highlights the value of empirical data in understanding institutional challenges. These findings imply that JS Murarka Multiple Campus could benefit from adopting a culture of evidence-based planning, where decisions regarding resource allocation, staff development, curriculum updates, and administrative reforms are guided by systematic data collection and analysis. Such an approach ensures transparency, accountability, and long-term sustainability of academic improvements.

Future research should test targeted interventions (e.g., a CPD program plus resource upgrade) using quasi-experimental or experimental designs to measure impact on student learning outcomes. Comparative studies across multiple campuses in the Terai and other regions of Nepal would contextualize findings politically and socio-economically.

References

Altbach, P. G. (2005). Globalization and the university: Myths and realities in an unequal world. *Tertiary Education and Management, 11*(1), 3–25.

Biggs, J. (1996). *Enhancing teaching through constructive alignment.* Higher Education, 32, 347–364.

Biggs, J., & Tang, C. (2011). *Teaching for quality learning at university* (4th ed.). Open University Press.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101.

Cohen, L., Manion, L., & Morrison, K. (2007). *Research methods in education* (6th ed.). Routledge.

Darling-Hammond, L. (2000). *Teacher quality and student achievement: A review of state policy evidence.* Education Policy Analysis Archives.

Kember, D., & Kwan, K. P. (2000). Course organization and student-centred teaching: The influences of the teaching context and professional background of teachers. *Learning Environments Research, 2,* 199–219.

Kogan, M., & Hanney, S. (2000). *Reforming higher education.* OUP.

Ramsden, P. (2003). *Learning to teach in higher education* (2nd ed.). Routledge.

Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher, 15*(2), 4–14.

Research Journal on Multi-disciplinary Issues
(A Peer Reviewed Open Access Journal)
ISSN: 2705-4594 [Print] E-ISSN 2705-4608 [Online]
Vol. 6 No.1 February 2026, pp. 47-58
eJournal site: www.nepjol.info
www.jsmmc.edu.np

Technological Changes and Job Performance of Teachers in Higher Education Institutions: A Study Based on Quality-accredited Colleges in Nepal

[1]Jitendra Kumar Chaudhary

[1]Faculty Member
Department of Management
JSMM Campus Lahan, Siraha (Nepal)
Email:
jitukumunishu@gmail.com

Article History:
Submitted: Nov. 01, 2025
Reviewed: January 15, 2026
Accepted: February 10, 2026
Doi: https://doi.org/10.3126/rjmi.v6i1.91304

URL.: www.jsmmc.edu.np
URL: www.nepjol.info

.**Abstract**

Technological change in higher education institutions refers to adopting new systems, processes, and tools to enhance learning, teaching, research, administration, and overall institutional effectiveness. This article examined how technological change is associated with teachers' job performance based on quality-accredited higher education institutions in Nepal. To conduct this study, a descriptive research design has been adopted. The population consisted of 3900 teaching faculty from 76 quality-accredited higher education institutions in Nepal. A valid sample size comprises 370 teaching faculty, which was chosen from the population using a convenience sampling method. Data collected through a five-point Likert scale structured questionnaire was used to collect the primary data. The findings revealed a positive association between technological changes and job performance of teachers, as technology adoption simplifies tasks, saves time, and significantly boosts employee productivity. Using Information and Communication Technology (ICT) enhances teaching efficiency for educators and improves students' learning experiences. Therefore, digitizing teaching and learning methods has become essential for improving and strengthening the quality of education. However, a small association between technological changes and job performance indicated that quality-accredited higher education institutions need more technological adoption and improvement. The inferences drawn by this study will be helpful to all the stakeholders, such as the University Grant Commission Nepal, higher education institutions, teachers, and policymakers who are directly or indirectly involved in the reform of higher education.

***Keywords*:** job performance, technological changes, HEI, QAA colleges, UGC

Introduction

Employee performance is commonly evaluated in terms of the quantity and quality of output, timeliness, attendance, work efficiency, and overall effectiveness (Mathis & Jackson, 2010). In the context of higher education, university teachers perform three core functions: teaching, research, and public service. Teaching responsibilities include lesson preparation and delivery, development of instructional materials, student assessment, supervision, consultation, and the adoption of innovative pedagogical approaches. Research responsibilities involve identifying problems, conducting investigations, presenting findings at conferences, and publishing in academic journals or textbooks, while public service extends to contributions within the institution and the wider community.

Technological change refers to improvements in process efficiency for increasing output without requiring additional inputs. In contemporary organizations, technology has become integral to operations, extending beyond basic office tools and including advanced information systems, customized software, and specialized equipment that enhance efficiency and effectiveness (Heeks & Stanforth, 2015). Technological innovations minimize human effort, reduce task completion time, and in some cases eliminate the need for certain processes.

Particularly for smaller organizations, the acquisition or upgrading of technology involves high financial costs, despite its benefits, necessitating careful evaluation of expected benefits against implementation expenses (Calışkan, 2015). Substantial improvements in operational efficiency and productivity can offset initial investments over time, although such costs may delay adoption.

Several empirical studies consistently exhibit a positive association between technological change and employee performance. Abbas et al. (2014) concluded that information technology (IT) significantly reduces workload, improves control over errors and fraud, saves time, and enhances employee productivity. Similarly, Imran et al. (2014) found that technological advancement positively influences employee performance, training, and motivation. Wanza & Nkuraru (2016) further reported that technological advancement improves efficiency and effectiveness, and eases workload, while Archibong & Ibrahim (2021) confirmed that technology accelerates service delivery, reduces effort and time, and simplifies work processes.

Technological advancement has significantly improved the quality of services provided by higher education institutions (HEIs). HEIs have increasingly invested in technological resources, leading to faster task completion and reduced human effort, which positively affects employee performance (Pohekar, 2018). HEIs have transformed teaching and learning practices drastically. Easy availability of lecture videos has enabled flexible access to content, allowing classroom time to be used for interactive activities such as group work and discussions. Teaching faculties are therefore encouraged to adopt modern

instructional tools such as PowerPoint presentations and smart boards to enhance teaching effectiveness (Tamilselvi, 2017).

Both teachers and students benefit from the adoption of advanced technologies such as Learning Management Systems (LMS), Virtual Classrooms, Smart Classrooms, Artificial Intelligence (AI), Digital Assessment and Examination Systems, E-Books, and Digital Libraries. It improves content delivery, knowledge updates, enhances motivation, and facilitates communication through digital platforms. However, older staff resist technological change, highlighting the need for motivation and proper training. In general, it can be said that technological advancements improve overall organizational efficiency and productivity, as well as teachers' job performance in higher education institutions. Consequently, the current study focuses on evaluating how the technological changes impact the teachers' job performance in quality-accredited higher education institutions in Nepal.

Research Question

The researcher has tried to answer the following research question:

- To what extent are technological changes associated with the job performance of teachers in higher education institutions?

Conceptual Framework of the Study

The following conceptual framework has been framed in this study:

Research Objectives

The study aims to assess the association between technological changes and teachers' job performance in higher education institutions.

Rationale of the Study

It is widely acknowledged that the job performance of teaching faculty significantly influences the overall quality of education delivered in higher education institutions. Consequently, technological advancement significantly influences the overall job performance of teaching faculties. Therefore, understanding how technological advancement affects the job performance of teachers in QAA-certified colleges is crucial for fostering a culture of continuous improvement and improving educational outcomes.

Research Design and Methods

The descriptive survey design has been executed in this study.

Pilot study

The two subject experts examined the drafted 5-point Likert scale questionnaire for their suitability, applicability, and appropriateness of its content, i.e., content validity. Then, the questionnaire was improved as per expert advice, and the same were tested through the pilot study to ensure their comprehensibility and readability. The questionnaire

was administered to 104 teaching faculties of 3 accredited campuses, namely: Triyuga Multiple Campus (Gaighat), Janta Multiple Campus (Itahari), and J.S. Murarka Multiple Campus (Lahan). The respondents were requested to comment on the questionnaire items' content, clarity, format, and appropriateness. Before the final data collection, the questionnaire was revised based on participants' feedback to ensure translational validity, i.e., face validity. Furthermore, the reliability of the questionnaire was tested with Cronbach's alpha (α). If Cronbach's alpha (α) ≥ 0.70, then the questionnaire items were considered reliable. The following questionnaire items met the standard value (α) of Cronbach's alpha, which is 0.7:

Table 1

Output of Reliability Test of Dependent and Independent Variables (Pilot Study)

Variables	No. of Items	Cronbach's alpha
Technological Changes	10	0.793
Job performance of teachers	15	0.868

Cronbach's alpha value of technological changes (independent variable) was 0.793 above the cut-off value of 0.7. Furthermore, Cronbach's alpha value of teachers' job performance (dependent variable) was 0.868 above the cut-off value of 0.7. So, the questionnaire was forwarded to use in the main study.

Period of the Study

The primary data for the study were collected from April 2023 to May 2023.

Population of the Study

The population consisted of all the 3,900 teachers who were working in the 76 accredited colleges in Nepal.

Sample Frame

Altogether, 13 institutions had been selected as a sample frame, which were at the top of the accreditation process. They consisted of 9 re-accredited institutions, 2 cycle-completed institutions for re-accreditation, plus 2 pre-visit completed institutions for re-accreditation.

Sampling Design

Convenience as well as quota sampling design had been executed. The researcher visited the target campuses, distributed the structured questionnaire to the available faculty, and collected the responses on the same day or the next day. A quota system was planned to select at least 30 employees from each of the 13 campuses under a sample frame.

Response Rate

A total of 424 questionnaires were distributed. 390 were received back, and 5 responses were rejected as they were incomplete. The study eliminated 15 responses from the study, 14 responses from teaching staff whose job experience was less than 2 years, of

being not deeply familiar with the institution, and 1 response (data point 48), being influencing data point that might influence analysis results negatively. So, the valid number of respondents is 370 (385-15), which is 9.5% of the universe and is an appreciable sample.

Sample Size

The simplified formula proposed by Yamane (1967) was used to calculate the sample size, which is as follows:

$$n = \frac{\mathrm{N}}{1 + \mathrm{N}(e)^2}$$

Where n is the sample size, N is the population size, and e is the level of precision. A 5% precision, 95% confidence level, and 0.5 (50%) degree of variability were assumed.

Now, $n = \frac{\mathrm{N}}{1+\mathrm{N}(e)^2} = \frac{3900}{1+3900(0.05)^2} = 362.79$

Furthermore, the sample size can be determined by using the published table. Israel (1992) presented the table for the determination of sample size. According to the table, if the size of the population is 4000, then the appropriate sample size is 364 at a 5% precision level, 95 % confidence level, and 0.5 (50%) degree of variability. So, the sample size, which consisted of 370 respondents, was appropriate.

Data management

The received questionnaires were coded and entered into SPSS 20. Subsequently, the data were examined for any missing values; they were minimal and randomly distributed. Hair et al. (1998) stated that if the missing values are limited and occur completely at random, then any omissions are considered a secondary concern. So, any absent data were considered as a secondary concern. The mean value of the scale was substituted in place of the missing value to minimize the difficulties in the analysis of the data, which is a frequently utilized method for handling missing data (Egan et al., 2004). As per ethical considerations, the confidentiality and anonymity of the respondents have been ensured.

Questionnaire Design: Scaling Technique in the Questionnaire

The questionnaire had three parts: (a) objectives of the study and instructions for the respondents, (b) demographic variables, and (c) a 5-point Likert scale questionnaire related to the main variables in the order as follows:

1-Strongly Disagree, 2-Disagree, 3-Undecided, 4-Agree, and 5-Strongly Agree.

Measurement of Job Performance of Teachers

Evaluation of job performance for teachers in higher education institutions often involves a combination of methods, such as student evaluations, peer assessments, self-assessments, classroom observations, and assessment of scholarly outputs.

Regarding the present study, the job performance of the teachers was measured through self-assessment by the teachers themselves using a 5-point Likert scale questionnaire.

Data analysis tools

The association of technological changes (independent variable) with the job performance of teachers (dependent variable) was tested with the Pearson correlation test. Table 2 presents the rule of thumb for interpreting the value of the Correlation Coefficient.

Table 2.

Rules of thumb for the range of the correlation coefficient

Coefficient Range	Strength of Association
± 0.00 to ± 0.20	Slight, almost negligible
± 0.21 to ± 0.40	A small but definite relationship
± 0.41 to ± 0.70	Moderate
± 0.71 to ± 0.90	Strong
± 0.91 to ± 1.00	Very strong

Furthermore, the relationship between technological changes (independent variable) and the job performance of teachers (dependent variable) was determined with the help of simple regression analysis. The regression model for the study is as follows:$PoT = \alpha + \beta (TC) + \varepsilon$ … … … … … … (1) Where, PoT = Job performance of Teachers; α = Intercept Line; and β = Regression Line, TC = Technological Changes; ε = Error Term.

Results and Discussion

Descriptive Statistics

Descriptive statistics such as mean, standard deviation, skewness, maximum, and minimum were used to establish the central tendency and measure of dispersion of key variables. Both the variables were negatively skewed with varying degrees of skewness.

Table 3

Internal Consistency, Correlation Coefficient, and Descriptive Statistics of Summated Scales

Factors	No. of Items	Reliability	Correlation coefficient with job performance	Mean	Std. Deviation	Skewness		Minimum	Maximum
				Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic
Technological changes	10	0.849	0.392**	18.2135	4.17508	-0.775	0.127	5	25
Job performance	15	0.861	-	58.4432	8.11892	-1.111	0.127	23	75

**Correlation is significant at the 0.01 level (2-tailed). Valid N (listwise): 370

Reliability of Questionnaire

Cronbach's alpha coefficient was used to test the internal consistency of the research instrument. If $\alpha \geq 0.70$, then the items were considered reliable. As presented in Table 3, Cronbach's alpha value of technological changes (independent variable) was 0.849, which was above the cut-off value of 0.7. Furthermore, Cronbach's alpha value of job performance of teachers (dependent variable) was 0.861, which was above the cut-off value of 0.7.

Validity of Questionnaire

Pearson's correlation coefficient (r) was used to establish criterion validity. The critical value of Pearson's correlation coefficient at a 0.05 significance level for a two-tailed test, with 368 degrees of freedom (N -2), was determined to be 0.10197. The criterion validity of the questionnaire is established when each item in the questionnaire exhibits a correlation higher than the critical value. Here, calculated correlation coefficients of all the questionnaire items exceeded the critical value, 0.10197. So, the criterion validity of the questionnaire is established.

Table 4

Pearson's Correlation Analysis for Validity of Items

Variable	Items														
Technological changes	TC_1	TC_2	TC_3	TC_4	TC_5	TC_6	TC_7	TC_8	TC_9	TC_10					
Pearson's correlation coefficient (r)	.81**	.76**	.73**	.77**	.54**	.49**	.39**	.49**	.41**	.7**					
Validity criterion met	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
Job performance	PoT_1	PoT_2	PoT_3	PoT_4	PoT_5	PoT_6	PoT_7	PoT_8	PoT_9	PoT_10	PoT_11	PoT_12	PoT_13	PoT_14	PoT_15
Pearson's correlation coefficient (r)	.6**	.69**	.64**	.67**	.7**	.73**	.61**	.69**	.52**	.45**	.65**	.63**	.27**	.55**	.52**
Validity criterion met	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

**Correlation is significant at the 0.01 level (2-tailed).

Valid N (listwise): 370

Assessment of Normality Assumption

The two tests of normality consistently rejected the assumption of normality as can be seen in Table 5:

Table 5

Kolmogorov-Smirnov & Shapiro-Wilk Tests of Normality

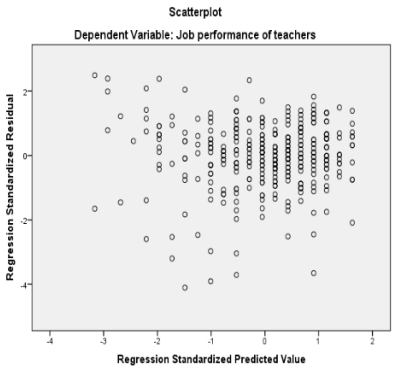
	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Standardized Residual	0.096	370	0.000	0.954	370	0.000

Assessment of Homoscedasticity Assumption

The homoscedasticity assumption of the data was checked with the visual display of scatterplot of standardized residuals against standardized predicted values.

Figure 1

Scatter Plot of Standardized Residuals against Standardized Predicted Values



The distributional pattern of standardized residuals against standardized predicted values was random. This suggested that there was no evidence against the assumption of homogeneity of error terms.

Assessment of Outlying Observation

The source of **o**utlying observations in residuals is due to either a dependent variable or an independent variable. The assessment of outlying observations due to the dependent variable (aka outliers) is carried out by assessing the studentized deleted residuals. The assessment of outlying observations due to independent variables (aka high leverage points) is carried out by assessing the centered leverage statistics. SPSS provides various statistics of residuals, centered leverage values, and Cook's distance under the table Residuals Statistics. The edited version of residual statistics is presented in Table 6.

Table 6

Residual Statistics (Edited)

	Minimum	Maximum	Mean	Std. Deviation	N
Standardized Residual	-4.106	2.492	0.000	0.999	370
Studentized Deleted Residual	-4.217	2.549	-0.001	1.008	370
Cook's Distance	0.000	0.098	0.004	0.011	370
Centered Leverage Value	0.000	0.027	0.003	0.004	370

The following points and conclusions that emerged:

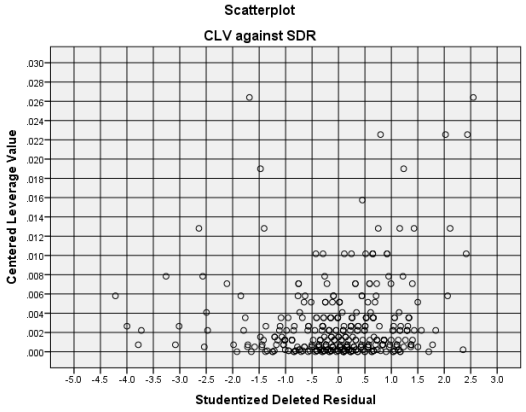
- The minimum value of the studentized deleted residual was -4.217, and its absolute value was greater than 3. According to a rule of thumb, at least one outlier was present in the model.

- The maximum centered leverage value was 0.027, greater than 0.0081 (3k/n = 3/370). According to a rule of thumb, at least one unusual value that could be considered a high leverage point is present in the data.

In order to have a broad picture of outlying observations, it is a good idea to construct and present the scatter plot of centered leverage values against the studentized deleted residuals. The scatter plot and some remarks are presented in Figure 2.

Figure 2

Scatterplot of centered Leverage Value against Studentized Deleted Residual



Few centered leverage values were higher than 0.0081(3k/n), and each of them, by a rule of thumb, could be considered as high leverage points, but their corresponding studentized residual values are within the range of -3 to 3. As a result, they might not have undue influence on the model. Few absolute values of studentized deleted residuals were more than 3, and each of them, by a rule of thumb, can be considered as outliers, but their corresponding centered leverage values are less than 0.0081(3k/n). As a result, they may not have undue influence on the model. All the high leverage values, as well as outliers present in the model, were not influential points (data points that may not change the results of regression analysis), since the maximum value of Cook distance was 0.0098, which was far below the value of 1.

Correlation of Technological Changes with Teachers' Job Performance

The Pearson correlation coefficient was computed to assess the association between technological changes (independent variable) and the teachers' job performance (dependent variable). The correlation between technological changes and the teachers' job performance was positive and significant, r (368) = 0.392, p = 0.000 (as per Table 3). The Pearson correlation coefficient value (r-value), 0.392, lay within the coefficient range from + 0.21 to + 0.40. So, a small but definite relationship existed between technological changes and the job performance of teachers.

The result is in line with the findings of other studies, such as Timalsina (2022), r = 0.825; Archibong & Ibrahim (2021), r = 0.428; Osunsan et al. (2019), r =0.717; and Al-Jaradat et al. (2013), r = 0.648.

Regression Analysis

The relationship between technological change and the teachers' job performance was determined by executing a simple linear regression analysis.

Table 7

Impact of technological changes on job performance

Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	β	Std. Error	Beta		
(Constant)	44.551	1.742		25.570	.000
TC	0.763	0.093	0.392	8.18	.000
R	0.392				
R^2	0.154				
Adjusted R^2	0.152				
F-Value	66.907	(p=0.000)			

Table 7 revealed that technological changes had a significant and positive relationship with the teachers' job performance, $\beta = 0.763$, $t(368) = 8.18$, $p<0.01$. Technological changes also explained a significant proportion of variance in the teachers' job performance, $R^2 = 0.154$, $F(1,368) = 66.907$, $p< 0.01$.

The result was in line with the findings of other studies, such as Timalsina (2022), β = 0.426; Archibong & Ibrahim (2021), β=2.151; and Osunsan et al. (2019), β = 0.7. But the result was not in line with the findings of Ekechi & Umar (2020), β = -0.205.

Conclusion

Technology makes tasks easier, and so the use of technology greatly escalates employee performance. It boosts employee productivity by saving time. Learning Management System (LMS), Virtual Classrooms, Smart Classrooms, Artificial Intelligence (AI), Digital Assessment and Examination Systems, E-Books, and Digital Libraries help students learn more effectively, as well as support teachers in delivering lessons more effectively. Therefore, it is essential to adopt advanced technology and digitize teaching and learning methods to improve and elevate the quality of education. However, technological advancement in quality-accredited higher educational institutions in Nepal was small.

Implications

Here are some potential implications of such a study:

- Incorporating Technological Advancements: This study may encourage HEIs to invest in relevant educational technologies and train the teachers, enabling them to leverage technology effectively in their teaching.
- Enhanced Student Learning: This study may encourage HEIs to Institutions to create a technology-rich learning environment that enables teachers to engage students in innovative and interactive ways, leading to improved academic achievements.
- Quality Assurance and Accreditation**:** This study suggest University Grant Commission (UGC) and other accreditation bodies consider technology integration as a component of institutional quality assessment.

References

Abbas, J., Muzaffar, A., Mahmood, H. K., & Ramzan, M. A. (2014). Impact of technology on performance of employees (A case study on Allied Bank Ltd, Pakistan). *World Applied Sciences Journal, 29*(2), 271–276. doi:10.5829/idosi.wasj.2014.29.02.1897

Al-Jaradat, O., Nagresh, M., Al-Shegran, A., & Jadellah, N. (2013). Impact of change management on the performance of employees in university libraries in Jordan. *European Journal of Business and Management, 5*(2).

Archibong, U., & Ibrahim, U. A. (2021). Assessing the impact of change management on employee performance: Evidence from Nile University of Nigeria. *International Journal of Research in Business and Social Science, 10*(4), 525–534. doi:10.20525/ijrbs.v10i4.1246

Çalışkan, H. K. (2015). Technological change and economic growth. *Procedia – Social and Behavioral Sciences, 195*, 649–654. doi:10.1016/j.sbspro.2015.06.174

Egan, T. M., Yang, B., & Bartlett, K. R. (2004). The effects of organizational learning culture and job satisfaction on motivation to transfer learning and turnover intention. *Human Resource Development Quarterly, 15*(3), 279–301. doi:10.1002/hrdq.1104

Ekechi, F. O., & Umar, A. I. (2020). Effect of change management on employee's performance in Nigeria universities. *European Journal of Business and Management, 12*(20). doi:10.7176/EJBM/12-20-05

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (1998). *Multivariate data analysis* (5th ed.). Prentice-Hall.

Heeks, R., & Stanforth, C. (2015). Technological change in developing countries: Opening the black box of process using actor-network theory. *Development Studies Research, 2*(1), 33–50. doi:10.1080/21665095.2015.1026610

Imran, M., Maqbool, N., & Shafique, H. (2014). Impact of technological advancement on employee performance in banking sector. *International Journal of Human Resource Studies, 4*(1), 57–70. doi:10.5296/ijhrs.v4i1.5229

Israel, G. D. (1992). *Determining sample size*. Retrieved from https://www.researchgate.net/profile/Subhash-Basu-3/post/how...pdf

Mathis, R. L., & Jackson, J. H. (2010). *Human resource management* (13th ed.). South-Western Cengage Learning.

Osunsan, O. K., Methode, K., Florence, I., Augustine, W., Abiria, P., & Innocent, B. (2019). Effect of organizational change on employee performance among selected commercial banks in Bujumbura, Burundi. *East African Scholars Journal of Economics, Business and Management, 2*(4), 225–234.

Pohekar, D. (2018). Role of ICT on universities administrative services and management. *International Research Journal of Engineering and Technology, 5*(11), 266–271.

Tamilselvi, R. (2017). *Impact of change management on performance of college teachers – A study with reference to arts and science colleges in Chennai* (Doctoral dissertation, University of Madras). http://hdl.handle.net/10603/181567

Timalsina, G. (2022). *Effect of organizational change on employee performance in banking industries of Nepal* (Master's thesis, Tribhuvan University). https://elibrary.tucl.edu.np/bitstream/123456789/18243/1/Full%20Thesis.pdf

Wanza, S. L., & Nkuraru, J. K. N. (2016). Influence of change management on employee performance: A case of University of Eldoret, Kenya. *International Journal of Business and Social Science, 7*(4). Retrieved from http://www.ijbssnet.com

Yamane, T. (1967). *Statistics: An introductory analysis* (2nd ed.). Harper and Row.

Research Journal on Multi-disciplinary Issues
(A Peer Reviewed Open Access Journal)
ISSN: 2705-4594 [Print] E-ISSN 2705-4608 [Online]
Vol. 6 No.1 February 2026, pp. 59-70
eJournal site: www.nepjol.info
www.jsmmc.edu.np

A Review of Reduced Rainfall Effects on Fisheries and Aquaculture of Madhesh Province, Nepal

[1]Praveen Kumar Singh

[1]Faculty Member
Department of Zoology
JSMM Campus Lahan, Siraha (Nepal)
Email:
spraveensinghpk988@gmail.com

Article History:
Submitted: Nov. 09, 2025
Reviewed: January 20, 2026
Accepted: February 10, 2026
Doi:
https://doi.org/10.3126/rjmi.v6i1.91306

URL.: www.jsmmc.edu.np
URL: www.nepjol.info

Abstract

Nepal's freshwater fisheries are critically dependent on monsoon driven hydrological cycles. This review explores the impacts of reduced rainfall on fisheries and aquaculture in Madhesh Province, with a focus on understanding the decreased precipitation on fish reproduction, migration patterns, and habitat condition and socio-economic consequences for local fishing communities due to climate change. Madhesh Province, characterized by its warm climate and fertile lowlands, is a key region for freshwater aquaculture, particularly of species such as carp and tilapia. However, declining and erratic rainfall has led to reduced water availability in ponds, rivers, and wetlands, significantly affecting fish growth, breeding cycles, and overall productivity. These climate changes occurs due to rising temperatures and increased evaporation stress on aquatic ecosystems and raise the risk of disease outbreaks, with significant socio-economic impacts on fishing communities who rely heavily on seasonal water availability for their livelihoods. In Madhesh Province, where aquaculture supports food security and income, reduced rainfall exacerbates poverty, reduces employment, and increases vulnerability. This review underscores the urgent need for adaptive management strategies, including improved water resource governance, climate resilient aquaculture practices, and livelihood diversification, to mitigate the impacts of climate variability on fisheries and enhance resilience in the region.

Keywords: climate change, aquaculture, precipitation, breeding cycle

Introduction

Climate change has significantly affected weather patterns in Nepal, leading to prolonged droughts and increasingly unpredictable rainfall (Gurung et al., 2011). Climate change is having a profound impact on Nepal's natural resources, particularly water

availability and biodiversity. Rising temperatures, shifting precipitation patterns, and the retreat of glaciers are reducing the availability of water for essential uses such as drinking, irrigation, and hydropower generation. In parallel, climate change is threatening many endemic species of flora and fauna species that are found only in specific regions of Nepal and are vital to the ecological balance and cultural heritage of the country. Mass deaths of a number of aquatic species, including fish, plants, corals, and animals, have been linked to climate change. Emissions of carbon dioxide are predicted to have at least doubled from their mid-1980s levels by 2050 (Ninawe et al., 2018). Increasing heat, changing rainfall, shrinking habitats, and more severe weather events are putting many species at risk of extinction. The combined impact of shrinking water resources and biodiversity loss is especially harsh on poor and vulnerable communities, who depend directly on natural ecosystems for food, fuel, medicine, and income. These populations often lack the resources to recover, making them increasingly susceptible to poverty, food insecurity, and displacement as climate conditions worsen (Karki et al., 1970). Thus, these climate-related stresses threaten not only their livelihoods but also the broader rural economy that depends on livestock farming (Gurung et al., 2011).

Since 1997, Nepal's mountainous regions have shown an annual warming trend of 0.06 to 0.12°C, raising concerns about climate change on a global scale. The complex interactions between the monsoon system and Nepal's hilly terrain are not well understood, despite the country's hydrology being mostly dependent on the South Asian Monsoon (Basnet et al., 2020). Almost two-thirds of the Earth's surface is made up of aquatic systems (Barange et al., 2018). Nepal is one of the least developed countries, striving to achieve the status of a developing nation and it cannot withstand the consequences of global warming. Over the past 36 years (1975–2010), western Nepal has experienced a rapid temperature rise of 1.2°C per year, nearly double the global average. Overall, Nepal's average temperature increase is about 0.06°C annually. This warming has made hill and high hill regions more vulnerable to climate change, leading to more frequent climate-induced disasters like droughts, floods, and landslides, which have severely affected agriculture (Bista et al., 2018). Nepal’s wetlands are vital ecosystems supporting rich biodiversity and the livelihoods of over 21 ethnic communities. Despite their importance, these areas are rapidly degrading due to the combined pressures of climate change, urbanization, and unplanned development (Timalsina et al., 2025).

Healthy foods like fish are rich in immune-boosting chemicals like taurine, melatonin, and omega-3 fatty acids (Mendivil, 2021). Moreover, fish is essential to the food and nutritional security of many underprivileged and marginalized people worldwide (Kwasek et al., 2020). Women have important roles in small-scale fisheries, particularly in post-harvest and processing, which supply 90% of fisheries jobs and two-thirds of fish for human consumption (Giri, 2018). Nepal’s inland finfish aquaculture is

thriving, leveraging the country's varied climate and geography to boost production. This expansion is a key driver for food security and rural livelihoods, fostering a path toward sustainable economic growth (Gautam & Sapkota, 2023). The environment and fish productivity are seriously threatened by climate change, which is reflected in unpredictable monsoon patterns and decreased rainfall.

Specifically, this study seeks to evaluate how declining water availability affects fish production, explores socio-economic impacts on fish farmers, and identifies local adaptation strategies like artificial ponds and water conservation. However, the review faces several limitations, including a lack of region specific data linking rainfall changes directly to fisheries output, difficulty in isolating rainfall effects from other environmental and socio-economic factors, and uneven implementation of adaptation practices across communities. Despite these challenges, the review highlights the need for further localized research and offers insights to support policy-making in water management, climate adaptation, and sustainable rural development.

Results and Discussion

Hydrology and Rainfall Patterns in Nepal

Nepal's Department of Hydrology and Meteorology began in 1962 as a small hydrology unit within the Department of Electricity. It became the Department of Hydrological Survey in 1964 under Acting Director Gokul. Recognizing the global importance of water resource management, international collaboration in hydrology was deemed essential. Meeting growing demands for water requires accurate data and skilled interpretation, particularly of precipitation and evaporation, traditionally handled by meteorological services. With support from the United Nations Development Programme (UNDP) and World Meteorological Organization (WMO), Israeli meteorologist Mordechai Gilead was appointed as a Senior WMO expert to assist in establishing the department (Department of Hydrology and Meteorology of Nepal, 2023).

Nepal experiences four seasons: pre-monsoon (hot, dry, and windy), monsoon (wet with southeasterly winds), post-monsoon (dry and sunny), and winter (cold with snowfall in high mountains). The country's precipitation is largely shaped by the summer southwest monsoon and winter western disturbances. Due to its rugged mountainous landscape, Nepal is prone to extreme weather events such as floods, landslides, and droughts (Karki et al., 2017). Climate change is raising temperatures and altering rainfall patterns, causing rivers to dry more often and reducing water flow between waterways. These changes contribute to global warming and disproportionately affect vulnerable communities, despite their minimal contribution to the problem (Kayes et al., 2025). Nepal's hydrological challenge creates a fundamental water security crisis, characterized by seasonal flooding and water surplus during the monsoon followed by a prolonged, severe dry season with acute water scarcity (Gurung, 2012). Additionally, climate

change, driven by human emissions, disrupts rainfall and glacier melt, threatening water resources and causing disease spread (Upreti, 2013). Similarly, climate change significantly affects the hydrologic cycle, impacting watersheds globally and locally. Therefore, future strategies for flood control, hydropower, irrigation, and ecosystem preservation need to be adjusted accordingly (Teutschbein & Seibert, 2010).

Climate Risks to Aquaculture

Climate change affects fisheries and aquaculture both positively and negatively. Warmer regions like the Terai may benefit from expanded warm-water species and farming areas. However, risks include invasive species, fish diseases, and water quality issues. Cold-water aquaculture, like trout farming, is especially vulnerable to rising temperatures (Wagle et al., 2011). Climate change induced salinity intrusion has both global and local effects on the growth performance and survival of Thai Pangas (*Pangasius hypophthalmus*) in Bangladesh (Mandal et al., 2020). Climate change has disrupted small-scale fisheries in Bangladesh, especially affecting Hilsa fish, by delaying monsoons and altering breeding cycles. It is also changing fish migration, behavior, feeding, reproduction, and catch levels (Giri, 2018). Similarly, thermal habitats of freshwater fish species are changing due to climate change (Xu et al., 2024). This finding brought attention to climate change is increasingly threatening global fish diversity and the sustainability of fisheries, creating significant uncertainty for aquatic ecosystems and the communities that depend on them. Rising temperatures, altered water chemistry, and shifting habitats are directly affecting fish physiology, behavior, and distribution (Huang et al., 2021).

Climate Effects on Fish and it's Habitats

Climate change has diverse impacts on aquatic systems, posing significant risks to vulnerable fisher communities. As a highly climate-sensitive sector, fisheries play a vital role in global nutrition, food security, and livelihoods, making them particularly vulnerable to environmental changes (Galappaththi et al., 2022).This aligns with the findings that climate change poses both direct and indirect threats to aquatic ecosystems and fish populations. Direct impacts, such as reduced rainfall, increased evaporation, and elevated water temperatures, disrupt the physiological functions and behavioral patterns of fish. These changes can impair growth, reproduction, and survival of the fish. Indirectly, climate change intensifies water demand for agriculture, reducing reservoir levels and degrading aquatic habitats. These hydrological changes affect food availability, shelter, and overall ecosystem stability, increasing fish vulnerability to predation, disease, and invasive species (Patrick, 2016). Similarly, the diversity and distribution of fish in aquatic environments, as well as their health, are influenced by temperature and dissolved oxygen (DO), along with elevation gradients and seasonal variations (Adhikari et al., 2021).

Ecosystem and Reproductive Stress in Indigenous Fish

Climate change disrupts both global and local environments, harming aquatic ecosystems by shifting species' habitats, disturbing breeding patterns, and breaking down food chains (Ninawe et al., 2018). As water levels decline, aquatic habitats particularly floodplains and shallow lakes shrink, leading to habitat loss for many species. This habitat reduction is especially critical for indigenous fish such as *Tor putitora* and *Channa striata*, which depend on inundated areas for spawning; insufficient rainfall disrupts these breeding cycles and can result in reproductive failure. Additionally, reduced water volumes tend to warm more quickly and hold less dissolved oxygen, placing further stress on fish populations and increasing mortality rates. The disruption continues through the food web, as decreased runoff limits the flow of nutrients into aquatic ecosystems, reducing plankton production and thereby diminishing the food base that supports fish communities.

Carp Culture and Environmental Issues in the Terai

The majority of the "pond" or warm-water fish production takes place in the Terai region, where 94% of the fish ponds are located (Yadav et al., 2023). Similarly, pond culture is the only method of fish breeding on the plains (Farquhar et al., 2018). In Nepal, seven economically valuable carp species are commonly raised using polyculture systems in ponds, lakes, and enclosures. Recently, pangas (*Pangasianodon hypophthalmus*) and Nile tilapia (*Oreochromis niloticus*) have become popular among small-scale and commercial farmers (Wagle, 2016). In Nepal, *Schizothorax moleshowrthii* and *S. progastus* are regarded as delectable fish (Gautam, 2015). The observed trained is the pond culture that is a very popular aquaculture practice with many aquatic species cultured in the pond. Weather conditions like floods, droughts, cold spells, and temperature variations, however, pose a threat to aquaculture. These conditions significantly affect fish survival, growth, and reproduction in pond systems (Paul et al., 2024).

Drought Impacts on Freshwater Life and Aquaculture

Climate change impacts were studied that globally alters the status, processes and dynamics of terrestrial, freshwater, and marine ecosystems (Starck & Wolter, 2024) and also impacts livelihoods, particularly in sectors like agriculture, fisheries, and tourism (Zaman et al., 2025). Other paper examined that drought impacts on freshwater organisms directly by causing mortality and altering physiology in response to high temperatures and desiccation, or more indirectly through changes in inter specific interactions (Cushway et al., 2025).This observation aligns with previous finding that highlights climate change variability in location, timing, and magnitude of rainfall can alter how species respond to the drought and flood disturbances (Hansen et al., 2025).

Aquaculture, especially pond-based and cage fish farming, is increasingly vulnerable to the impacts of reduced rainfall. Water scarcity due to insufficient precipitation limits the availability of water needed to maintain ponds and tanks, threatening the sustainability of these systems. Additionally, elevated temperatures and deteriorating water quality caused by lower water levels create stressful conditions for fish, which can lead to disease outbreaks and significant stock losses. To cope with these challenges, farmers often resort to pumping water or installing aeration systems to maintain adequate oxygen levels measures that significantly raise production costs and strain the economic viability of aquaculture operations.

Socio-Economic Impacts on fish farmers and fisher folk

The present study underscores the impacts of climate change on both fisheries ecosystems and livelihoods of fish farmers and fisher folk (Allison et al., 2009). Climate change significantly impacts people, their livelihoods, and ecosystems, posing a serious global challenge especially for the poor in developing countries (Sharma & Neupane, 2025). Furthermore, the Hindu Kush Himalaya region in Nepal is climate-sensitive, with fragile water systems. As a source of major rivers, climate change threatens water supply, affecting millions and their livelihoods (Mudbhari et al., 2022). Aquaculture, along with commercial fishing, provides fundamental support for maintaining worldwide food security and economic progress and nutritional wellness (Abeysinghe et al., 2025). According to research, climate change events had a significant impact on the management of crab points, pond aquaculture, and shrimp farming in enclosures along Bangladesh's southwest coast. They have also had a negative impact on the livelihoods and adaptive challenges of communities that depend on aquatic ecosystems because of storm surges, prolonged floods, salinity increases, sea level rise, droughts, and river bank erosion (Amin et al., 2024).

Furthermore, Bangladesh is highly vulnerable to climate change. Over 11% of its population is involved in the fishing sector, which supplies 60% of the country's animal protein. However, climate change is causing food insecurity and health issues (Alam & Mallick, 2022). Specifically, aquaculture and capture fisheries in Nepal involve about 750,000 people, with rivers contributing nearly 50% of captured fish production (International Journal of Fisheries and Aquatic Studies, 2017). Particularly in landlocked nations and for communities living beside lakes and rivers, fish from inland water capture fisheries represent a significant supply of animal protein. About 90% of the catch is made up of finfish, along with a few crustaceans and mollusks (Welcomme, 2011). These finding highlight the several ethnic communities are traditionally engaged in fishing and related livelihoods in Nepal. In the Koshi region, groups such as the Malaha, Bahardar, Mukhiya, and Sahani are deeply involved in fishing, boating, and fish marketing. Fishermen of Nepal is general have neither land nor asset of their own. They often receive their food and daily goods from the wholesalers, and they pay for this with their

catches. The livelihoods of thousands of Nepalese who depend on inland fisheries are increasingly at risk due to declining fish productivity driven by reduced rainfall. As fish catches decrease, small-scale fishers many of whom have limited alternative income sources face significant economic hardship and job insecurity. This decline also threatens food security, particularly in rural communities where fish serves as a crucial source of protein, and its scarcity can worsen malnutrition. Beyond the economic and nutritional impacts, fishing holds deep cultural significance for several ethnic groups for whom traditional fishing practices are closely tied to their cultural identity. As fish populations dwindle, these communities face not only financial strain but also the erosion of long-standing cultural traditions.

Adaptation and Mitigation Strategies

Climate change adaptation is a key development priority in many developing countries like Nepal, where most people rely on farming (Tiwari et al., 2014). Due to rising climate risks, developing and implementing adaptation (Manandhar et al., 2011). The process of adapting to climate change involves making the necessary adjustments and changes in order to lessen its adverse impacts. To reduce the vulnerability of climate change integration of aquaculture with agriculture irrigation could be substantial to increase the efficiency strategies is essential of water and land use (Gurung, 2012). This study's finding suggests to address the growing challenges facing inland fisheries in Nepal due to reduced rainfall, a comprehensive approach combining technological, ecological, and policy-level interventions is crucial. Promoting water-efficient aquaculture systems, such as re-circulating aquaculture systems (RAS) and integrated fish farming can help optimize water use while sustaining production. At the ecological level, improved watershed management through reforestation and soil conservation can enhance water retention and groundwater recharge, supporting the long-term resilience of aquatic ecosystems. Additionally, the implementation of early warning systems, including real-time monitoring of rainfall and river flows, can enable more adaptive and informed fisheries planning. Equally important is the integration of fisheries management into national climate adaptation policies, ensuring that the sector is supported within broader strategies aimed at building climate resilience.

Technology Innovations in Aquaculture

Recirculating Aquaculture Systems (RAS): A Recirculating Aquaculture System (RAS) is a fish-farming method where water is continuously filtered, cleaned, and reused, allowing fish to grow in controlled tanks with minimal water waste. They provide precise control over water quality and temperature, making fish production resilient to rainfall variability. However, they come with high initial costs and maintenance requirements.

Biofloc Technology (BFT): This microbial-driven system converts ammonia and other waste into microbial biomass, which serves as supplemental feed, reducing water exchange and boosting feed efficiency. It also helps maintain good water quality and can lower disease risks beneficial under constrained water scenarios.

Integrated Farming Systems

IFCAS (Integrated Floating Cage Aquageoponics System): Developed in Bangladesh and trialed in Nepal, IFCAS integrates fish culture with vegetable production using pond waste as nutrient input. It's especially useful during dry seasons in shallow or shaded ponds. Fish are raised in tanks, and their nutrient-rich water is used to feed plants growing in sand beds. The sand beds act as a natural filter, cleaning the water before it cycles back to the fish tanks.

Integrated Multi-Trophic Aquaculture (IMTA): Doesn't rely solely on one species rather, it combines fish with other organisms (e.g. shellfish, seaweed) that utilize the waste from fish as feed, promoting nutrient recycling and ecosystem balance.

Precision Aquaculture, IoT, and AI Integration: These tools allow real-time tracking and management of water parameters through sensors, combined with machine learning to make dynamic decisions e.g., optimizing feeding, detecting disease early, and regulating environmental conditions.

Climate-Smart Management Practices: Responding to water quality fluctuations (due to heat or rainfall) using lime, aeration, zeolite, pond bottom raking, and added oxygen, along with adjusting feeding schedules. Employ ground water pumping, partial harvesting to reduce stocking density, and delaying stocking to cope with reduced water availability.

Conclusion

Climate change is disrupting inland water bodies through irregular rainfall, changing inflows, and fluctuating water levels. These hydro-climatic changes impact fish communities by affecting their growth, reproduction, behavior, and distribution mainly due to reduced rainfall and increased evaporation. Hence, reduced rainfall, a consequence of changing climate regimes, poses a growing threat to inland fisheries and aquaculture sectors in Madhesh province. Addressing this issue requires a coordinated approach that blends scientific research, community engagement, and policy reform. Immediate action is necessary to safeguard aquatic biodiversity, ensure food security, and protect the livelihoods of thousands who depend on these vital ecosystems.

Recommendations for Madhesh Province (Reduced Rainfall Context)

Adopt Biofloc (BFT): Affordable, reduces water needs, improves feed use.

Combine with Low-Tech Strategies: Use aeration, lime, feeding adjustments during heat or dry spells as immediate risk mitigation steps.

Engage Digital Planning: Even without full digital twins, farm-level maps and condition tracking using mobile tools can help anticipate water and heat stress.

Acknowledgement

The author would like to express his sincere gratitude to Research Management Cell (RMC), J.S. Murarka Multiple Campus, Lahan for providing this opportunity to publish my article to this journal. I would like to express my sincere gratitude to Mr. Dilip Kumar Chaudhary, the Editor-in-Chief for his valuable guidance, constructive feedback and continuous support throughout the review and publication process. I am also deeply thankful to the reviewers as well as all the editors who have contributed in the publication of this volume. Lastly, I extend my heartfelt appreciation to Dr. Ram Prabodh Yadav and Mr. Narendra Kumar Chaudhary for their valuable time and information, which were essential for the successful completion of this review article successfully.

References

Abeysinghe, K. C., Weerarathne, A. G. P. T., Colonne, D. K. C., & Bellanthudawa, B. K. A. (2025). Sustainable development goals (SDGs), climate change, and the development of aquaculture and fisheries industries. *Environmental Reviews*, *33*, 1–24. https://doi.org/10.1139/er-2024-0136

Adhikari, A., Limbu, J. H., & Pathak, S. (2021). Fish diversity and water quality parameters of Mechi River, Jhapa, province no. 1, Nepal. *Borneo Journal of Resources Science and Technology*, *10*(2), 24–34.

Alam, E., & Mallick, B. (2022). Climate change perceptions, impacts and adaptation practices of fishers in southeast Bangladesh coast. *International Journal of Climate Change Strategies and Management*, *14*(2), 191–211.

Allison, E. H., Perry, A. L., Badjeck, M., Neil Adger, W., Brown, K., Conway, D., Halls, A. S., Pilling, G. M., Reynolds, J. D., Andrew, N. L., & Dulvy, N. K. (2009). Vulnerability of national economies to the impacts of climate change on fisheries. *Fish and Fisheries*, *10*(2), 173–196. https://doi.org/10.1111/j.1467-2979.2008.00310.x

Amin, A., Hasan, Z., Ferdous, S. R., & Alam, M. S. (2024). Perceived impacts of climate change on coastal aquaculture in the cyclone prone southwest region of Bangladesh: 10.32526/ennrj/22/20240117. *Environment and Natural Resources Journal*, *22*(6), 535–546.

Barange, M., Bahri, T., Beveridge, M. C., Cochrane, K. L., Funge-Smith, S., & Poulain, F. (2018). Impacts of climate change on fisheries and aquaculture. *United Nations' Food and Agriculture Organization*, *12*(4), 628–635.

Basnet, K., Shrestha, A., Joshi, P. C., & Pokharel, N. (2020). Analysis of climate change trend in the lower Kaski district of Nepal. *Himalayan Journal of Applied Science and Engineering*, *1*(1), 11–22. https://doi.org/10.3126/hijase.v1i1.3353

Bista, R. B., Dahal, K. R., & Gyawali, R. P. (2018). A review of climate change and its effects in the western mountainous water basin of Nepal. *Hydro Nepal: Journal of Water, Energy and Environment*, *23*, 79–85.

Cushway, K. C., Geist, J., & Schwalb, A. N. (2025). Surviving global change: A review of the impacts of drought and dewatering on freshwater mussels. *Biological Reviews*, *100*(1), 275–307. https://doi.org/10.1111/brv.13142

Farquhar, S. D., Khanal, N., Shrestha, M., Farthing, M., & Bhujel, R. C. (2018). Socio-economic impacts of the Women in Aquaculture (WiA) project in Nepal. *Kasetsart Journal of Social Sciences*. https://doi.org/10.1016/j.kjss.2017.12.014

Galappaththi, E. K., Susarla, V. B., Loutet, S. J. T., Ichien, S. T., Hyman, A. A., & Ford, J. D. (2022). Climate change adaptation in fisheries. *Fish and Fisheries*, *23*(1), 4–21. https://doi.org/10.1111/faf.12595

Gautam, N. (2015). Challenges of freshwater fisheries in Nepal: A short overview. *International Journal of Applied Sciences and Biotechnology*, *3*(4), 579–583.

Gautam, S., & Sapkota, P. (2023). Status and Development Trend of Aquaculture and Fisheries in Nepal. *Nepalese Journal of Aquaculture and Fisheries*, *10*, 1–13.

Giri, S. S. (Ed.). (2018). *Small-scale fisheries in South Asia*. SAARC Agriculture Centre.

Gurung, T. B. (2012). Integrated aquaculture within agriculture irrigation for food security and adaptation to climate change. *Hydro Nepal: Journal of Water, Energy and Environment*, 73–77.

Gurung, T. B., Pokharel, P. K., & Wright, I. (2011). *Climate Change: Livestock Sector Vulnerability and Adaptation in Nepal*. https://doi.org/10.13140/RG.2.1.1548.6887

Hansen, H. H., Bergman, E., Kopf, K., & Lindmark, M. (2025). Resistance of Australian fish communities to drought and flood: Implications for climate change and adaptations. *Ecography*, *2025*(1), e07442. https://doi.org/10.1111/ecog.07442

Huang, M., Ding, L., Wang, J., Ding, C., & Tao, J. (2021). The impacts of climate change on fish growth: A summary of conducted studies and current knowledge. *Ecological Indicators*, *121*, 106976.

Karki, M., Mool, P., & Shrestha, A. (1970). Climate Change and its Increasing Impacts in Nepal. *The Initiation*, *3*, 30–37. https://doi.org/10.3126/init.v3i0.2425

Karki, R., Hasson, S. U., Schickhoff, U., Scholten, T., & Böhner, J. (2017). Rising Precipitation Extremes across Nepal. *Climate*, *5*(1), 4. https://doi.org/10.3390/cli5010004

Kayes, A. N. M., Tabassum, T., & Khan, M. A. M. R. (2025). Assessment of Climate-Induced Vulnerabilities and Poverty Alleviation Potential of Dry Fish Industry: An Ecological and Socio-economic Study in Cox's Bazar District, Bangladesh. *International Journal of Disaster Risk Management*, *7*(1), 461–484.

Kwasek, K., Thorne-Lyman, A. L., & Phillips, M. (2020). Can human nutrition be improved through better fish feeding practices? A review paper. *Critical Reviews in Food Science and Nutrition*, *60*(22), 3822–3835. https://doi.org/10.1080/10408398.2019.1708698

Manandhar, S., Vogt, D. S., Perret, S. R., & Kazama, F. (2011). Adapting cropping systems to climate change in Nepal: A cross-regional study of farmers' perception and practices. *Regional Environmental Change*, *11*(2), 335–348. https://doi.org/10.1007/s10113-010-0137-1

Mandal, S. C., Kadir, S., & Hossain, A. (2020). Effects of Salinity on the Growth, Survival and Proximate Composition of Pangas, Pangasius Hypophthalmus. *Bangladesh Journal of Zoology*, *48*(1), 141–149. https://doi.org/10.3329/bjz.v48i1.47883

Mendivil, C. O. (2021). Dietary Fish, Fish Nutrients, and Immune Function: A Review. *Frontiers in Nutrition*, *7*. https://doi.org/10.3389/fnut.2020.617652

Mudbhari, D., Kansal, M. L., & Kalura, P. (2022). Impact of climate change on water availability in Marsyangdi river basin, Nepal. *Quarterly Journal of the Royal Meteorological Society*, *148*(744), 1407–1423. https://doi.org/10.1002/qj.4267

Ninawe, A. S., Indulkar, S. T., & Amin, A. (2018). Impact of Climate Change on Fisheries. In *Biotechnology for Sustainable Agriculture* (pp. 257–280). Elsevier. https://doi.org/10.1016/B978-0-12-812160-3.00009-X

Patrick, A. E. S. (2016). *Influence of rainfall and water level on inland fisheries production: A review*.

Paul, P., Rahi, M. F., Saiquit, I. H., Sarower, M. G., Rouf, M. A., Parvez, M. S., Aktar, S., Khanom, M., Khan, A. N., & Rahman, M. M. (2024). Climate change effects on the small-scale fisheries in the Northern part of Bangladesh and associated adaptation measures. *Khulna University Studies*, 33–46.

Sharma, S., & Neupane, S. (2025). Exploring Farmers' Resilience: Climate Change and Sustainable Adaptation Strategies in the Agricultural Sector of Nepal. *Turkish Journal of Agriculture-Food Science and Technology*, *13*(2), 504–513.

Starck, S., & Wolter, C. (2024). Resilience Approach for Assessing Fish Recovery after Compound Climate Change Effects on Algal Blooms. *Sustainability*, *16*(14), 5932.

Teutschbein, C., & Seibert, J. (2010). Regional Climate Models for Hydrological Impact Studies at the Catchment Scale: A Review of Recent Modeling Strategies. *Geography Compass*, *4*(7), 834–860. https://doi.org/10.1111/j.1749-8198.2010.00357.x

The Department of Hydrology and Meteorology of Nepal (2023).

Timalsina, R., Maharjan, S., Kandel, S., Awasthi, M. P., Bishwakarma, K., Dhami, U., Thapa, L. B., Singh, V. B., & Pant, R. R. (2025). A Ramsar wetlands in Nepal: Status, uses, challenges, and conservation strategies–a review. *Nepalese Journal of Zoology*, *9*(1), 55–66.

Tiwari, K. R., Rayamajhi, S., Pokharel, R. K., & Balla, M. K. (2014). Determinants of the climate change adaptation in rural farming in Nepal Himalaya. *International Journal of Multidisciplinary and Current Research*, *2*(1), 2321–3124.

Upreti, B. R. (2013). Environmental security: Concepts, issues and problems. *Human Security in Nepal: Concepts, Issues and Challenges*, 211.

Wagle, S. K. (2016). Climate Change Impact on Inland Fisheries and Aquaculture in Nepal. *Climate Change Impact on Coastal Fisheries and Aquaculture in South Asia*, 96.

Wagle, S. K., Gurung, T. B., Pradhan, N., & Raymajhi, A. (2011). Climate change implication for fisheries and aquaculture in Nepal. *Proceedings of Consultative Workshop on Climate Change: Livestock Sector Vulnerability and Adaptation in Nepal*, 94–111.

Welcomme, R. L. (with Food and Agriculture Organization of the United Nations). (2011). *Review of the state of the world fishery resources: Inland fisheries*. Food and Agriculture Organization of the United Nations.

Xu, L., Feiner, Z. S., Frater, P., Hansen, G. J., Ladwig, R., Paukert, C. P., Verhoeven, M., Wszola, L., & Jensen, O. P. (2024). Asymmetric impacts of climate change on thermal habitat suitability for inland lake fishes. *Nature Communications*, *15*(1), 10273.

Yadav, M., Ranjan, R., & Bahadur Shah, T. (2023). Fish farming practices and disease occurrence in the fish farms of Dhanusha district, Nepal. *Malaysian Animal Husbandry Journal*, *3*(1), 15–27. https://doi.org/10.26480/mahj.01.2023.15.27

Zaman, F., Ara, R., & Karim, F. (2025). Vulnerability and climate change. *Bangladesh Journal of Bioethics*, *16*(2), 21–25. https://doi.org/10.62865/bjbio.v16i2.164

Research Journal on Multi-disciplinary Issues
(A Peer Reviewed Open Access Journal)
ISSN: 2705-4594 [Print] E-ISSN 2705-4608 [Online]
Vol. 6 No.1 February 2026, pp.71-81
eJournal site: www.nepjol.info
www.jsmmc.edu.np

Physicochemical Quality Assessment of Commercial Sunflower Oil Brands Sold in the Lahan Market, Nepal

[1]Manish Kumar Yadav, [1]Pustika Kumari Chaudhary, [1]Pinki Kumari Chaudhary &
Corresponding author: [2]Ram Prabodh Yadav

[1]Students of BSc 4th Year
[2]Faculty Member
Department of Chemistry
JSMM Campus Lahan,
Siraha (Nepal)
Email:
ramprabodh30@gmail.com

Article History:
Submitted: Nov. 15, 2025
Reviewed: January 29, 2026
Accepted: February 10, 2026
Doi: https://doi.org/10.3126/rjmi.v6i1.91307

URL.: www.jsmmc.edu.np
URL: www.nepjol.info

Abstract

One of the most popular edible oils globally is the sunflower oil which has gained popularity especially in Nepal due to its lightness and taste and the ability to attain high smoke point without burning. The big downside, it contains a lot of polyunsaturated fats and this implies that it spoils quickly when we store or ship it. There was tested the quality of the three brands of sunflower oils namely Nilkamal, Pakwan, and Bigul that were sold at Lahan market in the Siraha District, Nepal by titration method and data analysis were carried out in triplicate manor where it is statistically treated using one-way ANOVA ($p < 0.05$).The acid value, saponification value, iodine value, and peroxide value were measured and the results compared among the brands. The acid values were between 0.18 and 0.32 mg/g KOH, saponification values were between 188.3 and 194.2 mg/g KOH, iodine values were 132.4 to 137.5 g/kg of I_2, and peroxide values were 2.3 to 3.5 meq O_2/kg. All the figures we obtained were within the scope of Codex Alimentarius and FAO/WHO, thus the oils are good quality and are not excessively oxidized. We also found that there were slight variations in the brands which demonstrates that good packaging, storage and checks are necessary to ensure that the oil remains fresh and safe to use by those who consume it.

***Keywords**:* sunflower oil, properties, value, Saponification, Iodine

Introduction

There several types of vegetable oil found in market in worldwide mong which sunflower oil occupied third position the four most common vegetable oils, that is, palm, soybean, and rapeseed oils according to Food and Agriculture Organization (FAO, 2022& Pilorgé E., 2020) reports (FAO, 2022; Pilorgé E., 2020). It is the seed of *Helianthus annuus* carrying with light colour, good flavour and high smoke point. This property makes it good qualities in both frying and saute and as salad dressing

components. The use of sunflower oil has been increasing significantly in South Asia in recent years, with Nepal being one of the countries where urban families are shifting towards refined vegetable oils, which are viewed as a healthier alternative to such traditional fats as ghee and mustard oil (Codex Alimentarius, 2019). This swelling demand has created a diverse market of imported and locally packaged brands of sunflower oil thus highlighting the need to have systematic quality evaluation.

Generally, fatty acid composition determines the nutritional quality of sunflower oil. The usual composition of conventional sunflower oil includes 60-75% linoleic acid (omega-6 polyunsaturated fatty acid), 15- 25% oleic acid (monounsaturated fatty acid), and less than 12% saturated fatty acids, and the high-oleic cultivars can include up to 80% oleic acid (Smith et al., 2018; Codex Alimentarius, 2019). The sunflower oil which consists high amount oxygen contents supposed to be superior than other in the manner of oxidative stability and prolonged shelf life and hence very suitable for high cooking temperature range.it is also the significant source of some bioactive compounds like tocopherols (vitamin E), phytosterols and carotenoids besides fatty acid which play crucial work as as antioxidants and suppress oxidative stress (Vereshchagin et al., 2019). It has been found that regular intake of sunflower oil is linked to better lipid profiles, low-density lipoprotein cholesterol reduction, and reduced cardiovascular diseases (Gupta et al., 2020).

Although sunflower oil has a positive nutritional picture, it can be destroyed during storage and processing. The fact that it is rich in polyunsaturated fatty acids inhibits it against oxidative rancidity formation, which results in the generation of hydroperoxides and secondary products (aldehydes and ketones) that produce undesirable odours and flavours (Shahidi and Zhong, 2010). The moisture causes hydrolytic rancidity (released by lipase enzymes) that leads to the release of free fatty acids, thus raising the acid value (AOAC, 2016). In addition, the substitution of sunflower oil with less expensive oils, including palm olein oil, rice bran oil, or even recycled frying oil, has been observed in a number of studies, which is not only dangerous to the health of consumers, but also economic fraud (Tahir et al., 2021). These issues highlight the significance of analyzing the most significant physicochemical quality indicators, such as acid value (AV), saponification value (SV), iodine value (IV), and peroxide value (PV) that, on the one hand, reveals the information about the purity of the oil, its freshness, and stability of storage.

These parameters have been mentioned as important by several researchers in controlling the quality. According to Dhakal et al. (2024), the peroxide value is an indicator of early oxidation and the content of conjugated diene is an effective indicator of primary lipid deterioration. In similar research, Ramezani (2004) established that the storage temperature and type of package significantly affect the AV and PV of sunflower oil with the oils in transparent plastic bottle having faster quality deterioration than those in opaque package. In their study, Smith et al. (2018) have made comparisons between high-oleic and high-linoleic oils of sunflower and concluded that high-oleic types have better thermal stability and can be used in repeated

frying. Nevertheless, the information on the quality nature of the sold sunflower oil in the semi-urban Nepalese markets is limited, as the storage and handling system can influence the quality of the physicochemical profile of oils.

The proposed research fills this gap by examining and comparing the acid value, the saponification value, the iodine value, and the peroxide value of three commercially available brands of sunflower oil in the Nepalese Lahan market, Siraha District, Nepal. The main aim here is to compare the freshness, purity and oxidative stability of these oils against the internationally accepted standards and to provide useful information to the consumers, producers and even the regulators. The results will be useful in the informing of quality monitoring programmes, consumer awareness, and finally serve in the protection of the population and improved food safety.

Materials and Methods

This study was carried out to evaluate the physicochemical quality indicators of sunflower oil available in the Lahan market, Siraha District, Nepal. The methodology was designed following internationally recognized analytical procedures recommended by AOAC International (2016) and Codex Alimentarius standards (Codex, 2019), with slight modifications to suit local laboratory conditions.

Sunflower oil quality was assessed by determining four key parameters acid value (AV), saponification value (SV), iodine value (IV), and peroxide value (PV) all of which are widely used indicators of oil freshness, purity, and oxidative stability (Ivashkiv et al., 2025). Each experiment was performed in triplicate to ensure reproducibility, and strict quality control measures were applied to minimize analytical error.

Study Area and Sample Collection

The study was conducted in Lahan, a rapidly urbanizing commercial center in Province No. 2, Nepal. Three sunflower oil brands were purposively selected based on their popularity and availability in major retail shops. Samples were collected using a stratified approach from three key localities to account for possible variability due to storage and distribution conditions. Brand A (Nilkamal) was obtained from Lahan Technical School area, Brand B (Pakwan) was purchased from a retailer at Gramin Chowk, and Brand C (Bigul) was collected from a shop near Radha Krishna Chowk. Oils were purchased in their original sealed retail packaging, verified for batch number and manufacturing date, and immediately transferred into clean, amber-colored glass bottles to minimize photo-oxidation. All bottles were tightly sealed, labeled with sample code, brand name, and date of collection, and stored at room temperature (25 ± 2 °C) in a dark cabinet until analysis, following the standard recommendations for edible oil sample handling (AOAC, 2016).

Chemicals and Reagents

Analytical grade chemicals were used throughout the study. Potassium hydroxide (KOH), ethanol, glacial acetic acid, sodium thiosulphate, potassium iodide (KI), and iodine monochloride (Wijs solution) were procured from Merck (Germany). Phenolphthalein and starch indicators were prepared fresh. Distilled–deionized water

was used for solution preparation to avoid contamination from ions that may catalyze oxidation (Choe & Min, 2006). All reagents were standardized before use, following AOAC procedures, to ensure accuracy of titration results (AOAC, 2016).

Instruments and Glassware

An analytical balance with ±0.001 g precision (Shimadzu, Japan) was used for weighing oil samples. Reflux apparatus, water bath (maintained at 100 °C), calibrated burettes, and pipettes were used for titrimetric procedures. Glassware was cleaned with chromic acid solution, rinsed with distilled water, and oven-dried prior to use to avoid trace contaminants that could interfere with analysis.

Determination of Acid Value

The acid value was determined using AOAC Official Method 940.28 (AOAC, 2016). Approximately 5.0 g of sunflower oil was weighed into a conical flask, and 50 mL of a neutralized ethanol–diethyl ether mixture (1:1 v/v) was added. Two to three drops of phenolphthalein were introduced, and the mixture was titrated against standardized 0.1 N alcoholic KOH solution until a faint pink color persisted for at least 30 seconds.

$$\mathrm{AV} = \frac{\text{ml of KOH consumed} \times \text{N. of KOH} \times \text{Eq. wt. of KOH}}{\text{wt. of oil sample}}$$

Where V = volume of KOH used (mL), N = normality of KOH, and W = weight of sample (g). Results were expressed in mg KOH required to neutralize the free fatty acids in 1 g of oil (Kardash & Tur'yan (2005)).

Determination of Saponification Value

The saponification value was measured following AOAC Official Method 920.160 (AOAC, 2016). Two grams of oil were refluxed with 25 mL of 0.5 N alcoholic KOH for 60 minutes. After cooling, the unreacted KOH was titrated with standardized 0.5 N oxalic acid using phenolphthalein as indicator. A blank was run in parallel.

$$\mathrm{SV} = \frac{56 \times (\mathrm{V_1} - \mathrm{V_2}) \times 1000}{2000 \times \mathrm{W}}$$

Where V_2 and V_1 are the volumes of oxalic acid used for blank and sample respectively. SV is reported as mg KOH required to saponify 1 g of oil, which reflects the average molecular weight of fatty acids (Turnbull et al. (2019).

Determination of Iodine Value

Iodine value was determined using the Wijs method (AOAC 993.20). Approximately 0.5 g of oil was dissolved in 15 mL of chloroform and treated with 25 mL of Wijs solution. The flask was kept in the dark for 30 minutes, after which 20 mL of 10% KI and 100 mL distilled water were added. Liberated iodine was titrated against standardized 0.1 N sodium thiosulphate until the yellow color nearly disappeared; starch solution was then added and titration continued to a colorless endpoint.

$$\mathrm{IV} = \frac{(\mathrm{V_1} - \mathrm{V_2}) \times \mathrm{N} \times 127 \times 100}{\mathrm{W} \times 1000}$$

Where V_2 = blank titre (mL), V_1 = sample titre (mL), N = normality of sodium thiosulphate, and W = sample weight (g). Results were expressed as grams of iodine

absorbed per 100 g of oil, representing the degree of unsaturation (Shimamoto, Aricetti, & Tubino, 2016).

Determination of Peroxide Value

Peroxide value was determined by the iodometric method (AOAC 965.33). Five grams of oil were dissolved in 30 mL of glacial acetic acid–chloroform mixture (3:2 v/v). Saturated KI solution (0.5 mL) was added, and the mixture was kept in the dark for 1 minute. Thirty milliliters of distilled water were then added, and liberated iodine was titrated against 0.01 N sodium thiosulphate using starch as indicator.

$$PV\left(\frac{meq}{kg}\right) = \frac{V \times N \times 1000}{W}$$

Where V is the volume of sodium thiosulfate used (in mL), N is the normality of thiosulfate solution (0.01 N), and W is the weight of the oil sample in grams (5 g in this case). The results were expressed in milliequivalents of active oxygen per kilogram of oil. A higher peroxide value indicates a greater degree of oxidation and hence, lower freshness or shelf life of the oil (Zhang et al., 2021).

Statistical Treatment of Data

All measurements were performed in triplicate, and results are presented as mean ± standard deviation (SD). Data were subjected to one-way analysis of variance (ANOVA) using R Software, and significance was determined at $p < 0.05$ (Gupta et al., 2020). Graphical representation of data (bar charts) was prepared in Microsoft Excel to visually compare the physicochemical parameters among brands.

Results

The physicochemical analysis of three commercially available sunflower oil brands from the Lahan market revealed significant variations in acid value (AV), saponification value (SV), iodine value (IV), and peroxide value (PV). All analyses were carried out in triplicate, and results are expressed as mean ± standard deviation (SD). The obtained values were compared with the Codex Alimentarius (2019) and FAO/WHO standards for named vegetable oils to evaluate compliance and quality status.

Acid Value

The acid value of the sunflower oil brands is presented in Table 1. Brand A exhibited the lowest acid value (0.18 ± 0.02 mg KOH/g), followed by Brand B (0.24 ± 0.03 mg KOH/g), while Brand C recorded the highest value (0.32 ± 0.02 mg KOH/g). According to Codex Alimentarius standards, the maximum permissible acid value for refined sunflower oil is 0.6 mg KOH/g. All three brands were therefore within acceptable limits, indicating good storage conditions and minimal hydrolytic rancidity. The relatively higher AV of Brand C suggests a slightly greater extent of free fatty acid formation, which may be attributed to longer storage duration or exposure to moisture during handling.

Table 1.

Acid Value of Sunflower Oil Brands

Brand	Acid Value (mg KOH/g)	Codex Limit (mg KOH/g)	Status
A	0.18 ± 0.02	≤ 0.60	Acceptable
B	0.24 ± 0.03	≤ 0.60	Acceptable
C	0.32 ± 0.02	≤ 0.60	Acceptable

These results are consistent with findings by Gupta et al. (2020), who reported acid values ranging between 0.12–0.45 mg KOH/g for commercially available sunflower oil stored under ambient conditions.

Saponification Value

The saponification values of the tested oils are summarized in Table 2. The SV ranged from 188.3 ± 1.5 mg KOH/g (Brand A) to 194.2 ± 2.1 mg KOH/g (Brand C). Codex Alimentarius specifies that sunflower oil should have an SV between 188–194 mg KOH/g, which reflects the average molecular weight of constituent fatty acids. All samples complied with the recommended range. Brand C exhibited the highest SV, suggesting the presence of relatively shorter-chain fatty acids compared to the other brands.

Table 2.

Saponification Value of Sunflower Oil Brands

Brand	Saponification Value (mg KOH/g)	Codex Range (mg KOH/g)	Status
A	188.3 ± 1.5	188–194	Acceptable
B	191.6 ± 1.7	188–194	Acceptable
C	194.2 ± 2.1	188–194	Acceptable

The observed SV values are in agreement with those reported by Vereshchagin et al. (2019), confirming that the analyzed oils are within the expected molecular weight distribution for sunflower oil.

Iodine Value

Iodine values are indicative of the degree of unsaturation of oils. The results are presented in Table 3. Brand A recorded an IV of 132.4 ± 1.8 g I_2/100 g, Brand B had 134.7 ± 2.1 g I_2/100 g, and Brand C had 137.5 ± 1.9 g I_2/100 g. According to FAO/WHO standards, the typical iodine value range for sunflower oil is 118–141 g I_2/100 g. All three brands were therefore within the recommended range, indicating that they contain the expected proportion of polyunsaturated fatty acids.

Brand C showed the highest degree of unsaturation, which may be nutritionally beneficial due to its higher PUFA content. However, oils with higher IV are more susceptible to oxidative rancidity, necessitating careful storage in airtight, light-resistant containers (Ivanova et al., 2022).

Table 3.
Iodine Value of Sunflower Oil Brands

Brand	Iodine Value (g I_2/100 g)	FAO/WHO Range (g I_2/100 g)	Status
A	132.4 ± 1.8	118–141	Acceptable
B	134.7 ± 2.1	118–141	Acceptable
C	137.5 ± 1.9	118–141	Acceptable

Peroxide Value

Peroxide value reflects the extent of primary oxidation in oils. The results are shown in Table 4. Brand A had a PV of 2.3 ± 0.3 meq O_2/kg, Brand B had 3.0 ± 0.2 meq O_2/kg, while Brand C recorded the highest PV of 3.5 ± 0.4 meq O_2/kg. Codex Alimentarius specifies a maximum PV of 10 meq O_2/kg for refined sunflower oil, indicating that all three brands were well within acceptable limits.

Table 4.
Peroxide Value of Sunflower Oil Brands

Brand	Peroxide Value (meq O_2/kg)	Codex Limit (meq O_2/kg)	Status
A	2.3 ± 0.3	≤ 10.0	Acceptable
B	3.0 ± 0.2	≤ 10.0	Acceptable
C	3.5 ± 0.4	≤ 10.0	Acceptable

These findings suggest that the oils were relatively fresh and had not undergone significant lipid peroxidation. However, the comparatively higher PV of Brand C could indicate that it was closer to the onset of secondary oxidation products such as aldehydes and ketones, which may affect flavor if stored for longer periods (Zhang et al., 2021).

The results presented in Figure 1 show that all three sunflower oil brands—Nilkamal, Pakwan, and Bigul—comply with Codex Alimentarius and FAO/WHO standards for refined sunflower oil, as all measured physicochemical parameters fall within permissible limits. The Acid Value (mg KOH/g oil) was lowest in Nilkamal (≈0.45), slightly higher in Pakwan (≈0.50), and highest in Bigul (≈0.55), yet all remained below the maximum allowable limit, indicating minimal hydrolytic rancidity. The Saponification Value (mg KOH/g oil) ranged from approximately 188 in Nilkamal to 191 in Pakwan and 194 in Bigul, suggesting normal triglyceride composition, while the Iodine Value (g I_2/100 g oil) increased modestly from about 133 in Nilkamal to 135 in Pakwan and 138 in Bigul, confirming a high level of polyunsaturated fatty acids beneficial for cardiovascular health (Dudi, Jillellamudi, Chanda, & Kanuri, 2021).

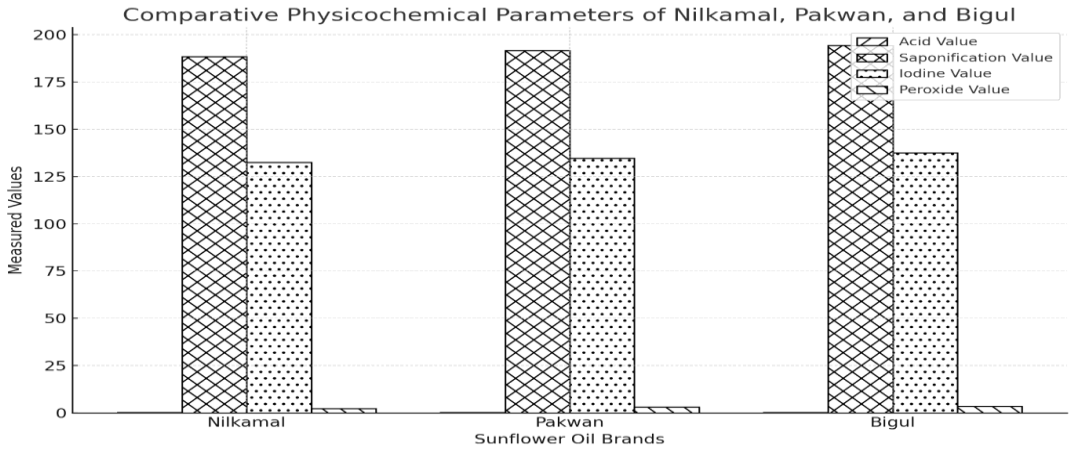


Figure 1: *Comparative Physicochemical Parameters of Sunflower Oil*

The Peroxide Value (meq O_2/kg oil) was lowest in Nilkamal (≈2.5), moderate in Pakwan (≈3.0), and highest in Bigul (≈3.5), remaining well below Codex limits and indicating minimal oxidative deterioration at the time of analysis.

The slight variations observed among the brands may be attributed to differences in raw material quality, refining and deodorization processes, packaging materials, storage duration, and exposure to light and oxygen during distribution. Bigul consistently exhibited slightly higher Acid, Saponification, Iodine, and Peroxide values, which may reflect minor differences in fatty acid composition or longer storage or handling conditions. Although these variations are small and within acceptable standards, regular monitoring of these parameters is essential to ensure consistent quality and to safeguard consumers against potential rancidity or adulteration of edible oils.

The differences observed among Nilkamal, Pakwan, and Bigul for acid value, saponification value, iodine value, and peroxide value were statistically analyzed using one-way ANOVA, and variations were found to be significant ($p < 0.05$) where indicated

Discussion

The physicochemical evaluation of the three sunflower oil brands demonstrated that all samples complied with Codex Alimentarius (2019) and FAO/WHO standards, indicating that the oils available in the Lahan market are of acceptable quality and safe for human consumption. Although all parameters were within permissible limits, measurable variations were observed among the brands, highlighting differences in quality characteristics that are relevant to product stability and consumer safety.

Acid value is a key indicator of hydrolytic rancidity and reflects the extent of free fatty acid formation in edible oils. The low acid values recorded for all samples suggest minimal triglyceride hydrolysis, confirming that the oils were relatively fresh and properly refined. However, the slightly higher acid value observed in one brand may be associated with longer storage duration, higher moisture content in the raw seeds, or limited exposure to air and light during handling and distribution. Similar trends have been reported by Gupta et al. (2020), who noted that prolonged storage and elevated temperatures accelerate free fatty acid formation. Maintaining a low acid value

is critical, as elevated levels can negatively affect oil flavor, reduce smoke point, and lower overall consumer acceptability.

The iodine values of all samples were within the expected range for sunflower oil, confirming a high degree of unsaturation and the presence of nutritionally beneficial polyunsaturated fatty acids. Such fatty acids are associated with improved lipid metabolism and reduced cardiovascular risk. However, higher unsaturation also increases susceptibility to oxidative degradation, which was reflected in the slightly higher peroxide value observed in the brand with the highest iodine value. This relationship underscores the importance of appropriate packaging and storage conditions to limit exposure to oxygen, light, and heat, thereby preserving oil quality and nutritional value (Shahidi & Zhong, 2010).

Saponification values for all brands fell within the recommended range for refined sunflower oil, indicating normal triglyceride composition and the absence of adulteration. This confirms the authenticity of the oils and supports their suitability for consumption. Variations in saponification values among brands were minimal and are likely attributable to natural differences in fatty acid composition arising from seed quality and processing efficiency, rather than any compromise in food quality.

Peroxide value is a direct measure of primary oxidation and an important indicator of oil freshness. The peroxide values observed in this study were well below the Codex limit of 10 meq O_2/kg, indicating that none of the oils had undergone significant oxidative deterioration at the time of analysis. Nonetheless, the slightly elevated peroxide value in one brand suggests early stages of oxidation, emphasizing the need for continuous quality monitoring. Once oxidation progresses, the formation of secondary oxidation products can adversely affect flavor and may pose health risks. Proper stock rotation by retailers and correct storage practices by consumers are therefore essential to maintain oil quality.

Overall, the findings of this study align with previous reports on sunflower oil quality, which indicate that low acid and peroxide values combined with appropriate iodine values are characteristic of fresh, well-refined oils (Gupta et al., 2020; Vereshchagin et al., 2019). From a consumer health perspective, the oils provide nutritional benefits associated with polyunsaturated fatty acids while maintaining acceptable stability. However, the observed brand-to-brand differences highlight the influence of raw material quality, refining efficiency, packaging type, and storage conditions on oil quality parameters. Regular quality surveillance by regulatory authorities, adherence to proper processing standards by producers, and increased consumer awareness regarding storage practices are recommended to ensure sustained safety and quality of edible sunflower oils.

Conclusion

This study evaluated the acid value, saponification value, iodine value, and peroxide value of three sunflower oil brands marketed in the Lahan area and found that all samples complied with international standards for refined sunflower oil. The results confirm that the oils were fresh, safe for consumption, and nutritionally appropriate at

the time of analysis, with low acid and peroxide values indicating minimal hydrolytic and oxidative rancidity, and acceptable saponification and iodine values reflecting normal fatty acid composition and authenticity. Overall, the findings demonstrate that sunflower oils available in this semi-urban market meet international quality expectations and represent a reliable source of dietary fat for consumers.

Despite the overall satisfactory quality, minor variations among brands highlight the importance of maintaining effective quality control across production, packaging, storage, and distribution. Strengthened regulatory oversight, routine market surveillance, and enforcement of labeling and storage standards are recommended to ensure consistent product quality. In parallel, consumer education on proper storage and shelf-life awareness can further reduce quality deterioration after purchase. Together, these measures can support public health protection, enhance consumer confidence, and promote sustainable quality assurance in edible oil markets.

Acknowledgments

We sincerely expresses gratitude to the Campus Chief and Assistant Campus Chief of J.S. Murarka Multiple Campus for their continuous support and encouragement. We also gratefully acknowledge the Research Management Cell (RMC) of J.S. Murarka Multiple Campus for providing financial support for the completion of this work. Finally, heartfelt appreciation goes to family and friends for their constant motivation and inspiration.

References

AOAC. (2016). *Official Methods of Analysis of AOAC International*, 20th Edition.

Choe, E., & Min, D. B. (2006). Mechanisms and factors for edible oil oxidation. *Comprehensive Reviews in Food Science and Food Safety*, 5(4), 169–186.

Codex Alimentarius. (2019). *Standard for Named Vegetable Oils* (CODEX-STAN 210-1999). FAO/WHO.

Dawodu, M. O., Olutona, G. O., & Obimakinde, S. O. (2015). Effect of temperature on the chemical characteristics of vegetable oils consumed in Ibadan, Nigeria. *Pakistan Journal of Nutrition*, 14(10), 698–707.

Dhakal, A., Paudel, D., Pokharel, P., & Koirala, S. (2024). Quality assessment of commercially refined sunflower oil found in the market of Pokhara, Nepal. *Nepal Journal of Biotechnology*, *12*(1), 81-88.

Dudi, L., Jillellamudi, N. V., Chanda, C., & Kanuri, G. (2021). Assessment of Quality Parameters in Edible Vegetable Oils. *International Journal of Pharmaceutical Investigation*, *11*(3).

FAO. (2022). *FAOSTAT: Crops and Livestock Products*. Food and Agriculture Organization of the United Nations.

Gupta, A., Sharma, R., & Kumar, P. (2020). Effect of storage conditions on oxidative stability of sunflower oil. *Journal of Food Science and Technology*, 57(5), 1748–1756.

Ivanova, M., Hanganu, A., Dumitriu, R., Tociu, M., Ivanov, G., Stavarache, C., ... & Chira, N. A. (2022). Saponification value of fats and oils as determined from 1H-NMR data: The Case of Dairy Fats. *Foods*, *11*(10), 1466.

Ivashkiv, Y. A., Nedilka, G. Y., & Savchak, A. R. (2025). Study of The Quality of Vegetable Oils Under Different Storage Conditions. *Scientific and Technical Bulletin of State Scientific Research Control Institute of Veterinary Medical Products and Fodder Additives and Institute of Animal Biology*, *26*(1), 69-73.

Kardash, E., & Tur'yan, Y. I. (2005). Acid value determination in vegetable oils by indirect titration in aqueous-alcohol media. *Croatica Chemica Acta*, *78*(1), 99-103.

Pilorgé, E. (2020). Sunflower in the global vegetable oil system: situation, specificities and perspectives. *OCL*, *27*, 34.

Ramezani, R. (2007). The effect of packaging materials and storage condition on the oxidative stability of refined sunflower oil. *Food Science and technology research*, *10*(3), 350-354.

Shahidi, F., & Zhong, Y. (2010). Lipid oxidation and improving the oxidative stability. *Chemical Society Reviews*, 39(11), 4067–4079.

Shimamoto, G. G., Aricetti, J. A., & Tubino, M. (2016). A simple, fast, and green titrimetric method for the determination of the iodine value of vegetable oils without wijs solution (ICl). *Food analytical methods*, *9*(9), 2479-2483.

Smith, J., Perez, V., & Cooper, M. (2018). High-oleic sunflower oil: Nutritional and oxidative advantages. *Food Chemistry*, 254, 381–388.

Tahir, H. E., Xiaobo, Z., & Mahunu, G. K. (2021). Detection of sunflower oil adulteration using rapid spectroscopic methods. *Journal of Food Composition and Analysis*, 98, 103837.

Turnbull, S., Bradshaw, L., & Yildiz, Y. (2019). Determination of Saponification Value in Carnuba Wax by USP/NF Residual Titration Method. *American Journal of Analytical Chemistry*, *10*(9), 423-427.

Vereshchagin, A. G., Trunova, T. I., & Vasilieva, T. V. (2019). Bioactive compounds in sunflower oil and their role in human health. *Oilseeds and Fats, Crops and Lipids*, 26(5), 31–40.

Zhang, N., Li, Y., Wen, S., Sun, Y., Chen, J., Gao, Y., & Yu, X. (2021). Analytical methods for determining the peroxide value of edible oils: A mini-review. *Food chemistry*, *358*, 129834.

Research Journal on Multi-disciplinary Issues
(A Peer Reviewed Open Access Journal)
ISSN: 2705-4594 [Print] E-ISSN 2705-4608 [Online]
Vol. 6 No.1 February 2026, pp.82-91
eJournal site: www.nepjol.info
www.jsmmc.edu.np

Teachers' Preparedness and Students' Learning: A Case of B.Ed. English Students at J.S. Murarka Multiple Campus, Lahan

[1]Ram Kumar Bhagat Yadav

[1]Faculty Member
Department of English
JSMM Campus Lahan,
Siraha (Nepal)
Email:
ramkumary400@gmail.com

Article History:
Submitted: Nov. 01, 2025
Reviewed: January 15, 2026
Accepted: February 10, 2026
Doi: https://doi.org/10.3126/rjmi.v6i1.91309

URL.: www.jsmmc.edu.np
URL: www.nepjol.info

Abstract

This mixed-methods study explores the relationship between teacher preparedness and the learning outcomes of B.Ed. English students at J.S. Murarka Multiple Campus, Lahan, Nepal. Specifically, it examines how four domains of teacher preparedness; subject knowledge, pedagogical skills, classroom management, and ICT readiness that relate to students' self-reported learning, engagement, and readiness to teach in school settings. The study draws on survey responses from 30 final-year B.Ed. English students and semi-structured interviews with six teacher-educators, integrating quantitative and qualitative perspectives. Quantitative analysis reveals that pedagogical skills and classroom management are the strongest predictors of students' perceived learning, collectively explaining 46% of the variance ($R^2 = .46$, $p < .001$). Subject knowledge and ICT readiness, while positively associated with student outcomes, contribute less substantially. The qualitative findings provide rich contextual insights, highlighting barriers such as limited practicum opportunities, inadequate mentoring, insufficient in-service professional development for teacher-educators, and restricted access to ICT infrastructure. These constraints hinder the translation of theoretical knowledge into practical classroom competence, affecting students' confidence and engagement. The study underscores the importance of practice-oriented, student-centered pedagogical training and structured practicum experiences in enhancing teacher education outcomes in Nepal. By linking teacher preparedness directly to student learning, the research offers actionable, context-sensitive recommendations for policymakers and teacher education administrators seeking to strengthen the quality and effectiveness of B.Ed. programs in Nepal.

Keywords: Teacher preparedness, students' learning, Nepal, J.S. Campus

Introduction

Teachers' preparedness is widely recognized as a central determinant of teaching quality and student learning (Paudel, 2020). In Nepal, teacher-education programs including four-year B.Ed. degrees aim to produce teachers who are both subject-knowledgeable and pedagogically competent; however, gaps persist between curriculum aims and classroom realities (Kadel, 2025). J.S. Murarka Multiple Campus in Lahan offers a B.Ed. program that serves many prospective English teachers from the Eastern Terai region, making it an important site to understand how teacher training translates into students' learning and professional readiness. Contextual information about the campus and its B.Ed. program is available from the campus profile.

This paper asks: (1) What is the level of perceived teacher-educator preparedness across subject knowledge, pedagogy, classroom management, and ICT readiness among B.Ed. English students at J.S. Murarka? (2) How does teacher preparedness relate to students' learning outcomes and perceived readiness for classroom teaching? (3) What institutional and contextual barriers influence teachers' preparedness in this setting?

Literature review

Teacher preparedness in Nepal is multifaceted. Narrative inquiries have documented under-resourced rural contexts where English teachers face limited professional development and resource constraints, which negatively affect readiness to teach. Research on ICT integration and online-teaching preparedness in Nepali English education highlights low access to internet and limited teacher training in ICT pedagogy — key issues made evident during recent shifts toward online and blended modes. Inquiry-based and active pedagogies have been recommended for Nepalese classrooms, but teacher preparedness for such methods varies considerably. National and campus-level policies aim to strengthen teacher education, yet implementation gaps remain (Department of Education reports and campus program descriptions). These findings suggest a need for institution-level empirical studies that tie teacher-educator readiness directly to B.Ed. students' learning and professional confidence — precisely the niche this study addresses.

This study adopts a simple conceptual model where **Teacher Preparedness** (four domains: Subject Knowledge, Pedagogical Skill, Classroom Management, ICT Readiness) influences **Student Learning Outcomes** (self-reported learning gains, class engagement, practicum confidence). Institutional and contextual factors (e.g., practicum quality, access to resources, in-service training availability) act as moderators/mediators.

Methodology

A concurrent mixed-methods design: cross-sectional survey (quantitative) of B.Ed. English students plus semi-structured interviews (qualitative) with teacher-educators and campus practicum supervisors. J.S. Murarka Multiple Campus, Lahan, Siraha District (campus profile). 30 Students: from the final-year B.Ed. English

students (convenience sampling; aim for representation across gender and urban/rural origin) and 6 Teacher-educators purposively sampled teacher-educators with experience in the B.Ed. program (permanent and contract faculty). A structured questionnaire with four sections have been used:

1. Demographics (age, gender, prior schooling, practicum schools).
2. Perceived Teacher Preparedness Scale (PTPS): 20 items, 5-point Likert (1 = Strongly disagree, 5 = Strongly agree), covering subject knowledge (5 items), pedagogy (6 items), classroom management (4 items), ICT readiness (5 items).
3. Student Learning Outcomes Scale (SLOS): 12 items measuring perceived learning gains, engagement, and practicum confidence.
4. Open comments.

The PTPS and SLOS were pilot-tested with 15 students; Cronbach's α (pilot) for PTPS = .87; SLOS = .84 (replace with your computed reliability estimates). Similarly, semi-structured questions exploring teacher-educators' views on: curriculum alignment, practicum strength, training opportunities, ICT challenges, and recommended reforms.

Informed consent was obtained from all participants; participation was voluntary and anonymous. Surveys administered in-class during a scheduled session; interviews conducted in person (or online where necessary) and audio-recorded with permission. For the analysis of the data, quantitative: Descriptive statistics, reliability analysis, Pearson correlations, and multiple regression (predicting SLOS from PTPS domains) and qualitative: Thematic analysis following Braun & Clarke (2006) steps; triangulation with survey findings have been used along with the table.

Results

This section presents the quantitative and qualitative findings of the study on teachers' preparedness and students' learning among B.Ed. English students at J.S. Murarka Multiple Campus, Lahan. The results are organized into five subsections: sample profile, reliability and descriptive statistics, correlation analysis, regression analysis, and qualitative themes derived from teacher-educator interviews.

Profile of the respondents

A total of 30 B.Ed. English students participated in the study. The respondents represented final-year students who had completed or were completing their teaching practicum. The mean age of the participants was 23.4 years with a standard deviation of 1.8, indicating a relatively homogeneous age group typical of undergraduate teacher-education programs in Nepal. In terms of gender distribution, 17respondents (58.3%) were female and 13 respondents (41.7%) were male, reflecting the increasing participation of female students in teacher education. Regarding educational background, 16 students (56.7%) came from rural areas, while 14 students (43.3%) reported an urban background, suggesting that the campus serves a mixed catchment population from both rural and semi-urban contexts of Siraha and neighboring districts. With respect to teaching practice, a large majority of respondents (30 students, 100%)

completed their practicum in public schools. This indicates that most participants were exposed to resource-constrained classroom environments during their practicum.

Reliability and descriptive statistics

To examine the internal consistency of the measurement tools, Cronbach's alpha coefficients were calculated for each domain of the Perceived Teacher Preparedness Scale (PTPS) and the Students' Learning Outcome Scale (SLOS). The reliability values ranged from acceptable to high, confirming that the instruments were suitable for further statistical analysis. Table 1 presents the mean scores, standard deviations, and reliability coefficients for each domain.

Table 1

Descriptive statistics and reliability coefficients

Domain	Items	Mean (M)	SD	Cronbach's α
Subject knowledge	5	3.62	0.64	.81
Pedagogy	6	3.41	0.71	.86
Classroom management	4	3.30	0.77	.78
ICT readiness	5	2.78	0.88	.72
Students' learning outcomes (overall)	12	3.45	0.69	.84

The results show that subject knowledge received the highest mean score (M = 3.62), indicating that students generally perceived their teachers as academically competent in English content. Pedagogical preparedness (M = 3.41) and classroom management (M = 3.30) were rated moderately, suggesting room for improvement in instructional strategies and classroom handling techniques. In contrast, ICT readiness recorded the lowest mean score (M = 2.78), reflecting students' concerns about limited use of digital tools and technology-integrated teaching practices. The overall mean score for students' learning outcomes (M = 3.45) indicates a moderate level of perceived learning and professional confidence.

Relationship between teacher preparedness and students' learning

Pearson correlation analysis was conducted to examine the relationship between the domains of teacher preparedness and students' learning outcomes. The analysis revealed statistically significant and positive correlations between students' learning outcomes and all four domains of teacher preparedness. The strongest relationship was found between pedagogical preparedness and students' learning ($r = .61$, $p < .001$), followed by classroom management ($r = .58$, $p < .001$). Subject knowledge also showed a moderate positive correlation with students' learning ($r = .47$, $p < .001$). Although comparatively weaker, ICT readiness still demonstrated a significant positive relationship with students' learning outcomes ($r = .39$, $p < .01$). These results suggest that as students perceive higher levels of teacher preparedness, particularly in pedagogy and classroom management; their learning, engagement, and practicum confidence also tend to increase.

Predictors of students' learning outcomes

To determine the extent to which different aspects of teacher preparedness predict students' learning outcomes, a multiple regression analysis was performed using the four PTPS domains as predictor variables and SLOS as the dependent variable. The regression model was found to be statistically significant, explaining 46% of the variance in students' learning outcomes ($R^2 = .46$, $F(4,115) = 24.54$, $p < .001$). This indicates that nearly half of the variation in students' perceived learning can be attributed to differences in teacher preparedness. Among the predictors, pedagogical preparedness emerged as the strongest and most significant predictor ($\beta = .34$, $p < .001$), followed by classroom management ($\beta = .29$, $p < .001$). These findings highlight the central role of teaching strategies, lesson delivery, and classroom control in shaping students' learning experiences. Although subject knowledge ($\beta = .15$, $p = .06$) and ICT readiness ($\beta = .11$, $p = .09$) did not reach conventional levels of statistical significance, their positive beta values suggest that they still contribute meaningfully to students' learning when combined with other factors.

Overall, the regression results indicate that how teachers teach and manage classrooms matters more for students' learning than what they know alone, particularly in the context of teacher education.

Qualitative findings from teacher-educator interviews

To complement the quantitative results, semi-structured interviews were conducted with teacher-educators. The thematic analysis yielded three major cross-cutting themes that help explain the quantitative patterns.

1. Practicum quality and supervision

Teacher-educators consistently emphasized that practicum placements were insufficiently structured. Limited coordination with schools and inadequate mentoring time constrained students' opportunities to apply theoretical knowledge in real classrooms. As a result, students often struggled to translate pedagogical concepts into practice. One teacher-educator noted:

"Our students learn theory, but during practicum they face real classrooms with large numbers and no teaching aids. We need stronger partnerships with schools."

2. Gaps in professional development

Another recurring theme was the lack of sustained professional development opportunities for teacher-educators. Participants reported limited access to workshops and training on modern pedagogical approaches and ICT integration. This directly affected their confidence and capacity to model innovative teaching practices for students.

3. Resource and infrastructure constraints

Participants also highlighted **resource limitations**, including poor internet connectivity, scarcity of teaching materials, and large class sizes during practicum. These constraints were identified as major barriers to effective ICT integration and interactive teaching practices, reinforcing students' low ratings of ICT readiness.

Taken together, the findings reveal that while teacher-educators at J.S. Murarka Multiple Campus are perceived as reasonably strong in subject knowledge, pedagogical preparedness and classroom management are the most influential factors in shaping students' learning outcomes. At the same time, limited ICT readiness, weak practicum supervision, and resource constraints remain key challenges that need institutional attention

Discussion

This study examined the relationship between teachers' preparedness and students' learning among B.Ed. English students at J.S. Murarka Multiple Campus, Lahan. The findings clearly demonstrate that teacher preparedness; particularly in pedagogy and classroom management that plays a decisive role in shaping students' learning experiences and professional confidence. These results resonate strongly with existing Nepalese research on teacher education and contribute campus-level empirical evidence to an area that remains underexplored.

Teacher preparedness and students' learning in the Nepalese context

The quantitative findings revealed that pedagogical preparedness and classroom management were the strongest predictors of students' learning outcomes. This aligns closely with Nepalese studies that argue that effective teaching in English is less about content mastery alone and more about how teachers mediate content through appropriate methods, interaction, and classroom organization (Paudel, 2020; Mandal, 2024). In teacher education programs across Nepal, including B.Ed. programs affiliated with Tribhuvan University, pedagogical competence is expected to bridge theory and practice. However, earlier studies have repeatedly pointed out that many teacher-educators rely heavily on lecture-based instruction, limiting opportunities for modeling student-centered approaches (Kadel, 2025).

The present findings reinforce this argument by showing that when students perceive their teachers as pedagogically prepared—capable of demonstrating communicative teaching, lesson structuring, and learner engagement—their own learning and practicum confidence increase significantly. This suggests that teacher-educators function not only as knowledge transmitters but also as role models whose classroom practices directly influence future teachers' professional identities.

Subject knowledge: Necessary but not sufficient

Although subject knowledge received the highest mean score among the preparedness domains, it emerged as a weaker predictor of students' learning outcomes in the regression analysis. This finding echoes a growing consensus in Nepalese teacher-education literature that content knowledge, while essential, does not automatically translate into effective teaching or meaningful learning (Bista, 2019; Paudel, 2020). Many B.Ed. English students in Nepal possess reasonable grammatical and literary knowledge but struggle to design interactive lessons or manage real classrooms during practicum.

The marginal predictive power of subject knowledge in this study suggests that teacher education programs should move beyond content-heavy courses and place greater emphasis on pedagogical application. This is particularly important in contexts like Lahan, where graduates are likely to teach in public schools characterized by large class sizes, mixed-ability learners, and limited resources. In such environments, pedagogical adaptability and classroom management skills become more critical than advanced theoretical knowledge.

ICT readiness and structural limitations

One of the most striking findings of the study is the comparatively low mean score for ICT readiness and its weaker predictive role in students' learning. This result is consistent with multiple Nepalese studies conducted after the COVID-19 pandemic, which highlight persistent digital divides in higher education and teacher training institutions (Kadel, 2025; Bohara, 2025). Despite national policy discourses emphasizing ICT integration in education, actual implementation remains uneven, particularly outside major urban centers.

Qualitative findings further explain this pattern by pointing to limited internet access, lack of digital infrastructure, and insufficient training opportunities for teacher-educators. These constraints reduce the likelihood that ICT will be meaningfully embedded in teaching practices. Consequently, students receive limited exposure to technology-enhanced pedagogy, which weakens their preparedness for modern classrooms. This finding underscores the gap between policy aspirations and institutional realities in Nepalese teacher education.

Practicum experience as a missing link

The qualitative data strongly emphasize weaknesses in practicum quality and supervision, a concern repeatedly raised in Nepalese educational research. Studies on teaching practice in Nepal have noted that practicum often becomes a procedural requirement rather than a deeply mentored professional experience (Mandal, 2024; Paudel, 2020). The present study supports this critique by showing that insufficient mentoring and weak school–campus coordination hinder students' ability to apply pedagogical knowledge in real classrooms. The strong association between classroom management preparedness and students' learning outcomes further highlights the importance of practicum. Classroom management is rarely mastered through theory alone; it is developed through guided practice, reflection, and feedback. When practicum supervision is limited, students are left to navigate complex classroom realities independently, which may undermine their confidence and learning.

Professional development of teacher-educators

Another important insight from this study is the role of teacher-educators' own professional development in shaping students' learning. Interview participants pointed to limited access to sustained training on modern pedagogies and ICT integration. This finding mirrors national-level concerns that teacher-educators in Nepal often receive fewer professional development opportunities compared to school teachers (Bista, 2019). As a result, innovation in teaching practices remains slow, and traditional

methods continue to dominate teacher education classrooms. Given that pedagogical preparedness emerged as the strongest predictor of student learning, investing in teacher-educators' continuous professional development appears crucial. Without updating their pedagogical and technological skills, teacher-educators may unintentionally reproduce outdated practices, thereby limiting the transformative potential of teacher education programs.

Overall, the findings of this study reinforce a key message from Nepalese literature: improving teacher education requires a shift from content-dominated instruction toward practice-oriented, pedagogically rich learning environments. The results suggest that even within existing structural constraints, strengthening pedagogy, classroom management training, and practicum supervision can substantially enhance students' learning outcomes.

At the campus level, these findings highlight the need for structured mentoring systems, micro-teaching opportunities, and collaborative partnerships with practicum schools. At the policy level, the study supports calls for targeted investment in ICT infrastructure and continuous professional development for teacher-educators, particularly in campuses outside metropolitan areas.

By situating the findings within Nepalese literature, this study confirms that the challenges and strengths observed at J.S. Murarka Multiple Campus are not isolated but reflect broader patterns in Nepal's teacher education system. At the same time, it provides empirical evidence that pedagogical preparedness and classroom management are powerful levers for improving students' learning—levers that institutions can act upon even within limited-resource settings.

Conclusion

This study explored the relationship between teacher preparedness and students' learning among B.Ed. English students at J.S. Murarka Multiple Campus, Lahan. The findings demonstrate that teacher preparedness, particularly in pedagogical competence and classroom management, strongly predicts students' learning outcomes and practicum confidence. While subject knowledge remains important, it alone is insufficient to ensure meaningful learning. ICT readiness and technological integration, although positively associated with student learning, remain limited by infrastructural and institutional constraints. Qualitative insights reinforce the critical role of structured practicum experiences, sustained professional development, and resource availability in shaping both teacher-educators' preparedness and students' learning. Overall, the study highlights that the quality of teaching practices, mentoring, and active engagement in real classrooms significantly influences students' professional readiness to teach English in Nepalese secondary schools.

Implications

The findings have **practical, policy, and research implications** for teacher education programs in Nepal:

Pedagogical Training: Teacher education programs should prioritize student-centered teaching strategies, classroom management, and lesson-planning workshops to enhance pedagogical preparedness. Micro-teaching sessions and reflective teaching practices can serve as effective interventions.

Practicum Supervision: Structured mentoring and school-campus collaborations are critical. Establishing formal partnerships with practicum schools can ensure guided observation, feedback, and active skill application for B.Ed. students.

ICT Integration: Investment in digital infrastructure, low-cost teaching aids, and targeted ICT training for teacher-educators can strengthen the incorporation of technology in instruction, thereby enhancing students' learning and readiness for modern classrooms.

Professional Development of Teacher-Educators: Sustained in-service training, workshops, and exposure to contemporary pedagogical research are essential for faculty to model effective teaching and maintain alignment with national education policies.

Policy and Institutional Reforms: Campus administrations and policymakers should prioritize resource allocation, continuous assessment of practicum effectiveness, and incentives for teacher-educators to engage in professional growth, ensuring that B.Ed. graduates are well-prepared to meet the challenges of Nepalese classrooms.

By addressing these areas, teacher education institutions can significantly enhance the professional competence of future English teachers, bridging the gap between theory and practice and fostering higher-quality learning outcomes.

References

Bohara, B. B. (2025). *Online Teaching Preparedness Among Nepali EFL Educators: Determinants unveiled*. EduTrend / RCS Development. (rcsdevelopment.org)

Department of Education, Government of Nepal. (2010). *Child Friendly School Initiatives: Report* (Chapter 1). (DOE report). (doe.gov.np)

J.S. Murarka Multiple Campus Lahan. (n.d.). *Campus profile — B.Ed. program*. Retrieved from campus official website. (jsmmc.edu.np)

Kadel, P. B. (2025). *Use of ICT Integrated Pedagogy in English Language Teaching* (Nepal Journal / NepJOL). (Nepjol)

Mandal, M. K. (2024). *English Language Teachers' Readiness in Teaching English: A Narrative Inquiry* (KU eLibrary thesis). (elibrary.ku.edu.np)

Paudel, M. (2020). *Teacher Preparedness and Practices of Inquiry Based Teaching*. Nepalese Education Journal. (Nepjol)

Adhikari, N. P. (2020). *Teachers' perceptions of critical pedagogy in English language teaching classroom.* Journal of NELTA, 25(1–2), 179–190. https://doi.org/10.3126/nelta.v25i1-2.49740

Bhatt, B. R. (2024). *Teachers' perceptions towards English language teaching pedagogy in secondary schools of Nepal.* KMC Journal, 6(2), 128–142. https://doi.org/10.3126/kmcj.v6i2.68897

Giri, G. R. (2012). *A study on classroom management in teaching English* [Unpublished thesis]. Department of English Education, TU.

Kshetree, A. K. (2023). Pedagogical content knowledge and the Nepali English language teacher training. *Journal of Tilottama, 1*(1), 1–23. https://doi.org/10.3126/jtilottama.v1i1.64512

Kadel, P. B., & Tiwari, H. P. (2025). Integration of digital pedagogy in ELT: Teacher perception on learning achievement and professional development. *Tribhuvan University Journal, 40*(1), 110–124. https://doi.org/10.3126/tuj.v40i1.80105

Poudel, P. P. (Year N/A). Information and communication technologies and teacher educators of English in Nepal. *Journal of NELTA, 20*(1–2). https://doi.org/10.3126/nelta.v20i1-2.19774

Phunyal, B. (2025). Pedagogical strategies and ICT practices of English language teachers in Nepali schools. *GS Spark: Journal of Applied Academic Discourse, 3*(1), 49–58. https://doi.org/10.5281/zenodo.18143788

Saud, D. S. (2023). English language teacher professional development: Teacher educators' perceptions and experiences. *Bodhi: An Interdisciplinary Journal, 9*(1), 114–135. https://doi.org/10.3126/bodhi.v9i1.61850

Shahi, D. K., & Khadka, B. K. (2025). English teachers' perceptions towards integration of ICT in EFL classroom in Nepal. *Journal of Innovative Research, 3*(1). https://doi.org/10.54536/jir.v3i1.4071

Gyawali, Y. P. (2025). Exploring dimensions of teacher education in Nepal: Perspectives, challenges, and reform opportunities. *Journal of General Education and Humanities, 2*(4), 128. https://doi.org/10.58421/gehu.v2i4.128

Saud, D. S., & Laudari, S. (2023). English language teachers' experiences of using ICT in ELT. *Journal of NELTA, 28*(1), 151–165. https://doi.org/10.3126/nelta.v28i1.61800

Research Journal on Multi-disciplinary Issues
(A Peer Reviewed Open Access Journal)
ISSN: 2705-4594 [Print] E-ISSN 2705-4608 [Online]
Vol. 6 No.1 February 2026, pp.92-102
eJournal site: www.nepjol.info
www.jsmmc.edu.np

Application of Variable Separation Technique in the Analysis of First-Order Differential Equations

[1]Karan Kumar Mandal,
[2]Narendra Kumar Chaudhary

[1]Department of Mathematics, J.S Murarka Multiple Campus, Lahan
[2]Faculty Member
Department of Management
JSMM Campus Lahan, Siraha (Nepal)
Email:
karanmandal71@gmail.com
narendrachaudhary151@gmail.com

Article History:
Submitted: Nov. 14, 2025
Reviewed: January 25, 2026
Accepted: February 10, 2026
Doi:
https://doi.org/10.3126/rjmi.v6i1.91310

URL.: www.jsmmc.edu.np

A b s t r a c t

First order differential equations are used to model things that change at a rate that depends on the thing itself. We looked at three models: how a population grows, how radioactive things decay and Newton's Law of Cooling. What we found out is that we can use a technique called separation of variables, on each of these models. This technique lets us transform the models into a form so we can integrate the variables on their own. The population growth solutions we got show that population growth happens fast when the growth rate is always the same. This is like what happens with things they get weaker really fast over time. When things cool down the difference in temperature gets smaller and smaller compared to the temperature around them. These results tell us that the method we split the problems not offers us clear solutions but also helps us comprehend the math behind population expansion and these other physical things, including radioactive chemicals and cooling processes. However, the study also identifies a limitation: the method is effective only when the differential equation can be represented in separable form. Equations involving non-separable terms require other approaches. Despite this restriction, the findings imply that separation of variables gives a systematic and transparent framework for solving a major class of first-order equations and acts as a conceptual bridge into more advanced analytical methods.

Keywords: differential equations, variables, modeling, law of cooling

Introduction

Differential equations is a really big part of modern mathematics. This is because differential equations can be used to understand a lot of things that happen in life. Differential equations help us make sense of things that are always changing like

the cooling of a cup of tea or the number of people in a city going up or down or sickness spreading from person to person, like the flu. These things all happen slowly over time. Differential equations are a way to model and understand these kinds of changes. First-order differential equations are pretty simple. They only involve the derivative of the dependent variable. This dependent variable shows us the rate of change of something with respect to something. First-order differential equations are important because they are easy to understand and they are used a lot in life. That is why order differential equations are often used as the basis for mathematical modeling, in science and engineering. We use order differential equations to model things in science and engineering because they are straightforward and they really work (Wirkus & Swift, 2014)**.**

The aim of this article's is not only to understand the mathematical technique but also to appreciate its usefulness in solving practical problems. Through step-by-step examples and relatable applications will show how mathematics helps explain and predict real-world events in a logical and systematic way.

Literature review

This work in this article is focusing on application of variable separation technique in the analysis of first order differential equations. Many books, websites, and others papers were used to complete this article's, which are mentioned in the reference section at the last of this project work. A first order differential equation is an equation that involves the first derivative of an unknown function but no higher-order derivatives. It typically takes the form: $\frac{dy}{dx} = f(x, y)$These equations appear in diverse areas such as motion, population dynamics. First-order equations can be linear or nonlinear, and different solution methods apply depending on the type **(Boyce, DiPrima, & Meade, 2017)**.

Separation of variables is among the oldest and best understood schemes in differential equations and method of separation of variables one of the simplest and most powerful methods to solve first-order ordinary differential equations. This technique is particularly useful for modeling exponential growth, cooling/heating processes, and population dynamics. It allows students and researchers to derive explicit solutions from initially coupled rate equations (Simmons, 2016)**.** Real life applications of first order ODEs solved by separation of variables are widespread. For instance, in population dynamics, the Malthusian growth model can be expressed as $\frac{dP}{dt} = kP$, where P is the population at time t, and k is a constant growth rate. This equation can be solved by separating the variables and integrating both sides (Murray, 2002). Similarly, Newton's Law of Cooling, which models the temperature change of an object, is governed by a first-order differential equation of the form $\frac{dT}{dt} = -k(T - T_{env})$, which also yields to variable separation (Zill, 2018).

Methodology

The methodology of this study is based on the analytical technique of **separation of variables**, which provides exact solutions for a broad class of first-order differential equations. Variables Separation method works when the variables in the equation typically one independent and one dependent variable can be separated onto opposite sides of the equation. Once separated, the equation becomes easier to integrate, making it possible to find the general or particular solution. An equation is called separable if you can group all the terms involving x and dx on one side, and all the terms involving y and dy on the other side. The general form of such an equation is

$$\frac{dy}{dx} = f(x) \longrightarrow (i)$$

where f(x) is a known continuous function, the solution is straightforward. We can find y(x) by integrating both sides of the equation with respect to x. This gives

$$y(x) = \int f(x)\, dx + c \longrightarrow (ii)$$

where c is an arbitrary constant and the integral sign denotes any single antiderivative of f(x). We now see that this procedure can be applied to a broader class of differential equations, known as separable equations, having the form

$$\frac{dy}{dx} = \frac{f(x)}{g(y)} \longrightarrow (iii)$$

Clearly, any separable equation reduces to the simpler form in Eq. (i). To solve a separable differential equation, we rewrite it as

$$g(y)\, dy = f(x)\, dx \longrightarrow (iv)$$

At this point, we can observe that the left-hand side of the equation involves only the variable y and its derivative, while the right-hand side involves only x, hence the name "separated equation." We can now solve the separated equation by simply integrating each side of the equation with respect to x, getting

$$\int g(y)\, dy = \int f(x)\, dx + c$$

in order to emphasize the constant of integration c (Farlow, 2006)**.**

Example 3.1: Solve

$$(1 + y^2)dx + y(1 + x^2)dy = 0$$

Solution: Given

$$(1 + y^2)dx + y(1 + x^2)dy = 0$$

$$or, \quad y(1 + x^2)dy = -x(1 + y^2)dx$$

$$or, \quad \frac{y}{1 + y^2}dy = -\frac{x}{1 + x^2}dx$$

$$or, \quad \frac{y}{1 + y^2}dy + \frac{x}{1 + x^2}dx = 0$$

Integrating, we get

$$\int \frac{\mathrm{y}}{1 + \mathrm{y}^2}\mathrm{dy} + \int \frac{\mathrm{x}}{1 + \mathrm{x}^2}\mathrm{dx} = 0$$

or, $\log(1+y^2)+\log(1+x^2)=\log c$

or, $\log(1+y^2)(1+x^2)=\log c$

$(1+y^2)(1+x^2)=c$

Which is the required solution.

Applications

First order equations are often used to model real life situations involving rates of change, like speed, population growth or decay, heat flow, and fluid movement. These models help us understand how things change over time in simple or more detailed ways.

Population Growth and Decay Phenomenon

A very common observation about 'population growth' is that unless constrained by environmental or other limitations, populations (human beings, bacteria, plants and so on) tend to grow at a rate which is proportional to the size of the population. Larger the population, higher is the growth rate.

To convert it into a mathematical problem, let us assume that $x=x(t)$ is the population at time t. Also, let us assume that at time $t=0$, population is $x=x_0$ At any point of time, the rate of increase of the population with respect to time is dx/dt. According to the given situation,

$$\frac{dx}{dt}\propto x$$

So that

$$\frac{dx}{dt}=kx \text{ (growth equation)}$$

$$\frac{dx}{dt}=-kx \text{ (decay equation)}$$

where k is a constant of proportionality. Since the direction of change is positive (as larger the population, higher is the growth), k is positive. Usually it can be determined experimentally. Thus, we are left with $\frac{dx}{dt}=kx,\ x(0)=x_0$ (Sharma, 2010)**.**

Solving the Growth and Decay Equations

There are two main ways we can solve growth and decay equations: one is by using something called the integrating factor method, and the other is by using the method of separation of variables. We carry out the following steps

Using growth equation

$$\frac{dx}{dt}=kx$$

Solve the differential equation

$y'=kx$

$or,\frac{y'}{x}=k$

$or,\int\frac{y'}{x}dt=\int k\,dt$

$or, \int \frac{1}{x} dx = \int k dt$

$or, ln\, x = kt + c_1$

$or, x(t) = e^{kt} e^{c_1}$

$\therefore x(t) = Ce^{kt} \longrightarrow (2)$

The general solution $x(t) = Ce^{kt}$of the growth equation is called the exponential growth curve. One can obtain the solution of the decay equation using the same steps, getting the exponential decay curve $x(t) = Ce^{-kt}$

Newton's Law of Cooling

Heat may be transferred between and within bodies by conduction, convection or radiation. The case of conduction typifies the more general type of transport problem in which matters, energy or charge is transported across a region of space in some well-defined manner. A simple example of heat transfer is provided by Newton's law of cooling, which states that the rate at which an object cools is proportional to the difference between the temperature at the surface of the body, and the ambient air temperature. Thus, if is the surface temperature at time and T_a is the ambient temperature, then

$$\frac{dT}{dt} = -k(T - T_a) \longrightarrow (1) \quad T(0) = T_0$$

where $k > 0$ is some experimentally determined constant of proportionality, and T_o is the initial temperature. The equation (1) is separable and separating variables gives us

$$\frac{1}{T - T_a} dT = -k\, dt$$

Integrating both sides, we get

$$ln(T - T_a) = -kt + C$$

$or,\ T = C_1 e^{-kt} + T_a$, where $C_1 = e^C$

Applying the initial condition implies that

$$T_0 = C_1 + T_a \Rightarrow\ C_1 = T_0 - T_a$$

Therefore, the solution of the IVP is

$$T = (T_0 - T_a)e^{-kt} + T_a \longrightarrow (2)$$

In many real situations such a simple assumption for dT/dt must be modified to more complicated expressions, leading to more difficult differential equations (Cox, 1996).

Radioactive Decay

Radioactive decay is a process in which unstable atomic nuclei transform into more stable forms by emitting particles or energy. This decay happens naturally over time and follows a predictable pattern. A key characteristic of radioactive decay is that the rate at which a substance decays depends directly on how much of the substance is currently present. This relationship is an example of a first order differential equation and can be solved using the method of variable separation (Boyce, DiPrima, & Meade, 2017).

Mathematical Modeling

If N(t) represents the quantity of radioactive material at time t, then the rate of change of N over time can be described by

$$\frac{dN}{dt} = -kN$$

Here, k is a positive constant that represents the decay rate specific to the material. The negative sign indicates that the substance is decreasing. This is a first-order linear differential equation and can be solved by the method of variable separation

$$\frac{dN}{N} = -kdt$$

$$\text{or,} \quad \int \frac{dN}{N} = -k \int dt$$

$$\text{or,} \quad \ln N = -kt + C$$

Solving for N, we get the general solution

$$N(t) = N_0 e^{-kt}$$

where N_0 is the initial quantity at $t = 0$, and e is the base of the natural logarithm.
This model reveals that the decay of radioactive substances follows an exponential decline. Moreover, the half life $T_{1/2}$ the time it takes for half of the substance to decay relates to the decay constant k by

$$T_{1/2} = \frac{\ln 2}{k}$$

This relationship is crucial in calculating how long a substance will remain significantly radioactive, which has applications in nuclear medicine, radioactive waste management, and carbon dating (Kreyszig, 2010).

Results and Discussion

In this section, we present the results obtained through the application of the variable separation technique to different categories of first-order differential equations. For each model, the solution process is outlined, graphical behavior is described, and the implications of the findings are discussed in the context of existing studies.

Example 5.1: (Population Growth)

During the early stages of the COVID-19 outbreak in Nepal, the number of infected individuals was observed to double every 7 days. If there were 150 infected individuals on a certain day, how many infected individuals would there be after 21 days, assuming the number grows exponentially?

Solution: Let

$x(t)$ be the number of infected individuals at time t days after the initial time.

$x(0) = 150$

$x(7) = 300$ (since it doubles in 7 days)

The growth is proportional to the current population

$$\frac{dx}{dt} = kx \longrightarrow (1)$$

Solve the differential equation

$$y' = kx$$

$$or, \quad \frac{y'}{x} = k$$

$$or, \quad \int \frac{y'}{x} dt = \int k\, dt$$

$$or, \quad \int \frac{1}{x} dx = \int k dt$$

$$or, \quad ln\, x = kt + c_1$$

$$or, \quad x(t) = e^{kt} e^{c_1}$$

$$\therefore x(t) = Ce^{kt} \longrightarrow (2)$$

When $x(0) = 150, t = 0$

From equation (2), now we can write,

$150 = Ce^0 \Longrightarrow C = 150$

$x(t) = 150e^{kt}$

When $x(7) = 300, t = 7$

$300 = 150e^{kt} \Longrightarrow 2 = e^{7k}$

$or, \quad \ln(2) = 7k$

$k = \frac{\ln(2)}{7} \approx 0.099$

So the solution is

$x(t) = 150e^{0.099t}$

Now we find the number of cases after 21 days

$x(21) = 150e^{0.099\times21} = 150e^{2.079} \approx 1200$

After 21 days, the number of COVID-19 infected people in Nepal would be approximately **1,200** if the growth rate continued unchanged. Number of infected people during a time interval.

Table 5.1

Growth of Infected Population Over Time

Period of time	**Number of infected people**
0	150
7	300
14	600
21	1,200

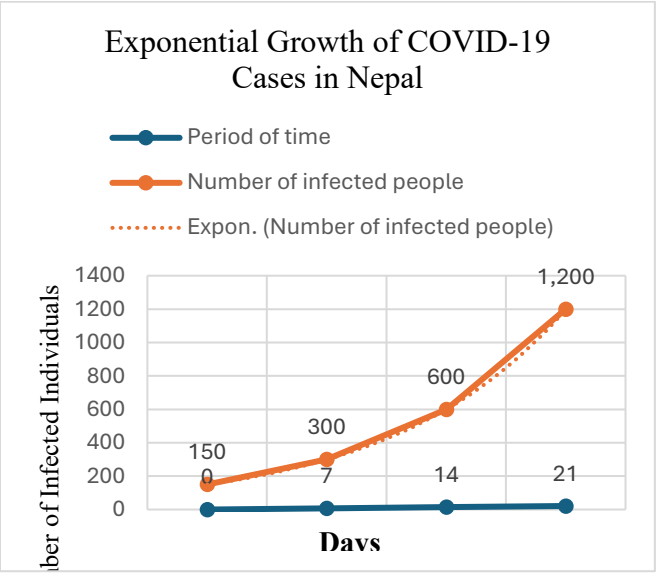


Figure 5.1: Exponential Growth of COVID-19 Cases in Nepal

The graph shows how the number of COVID-19 infections increased in Nepal during the early stage of the outbreak. You can see that the number of cases started at 150 and doubled every 7 days. After 21 days, the number reached about 1,200, which is marked clearly on the graph.

Example 5.2: (Newton's Law of Cooling)

Suppose that when Miss Scarlett discovered Mr. Boddy's body in the conservatory at noon, its temperature was 82 °F Two hours later, the temperature of the corpse was 72 °F. If the temperature of the conservatory was 65 °F what was the approximate time of Mr. Boddy's death?

Solution: Let T(t) denote the temperature of the body at time t, where T(0) represents the temperature of the body when it is discovered and T(2) represents the temperature of the body 2h after it is discovered. In this case, we have

$\boldsymbol{T_{room}}$ (ambient temperature) = 65°F

$\boldsymbol{T_1}$ (temperature at discovery at noon) = 82°F

$\boldsymbol{T_2}$ (temperature two hours later) = 72°F

Time between T_1 and T_2 = 2 hours

Normal body temperature = 98.6°F

Now using Newton's law of Cooling formula and substituting these values into

$$T(t) = T_{room} + (T_{initial} - T_{room})e^{-kt}$$

$$or, T(t) = 65 + (82 - 65)e^{-kt} = 17e^{-kt} + 65$$

Using $T(2) = 72$, at $t = 2$ we solve the equation

$T(2) = 17e^{-2k} + 65 = 72$

$or, 72 - 65 = e^{-2k} \Longrightarrow 7 = 17e^{-2k}$

$or, e^{-2k} = \frac{7}{17}$

$or, -2k = \ln\left(\frac{7}{17}\right)$

$or, k = -\frac{1}{2} \times \ln\left(\frac{7}{17}\right) = -\frac{1}{2}\ (-0{,}8873)$

$\therefore k = 0.4437$

Now use the same formula to find how long before noon Mr. Boddy died (temperature was 98.6°F then)

$82 = 65 + (98.6 - 65)e^{-kt} \Longrightarrow 17 = 33.6\, e^{-kt} \Rightarrow e^{-kt} = \frac{17}{33.6}$

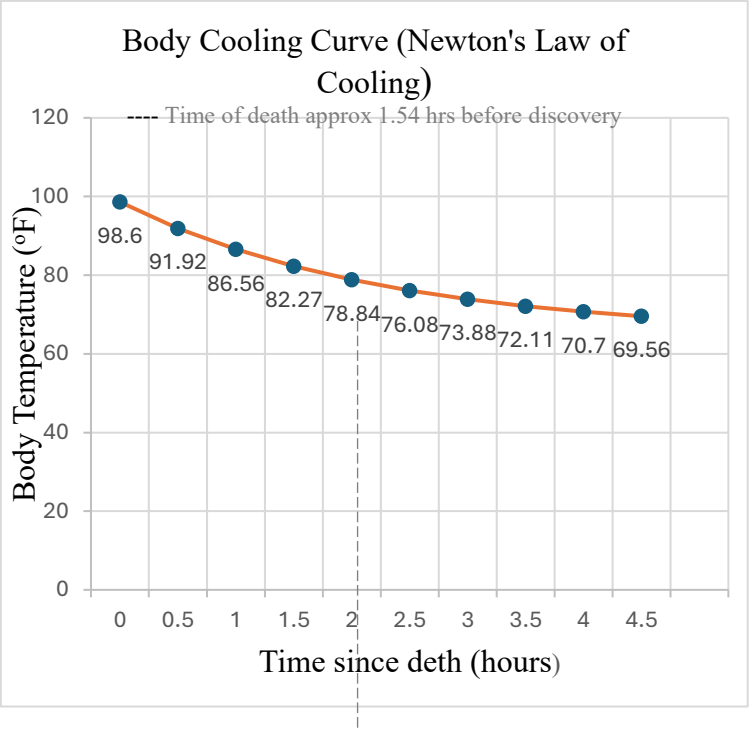
$or, -kt = \left(\frac{17}{33.6}\right)$

$\therefore t = -\frac{1}{k} \times \ln\left(\frac{17}{33.6}\right) = -\frac{1}{0.4437} \times \ln(0.50595) = 1.54$

Mr. Boddy likely died approximately 1.54 hours before noon, i.e., around 10:28 AM.

Table 5.2
Estimated Body Temperature vs. Time Since Death

Time since death (hours)	Temperature (°F)
0.0	98.60
0.5	91.92
1.0	86.56
1.5	82.27
2.0	78.84
2.5	76.08
3.0	73.88
3.5	72.11
4.0	70.70
4.5	69.56



The graph demonstrates that Mr. Boddy's body temperature dropped from a normal 98.6°F to 82°F over roughly 1.5 hours, allowing investigators to estimate that his death occurred around 10:28 AM.

Example 5.3: (Radioactive Decay)

A sample contains 100 grams of Carbon-14. Given that the half-life of Carbon-14 is 5730 years, determine how much remains after 10,000 years. Also, plot a graph of the decay over a time span of 0 to 10,000 years.

Solution: Given,

Initial amount (N_0) = 100 grams

Half-life ($t_{1/2}$) = 5730 years

Time elapsed (t) = 10,000 years

We start with the differential equation for radioactive decay

$$\frac{dN}{dt} = -kN$$

The is a first-order linear differential equation and can be solved by the method of variable separation

$$\frac{dN}{N} = -kdt$$

$$or, \quad \int \frac{dN}{N} = -k \int dt$$

$$or, \quad \ln N = -kt + C$$

Solving for N, we get the general solution

$$N(t) = N_0 e^{-kt}$$

Use Half-life to Find Decay Constant k

$$T_{1/2} = \frac{ln\,2}{k}$$

$$or, \qquad k = \frac{ln\,2}{T_{1/2}} = \frac{ln\,2}{5730} \approx 0.00012097$$

Compute Remaining Amount After 10,000 Years, Now

$$\mathrm{N(t)} = \mathrm{N_0 e^{-0.00012097\times 10000}} \approx 29.7 \text{ grams}$$

After 10,000 years, approximately 29.7 grams of Carbon-14 remains from the original 100 grams.

Discussion

The results obtained from these examples demonstrate the versatility of the variable separation technique in solving first-order differential equations across multiple domains. All solutions exhibit exponential behavior, either growth or decay, which matches theoretical predictions and aligns with findings from classical and contemporary studies in applied mathematics, physics, and engineering. The comparison with existing literature confirms that the method of separation of variables provides exact analytical solutions where other techniques (such as numerical methods) might only yield approximations. However, the limitation lies in its applicability only to equations that can be expressed in separable form.

Conclusions

This study demonstrates that variable separation technique is an effective and reliable method for solving first-order differential equations in various real-world applications, such as population growth, radioactive decay, and heat transfer. The method provides exact analytical solutions, offering clear insights into system behavior and confirming expected exponential growth or decay patterns. Its simplicity and accuracy make it preferable to purely numerical approaches, allowing deeper understanding and practical modeling. Future research could explore the application of variable separation to coupled or higher-order differential equations, stochastic systems, or hybrid analytical-numerical methods, further expanding its utility in both theoretical and applied contexts.

Acknowledgement

I want to thank Mr. Dilip Kumar Chaudhary, the Editor-in-Chief of this journal and Mr. Binod Kumar Yadav, RMC Coordinator for providing guidelines and suggestions for writing article. Likewise, I am also indebted to our Campus Chief, Mr. Sanjay Kumar Chaudhary for supporting materials as well as to computer operator, Mr. Sujeet Kumar Chaudhary, and to all those who supported me directly or indirectly to carry out this research.

References

Ahsan, Z. (2006). *Differential equations and their applications.* Hhi Learning Pvt. Ltd.

Boyce, W. E., DiPrima, R. C., & Meade, D. B. (2017). *Elementary Differential Equations and Boundary Value Problems.* Wiley.

Cox, W. (1996). *Ordinary Differential Equations.* Butterworth-Heinemann.

Farlow, S. J. (2006). *An Introduction to Differential Equations and Their Applications.* Courier Corporation.

Kreyszig, E. (2010). *Advanced Engineering Mathematics.* John Wiley & Sons.

Myint, U.-T. (1978). *Ordinary Differential Equations.* Elsevier North-Holland.

Ross, S. L. (2007). *Differential Equations.* Wiley India Pvt. Limited.

Sharma, A. K. (2010). *Text Book of Differential Equations.* Discovery Publishing House.

Simmons, G. F. (2016). *Differential Equations with Applications and Historical Notes (3rd ed.).* McGraw-Hill.

Wirkus, S. A., & Swift, R. J. (2014). *A Course in Ordinary Differential Equations.* Boca Raton, London New York: CRC Press, 2014.

Zill, D. G. (2018). *Differential Equations with Boundary-Value Problems.* Cengage Learning, 2016.

Research Journal on Multi-disciplinary Issues
(A Peer Reviewed Open Access Journal)
ISSN: 2705-4594 [Print] E-ISSN 2705-4608 [Online]
Vol. 6 No.1 February 2026, pp.103-112
eJournal site: www.nepjol.info
www.jsmmc.edu.np

Enhancing English Language Proficiency (Language Skills) through YouTube: A Systematic Review

[1]Tul Bahadur Shahi

[1]M Phil Scholar
School of Education
Kathmandu University
Email: tulbd@gmail.com

Article History:
Submitted: Nov. 15, 2025
Reviewed: January 15, 2026
Accepted: February 10, 2026
Doi:
https://doi.org/10.3126/rjmi.v6i1.91315

URL.: www.jsmmc.edu.np
URL: www.nepjol.info

Abstract

The systematic review examines 20 international studies (2020-2025) on the YouTube's role in enhancing English language skills: listening, speaking, reading and writing in EFL/ESL context across Indonesia, Vietnam, Peru, Saudi Arabia and Malaysia. Most of the studies are in the context of Indonesia. This study follows the PRISMA 2020 guidelines and this review reveals that YouTube significantly enhances and improves listening, speaking, reading and writing skills with better progress in vocabulary, pronunciation, and fluency and learner motivation. These 20 articles reveal that they are highly constructive and supportive, reporting significant benefits for reading and writing through multimedia-supported vocabulary development, retention, and writing creativity. The finding highlights that YouTube as an effective, flexible tool that supports autonomous and interactive learning, emphasizing the needs for strategic integration and digital literacy to maximize its educational impact.

Keywords: YouTube, digital tools, skills, instructional strategy

Introduction

In recent year, different social media like face book, TikTok, messenger, email etc. are using for teaching and learning activities. In the same way You Tube is also one of the most important social media that is commonly used by students and teachers for their learning. According to Pratama et al. (2020), YouTube is a video-sharing platform and a popular digital tool that allows users to upload, watch, and engage with videos. It is a powerful digital tool not only for education but also for entertainment. YouTube is a popular digital tool which is considered as web 2.0 where the viewers do not only upload videos; they can also provide feedback through asynchronous interaction to other video contents (Yaacob at al., 2024). It serves as a supportive resource for both entertainment and

educational content, providing opportunities for interactive learning and content creation. In Bangladesh, the L2 learners use YouTube and other new media tools for enhancing their language skills (Chatta, 2024). In the same way Wagner (2017) found that new technologies help language learning.

In this way YouTube has emerged as one of the most popular and accessible tools for English language learners worldwide. This platform allows the vast level of contents or instructional materials required for both students and learners as their necessity (Nuha & Saputri, 2021). Nowadays, You Tube has plays a crucial role to enhance educational proficiency for both teachers and students. YouTube is one of the most popular online video platforms. It enables the users to search several videos, comment on the videos, upload a video, and subscribe to the other users(Ratnaningsih & Gumiandari, 2022). Similarly, Muthoharoh at al., (2021) found that YouTube media could improve students' listening comprehension skill outcomes at Alikhlas High School, Bekasi city. Moreover, through a survey study, (Gutiérrez & Vladimir, 2924) found that using video in teaching listening could give a significant effect to make the students effortless to understand the content or the occasion about the material that students learn. Likewise, in recent years, there has been a huge attention in researching the use of YouTube in educational field, particularly in English language learning (Bakar et al., 2019; Miller, 2017; Wang & Chen, 2020). Teachers and educators used YouTube as a platform for sharing and watching to teach their students (Hussaeni et al., 2020; Yacoob & Saad, 2020). In this way You Tube is also playing significant role in education. It provides supportive role to enhance writing as well as other proficiency level of students.

Despite the growing popularity of You Tube as learning tool, there is lack in its comprehensive understanding regarding on its improvement in English language proficiency. Mainly, students are facing trouble in listening, speaking, reading and writing skills that need be enhanced with the help of You Tube. The existing research has focused primarily on listening and speaking skills of English language as EFL learners. Despite growing popularity among students and educators, You Tube remains under examined in systematic academic research.

At present, You Tube on the development of key language skills such as listening, speaking, reading and writing remains insufficiently researched. Even having vast level of educational contents available, there is a lack of clear evidence on how You Tube effectively enhances these skills in structured language learning environment, and leaving educators uncertain about how to best integrate this tool in their day to day practice. It focuses on how all four language skills are enhancing together with the help of You Tube as it is taken as an integrated teaching supportive materials.

The rapid advancement of digital technologies has significantly transformed the landscape of education with You Tube as an important digital tool for teaching English language education. There are several existing researches that are based on isolated

language skill or vocabulary development proficiency not for holistic language skills such as listening, speaking, reading and writing. They are primarily focused on listening and speaking. But this study will focused o four language skills. It also will support the confusion that how YouTube is used as an integrated language teaching tool for EFL class.

The primary purpose of this study is to provide a consolidated overview of the evidence on YouTube's impact on English language skills, identify any gaps in current research and evaluate the platform's potential for both format and informal learning settings. It also aims to guide educators in the effective integration of YouTube in curricula providing insights for learners based on strategies for maximizing the educational value of YouTube.

Method

This study employed a systematic review methodology to investigate the role of YouTube in enhancing the four core English language skills: listening, speaking, reading, and writing, among English language learners. The review adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) 2020 guidelines (age et al., 2021). The PRISMA framework was selected for its emphasis on transparency, replicability, and methodological rigor, providing a structured approach suitable for synthesizing evidence from diverse empirical studies within the field of education (Munn et al., 2018). Its systematic process aligns well with the study's objective of evaluating YouTube's impact across multiple language skills based on recent research, facilitating the selection, categorization, and synthesis of findings from relevant studies.

A comprehensive literature search was conducted across three academic databases: Google Scholar, ERIC (Educational Resources Information Center), and Research Gate. The search aimed to identify relevant empirical studies published between January 1, 2020, and 31 December 2024, ensuring the inclusion of recent research. The following keywords and their combinations were utilized in the search strategy: "You Tube and English Language Learning", "You Tube and Language Skills", "You Tube and Reading Skill", and "Digital Media and English Language Skills".

This study process followed the four phases of the PRISMA 2020 guidelines: identification, screening, eligibility and inclusion (Page et al., 2012)

Identification: The initially I downloaded a total of 62 from three databases ERIC, Google Scholar and Research Gage, based on titles and abstract.

Screening: These 62 records were screened**.** Duplicates (n=10) were removed. Two articles (n=2) were excluded due to file corruption, leaving 50 articles are for further assessment. These 50 articles underwent title and abstract screening for initial relevance.

Eligibility: The full texts of the remaining 50 articles were retrieved and assessed for eligibility by applying the inclusion and exclusion criteria, focusing on publication year, peer, review status relevance to You Tube –based English Learning and involvement of ESL/EFL learners.

Inclusion: Following the full text review, 30 articles were excluded. The primary reasons for exclusion were publication outside the specified date range (n=17) and a lack of direct relevance or focus on You Tube's role in enhancing the core language skill (n=13). This process resulted in final sample of 20 articles deemed eligible for inclusion in the systematic review. The following are the criteria to include the studies for final review. In this way, finally 20 articles were taken for thematic synthesis which was focused on You Tube' role or impact on enhancing key major language skills: listening, speaking, reading and writing.

Findings and Discussion

In this section, I respond to the two research questions posed in the introduction of this review. Each subheading below corresponds to one research questions and presents a thematic synthesis of the findings of 20 selected articles published between 2020 and 2025. The discussion integrates the learners' perceptions, observed language gain, teaching strategies supported by YouTube English language classroom. The first two subheadings focus on the impact of YouTube on listening and speaking skills and on reading and writing skills respectively. The third subheading addresses the general enhancement of English language proficiency across four language skills. Finally, the fourth subheading presents the learner-centered and instructional strategies adopted by educators to integrate YouTube effectively into language instruction.

Enhancing Listening Skill through YouTube

Listening skill is one of the four skills of language skill. It is the beginning phase of language learning as same in the foreign language learning process too. It is given more priority in existing research studies. They highlight YouTube's strong potentiality to enhance learners' listening comprehension in English language education. in this study, among 20, nine articles were selected specially investigating how YouTube helps listening skill in EFL learning. There articles were across the contexts like Indonesia, Malaysia, Vietnam, and Saudi Arabia.

The study reports that the multimedia nature of YouTube extensively provides learners varieties of authentic and diverse auditory input, ranging from conversation, interview, speeches, and dialogue. Such materials are not available to traditional textbooks but they are primarily essential in today's textbooks. Many studies like: (Tran, 2022; Yaacob et al., 2021), focus that such exposure are highly referred to real-life accents, varied speech speed and context, they greatly affect in improving learners' ability to speak in natural setting.

Some researchers found that the features of YouTube like pause, rewind, and replay videos allow the learners for engaging in self-placed and repetitive listening. That feature helps learner to develop comprehension and retention. Researcher like Ratnaningsih and Gumiandari (2022) investigated those students who used YouTube in their learning found better word recognition and improved ability to infer meaning from

context. Moreover, some studies show learners' motivation and engagement frequently that YouTube's audio-visual contents attract and stimulate learners in enhancing English language. Such videos with English content help to reduce anxiety and encouraged more in students' practice (Chatta, 2024; Gutierrez & Vladimir, 2024).

Despite several benefits of YouTube, there are adequate suggestions that effective listening development is only possible if there is proper utilization of devices like mobile laptop and tap with internet access. In this way, teachers need to guide learners in selecting suitable videos which only enhance their proficiency level and learning objectives. The contents without teachers' support, the wide range of YouTube contents can overwhelm and create puzzles in their learning. As a surface, YouTube effectively supports learners' listening skills as they get variety of contents that makes them more engage-able.

Enhancing Speaking Skill through YouTube

The second phase of language learning process is speaking skills. It is also a prominent skill of the four skills of language. Most of the studies out of 20, 10 studies that focus on how YouTube plays a significant role to enhance speaking skill of learners in EFL classroom. In this way YouTube essentially provides a crucial platform and facilitate the learners in development of oral proficiency among English learners especially in diverse contexts like Indonesia, Vietnam, and Saudi Arabia.

These studies show that YouTube offers learners abundant opportunities to support them to become self-learners. Because YouTube provides authentic and important engageable contents of videos across several contexts. Those features of videos contain native speakers' dialogues, interviews and educational tutorials. These studies also state that YouTube videos enhance rich models of pronunciation, intonation, stress and natural way of speaking skills. Such features are absent in traditional textbooks and teaching environment. The scholar, Khanh and Le (2022), notice that tertiary level of learners in the context of Vietnam effectively improved their speaking confidentiality and fluency after regularly interacting with YouTube videos.

Similarly, many studies highlight that the role of YouTube as a modern educational system, YouTube is highly preferred as a teaching and learning supportive material. It develops autonomous and blended learning of speaking skills (Santiana and Marzuki, 2022; Cynantia et al., 2024). It also creates an opportunity that learners can imitate and practice speaking that they heard in videos. Such a way of repeated exposure and practice enables learners to internalize vocabulary, phrases, even sentence structure, that obviously enhances their spoken fluency.

Likewise, some studies state that the use of learner centered instructional strategies combined combined with YouTube is incredibly fruitful to enhance learners' speaking skills in EFL class setting. The teachers who artistically integrated YouTube in their teaching curriculum videos containing speaking tasks, role play, and presentation found that their learners become more motivated and engaged. The scholars, Ahmad Nur

Syafiq et al., (2021) observed that at period of COVID-19 pandemic situation, the EFL teachers contained YouTube videos as learning materials helped students overcome speaking anxiety. These contents also encouraged learners for active participation in online class. Despite its several positive strengths, researchers argue that speaking skill development via YouTube requires a careful guide and suggestions of teachers in selecting right and appropriate contents.

Enhancing Reading through YouTube

Speaking skill is the third phase of learning skill among the four. It is also a basic and fundamental skill of language learning process. In this study, compared to listening and speaking, fewer studies are under this skill. Existing studies show that YouTube plays noticeable role in enhancing the learners' reading skill. In this way the selected evidence suggest that it can play meaningful role also in reading skill when strategically YouTube integrated teaching and learning class executed in EFL setting.

Similarly, YouTube improves reading skills of learners primarily through multimodal context when it includes subtitles or closed captions. Such texts added when combined with spoken language and visuals that support the learners in decoding with unfamiliar words. These also support word recognition and content comprehension. The study by Kurniasari, Widodo, and Yappi (2022), state those elementary students in Indonesia showed reading comprehension increasingly when class integrated with YouTube and readable texts and contextual explanations. It was conducted during the COVID-19 pandemic that concludes visual context helped learners infer meaning and retain vocabulary.

Additionally, some studies identify that educational YouTube channels specially designed for reading instruction are very supportive to develop reading skills of the EFL learners. Such channels feature narrated storybooks, phonics instructions, vocabulary development and reading aloud activities. This type of learning is primarily beneficial for young or beginner level learners. It helps learners to build decoding and pronunciation skills along with comprehension skills too. Although, having several benefits of YouTube, studies point out that reading development via YouTube is not given more focus. These available studies tend to treat reading as a secondary skill that they have studied reading skill with together other skills.

Enhancing Writing Skill through YouTube

Among four key language skills, writing is in the last phase. It is also known as productive language skills. In my study, among four core skills, this writing skill is least frequently addressed in the reviewed articles. Although it holds a very effective potential in language learning activities through use of YouTube in EFL context, there is less priority in existing studies. Out of 20 selected studies, a few studies are only directly associated and focused on writing skill. For instance, study by Muthoharoh et al., (2021), Lumban Raja and Napitupulu, and Fadilliah et al., (2023) focus on writing skill in direct way. These

article state that YouTube integrated language class is very informative and insightful that deal how YouTube when used appropriately, that significantly enhances learners' writing creativity, vocabulary use, and their organization.

After the use of YouTube key advantage is found in students' contextual comprehensive writing. Because the videos on a variety of real-life topics such as culture, travel, adventure, food, science and personal experiences that provide meaningful context and content both. It helps learners learn writing skills in a natural setting. For example, the study, Muthoharoh et al., (2021), points that the use of YouTube videos mainly supports the student's writing skill in junior secondary level during COVID-19.

Similarly, YouTube also supports multimodal composition as an emerging trend at the present. In such learning, students are highly engaged and encouraged to write not just essay or paragraphs, but also write script, for videos, commentaries, video summaries or reflection in a blog style when they watched such YouTube contents. For example, the study conducted by Napitupulu and Raja in Indonesian context found that students with YouTube class helped in narrative and descriptive writing by exposing them real world language input and diverse contexts.

Methodological Trends

In this systematic review, studies from 2020 and 2025 were examined to explore the role of YouTube in enhancing language proficiency. These studies from diverse contexts adapted various methods as research methodology. Among them 6 studies employed mixed method design. The studies of Narwastu Ajeng Kurniasari et al. (2022), Ahmad Nur Syafiq et al., (2021), Aenun Muthoharoh et al., (2021), Aizan Yaacob et al., (2021), Shadam Hussaeni Handi Pratama et al., (2020), and Arfa S.N. Fadillah et al., (2023) are based on mixed method research design. Similarly, these studies also used pre-test, post-test, survey, interview, questionnaire and interview as data collections tools as a combinational way. Studies focus to how YouTube helps learners to enhance their language skills.

Some studies follow experimental and pre-experimental designs in quantitative research methods. Among 20 studies 6 have adopted this method. For example, Theodara Evita et al., (2020), Kothimah Mahmudah (2020), Balaswamy Chata (2024), and Arfa S.N. Fadillah et al. (2023) studies are mostly followed by this type of method. Data was collected through pre-and post-tests, surveys, and questionnaires to evaluate the improvements of learners' language skills: listening, speaking, reading, and writing.

Similarly, a total of 6 studies employed descriptive qualitative methods with case study design. Mainly, scholars, Theodora Evita Bella Lumban Raga and Selviana Napitupulu (2020), Cynantia Rachnijati et al. (2024), Vladimir Roman gutieerrez-Juancayo (2024), Aenun Muthoharah et al. (2021) Lidia Ratnaninsih and Septi Gumiandari (2022), and Balaswamy chatta (2024) have adopted case study qualitative descriptive research

methods. And these used interview, document analysis and classroom observation as data collection tools to explore teachers' and students' perceptions or stories.

Some studies are based on systematic literature reviews too. Among 20, 3 studies followed this systematic review method like Muhammad Saddam Husein Aljavari et al. (2923), Mahammad Ulin Nuha and Tiyas Saputri (2021) have followed this method. These studies didn't use the firsthand data rather used previous existing documents mainly articles related to YouTube's role in enhancing language skills. Additionally, 2 articles are conducted using action research based on qualitative research methods. Studies like; Van Ngoc Khanh and Thao Quang Le (2022) and Edy Suseno and Ikip Widya Darma (2024) are based on action research. They observe the teacher's classroom activities and performance as YouTube integrated class as data collection tools.

Conclusion and Implication

This systematic review of 20 research articles from 2020 to 2025 highlights the significant role of You Tube in enhancing English language skills: listening, speaking, reading and writing across diverse educational contexts primarily in Indonesia, Vietnam, Peru, Saudi Arabia and Malaysia. Most studies (16 out of 20) focused on listening and speaking skills. You Tube has played vital role to improve learners' listening and speaking skills with comprehensive way. It shows that YouTube helps to enhance comprehension, pronunciation, vocabulary acquisition, speaking fluency, confidence and motivation. The YouTube platform offers authentic audio-visual contents exposures to native accents and real-life language use which is particularly beneficial in EFL contexts.

This review found that most of the studies are based on listening and speaking skills of language in EFL classroom setting. 9 and 10 articles respectively addressed listening and speaking skills focus on how YouTube enhanced them after YouTube integrated class maintained in ELT context. They focus YouTube multimodal, authentic and interactive content essentially enhance comprehension, fluency, pronunciation, and motivation of learners.

A few articles (4 out of 20) are concentrated on reading and writing skills of language. This study reveals that You Tube can positively impact in learners' reading and writing ability through engaging multimedia contents that aids vocabulary retention, grammar understanding and writing creativity. The asynchronous nature of videos allows learners to review materials repeatedly, enhancing compression and learning autonomy. Learners generally perceive YouTube as an effective, motivating and flexible tool for language learning. It supports autonomous learning and offers opportunity for repeated practice which helps to have higher engagement and better language outcome.

Methodologically, diverse approaches are applied in this review from diverse context. In this way total of 6 articles applied mixed methods, experimental and pre-experimenta also followed 6, and 6 adapted the case study research methods. Moreover, three articles employed systematic literature review. Likewise, 2 studies followed the

action research following interview and observation as a data collection tools.

Integrate YouTube videos carefully into lesson plans to enhance learners' exposure for authentic English language use. Multimedia content also fosters learners' motivation, confidence and autonomy their study suggests to use YouTube in our ELT setting accordingly. Design tasks around YouTube content that target specific language skills, such as speaking fluency or listening comprehension that need to be applied as an artistic way as teaching material. Therefore, to address psychological barriers a teacher should select right and appropriate content by including supportive and low-anxiety learning materials and contents. Therefore, it is necessary to incorporate digital tools like YouTube in language curricula to reflect modern blended learning approach.

References

Chatta, B. (2024). The effect of YouTube on speaking and listening skills of students. *International Journal of Instruction*, 149–162.

Fadhillah, J. N., Muniroh, S., & Rahmaningtyas, H. (2021). English department students' perceptions of using English talk show videos on YouTube to improve listening skill. *JoLLA: Journal of Language, Literature, and Arts*, 1451–1465.

Gutiérrez, H., & Vladimir, R. (2924). Impact of a YouTube channel on ESL students' oral skills in a Peruvian higher institute. *World Journal of English Language*.

Huancayo, G., & Vladimir, R. (2024). Impact of a YouTube channel on ESL students' oral skills in a Peruvian higher institute. *World Journal of English Language*, 392.

Ilyas, M., & Putri, M. E. (2020). YouTube channel: An alternative social media to enhance EFL students' speaking skill. *J-SHMIC: Journal of English for Academic*.

Kurniasari, N. A., Widodo, J. P., & Yappi, S. N. (2022). The effectiveness of YouTube on elementary school students' reading skills during the Covid-19 pandemic. *Research & Learning in Elementary Education*, 3840–3846.

Lumban Raja, T. E., & Napitupulu, S. (2025). The application of YouTube teaching media in writing skills. *INNOVATIVE: Journal of Social Science Research*, 2463–2481.

Mahmudah, K. (2022). The research review about using YouTube English channel in improving students' English foreign language skills. *Journal of Research in English Language Teaching (JR-ELT)*, 17–30.

Muslem, A., Fata, I. A., & Saputri, W. I. (2022). The effect of English authentic YouTube videos on students' speaking skills in rural school. *Journal of Education Technology*, 423–430.

Muthoharoh, A., Ulya, A. Z., Nawangsari, E., Fatin, S. R., & Mualim, M. (2021). The use of YouTube as a medium for teaching English writing skill during Covid-19 pandemic: A case study at 7th grade of MTs Ma'arif NU 01 Kemranjen. *Tarling: Journal of Language Education*.

Mutiarani, M., Hadi, M. S., & Dwinanda, F. A. (2022). English with Lucy YouTube channel to teach students' speaking skill. *TEKNOSASTIK*.

Nuha, M. U., & Saputri, T. (2021). Improving students' speaking skill through YouTube video: Systematic review. *Konstruktivisme: Jurnal Pendidikan dan Pembelajaran*.

Pratama, S. H., Arifin, R. A., & Widianingsih, A. W. (2020). The use of YouTube as a learning tool in teaching listening skill. *International Journal of Global Operations Research*, 123–129.

Rachmijati, C., Anggraeni, A., & Apriliyanti, D. L. (2019). Implementation of blended learning through YouTube media to improve students' speaking skill. *OKARA: Jurnal Bahasa dan Sastra*, 153–170.

Ratnaningsih, L., & Gumiandari, S. (2022). The impact of TED YouTube channel to improve listening in English learning students of TBI IAIN Cirebon. *International Journal of Educational Qualitative Quantitative Research*, 8–15.

Santiana, S., & Marzuki, A. G. (2022). YouTube: A modern breakthrough of autonomous learning to hone speaking skills. *Proceedings of the International Conference on Islamic and Interdisciplinary Studies (ICIIS)*. doi: https://jurnal.uindatokarama.ac.id/index.php/iciis/issue/archive

Suseno, E. (2024). Enhancing speaking skill through YouTube: Systematic literature review. *International Journal of Social Sciences*, 100–105 .

Syafiq, A. N., Rahmawati, A., Anwari, & Oktaviana, T. (2021). Increasing speaking skill through YouTube video as English learning material during online learning in pandemic Covid-19. *Elsya: Journal of English Language Studies*, 50–55.

Tran, T. T. (2022). Using YouTube video clips of different themes to enhance students' listening skill in an EMI class. *SCOPE: Journal of English Language Teaching*, 106–114.

Truong, V. N., & Le, T. Q. (2022). Utilizing YouTube to enhance English speaking skill: EFL tertiary students' practices and perceptions. *AsiaCALL Online Journal, 13*, 7–31. doi:https://doi.org/10.54855/acoj.221342

Yaacob, A., Amir Amir, A. S., Mohd, A. R., Mohd Yaakob, M. F., & Mohamad, Z. F. (2024). Impact of YouTube and video podcast on listening comprehension among young learners. *International Journal of Interactive Mobile Technologies*.

Research Journal on Multi-disciplinary Issues
(A Peer Reviewed Open Access Journal)
ISSN: 2705-4594 [Print] E-ISSN 2705-4608 [Online]
Vol. 6 No.1 February 2026, pp.113-126
eJournal site: www.nepjol.info
www.jsmmc.edu.np

नेपालमा लेखिएको पहिलो कानुन संहिता विवादरत्नाकर १३१४ ई. को परिचयात्मक अध्ययन

[1]हिरालाल कर्ण

[1]Faculty Member
Department of Historyt
SSMY Multiple Campus
Siraha (Nepal)
Email:
hiralalkarn2@gmail.com

Article History:
Submitted: Nov. 15, 2025
Reviewed: January 29, 2026
Accepted: February 10, 2026
Doi:
https://doi.org/10.3126/rjmi.v6i1.91318

URL.: www.jsmmc.edu.np
URL: www.nepjol.info

लेखसार

जङ्गबहादुर राणाले १८५३ ईस्वीमा ल्याएका मुलुकी ऐन वि.स. १९१० भन्दा पहिलेको नेपालको कानुनको साहित्य अन्धकारमा रहेको छ । हुन त १३५४ ईस्वीमा राजा भएका जयस्थिति मल्ल र १६०६ ईस्वीमा राजा भएका रामशाहले गरेका सामाजिक आर्थिक न्यायिक सुधारहरु उल्लेखनीय रहेको छ । पुरुषेत्तमलोचन श्रेष्ठ, विष्णुप्रसाद खनाल लगायतका कतिपय नेपाली इतिहासकारहरुले यी सुधारहरुको आधारग्रन्थ राजा जयस्थितिमल्लको समयमा ने.स. ५०० (१३७९/८० ई.) मा लेखिएको न्यायविकासिनी नामको मानवन्यायशास्त्रको ग्रन्थलाई मानेका छन् । तर न्यायविकासिनीभन्दा ६०/६५ वर्ष पहिले भक्तपुर दरबारमै लेखिएर नेपाल, मिथिला, बंगालमा चर्चित रहेको नेपालको कानुन साहित्यको पहिलो ग्रन्थ विवादरत्नाकरलाई बिर्सेका छन् । यो ग्रन्थ आजसम्म पनि नेपालमा ओझेलमै रहेको छ । जबकि भारतमा १७५७ इस्वीको पलासीको युद्धपछि स्थापित ब्रिटिश साम्राज्यमा कानुन व्यवस्थाका लागि टेरिटोरियल एक्टमा उचित स्थान दिएर तत्कालीन गुरुकुल विद्यालय, महाविद्यालयहरुमा अध्यापन गरिँदै आएका चण्डेश्वरको यस विवादरत्नाकरलाई पण्डित दीनानाथ शर्मा विद्यालंकारको सम्पादनमा १८८७ ईस्वीमा पहिलोपटक र कमलकृष्ण स्मृतितीर्थको सम्पादनमा १९३१ ईस्वीमा दोस्रो पटक एशियाटिक सोसाइटी अफ बंगाल कलकत्ताबाट प्रकाशित गराएका थिए । उक्त ग्रन्थको प्रारम्भ र अन्त दुवै ठाउँमा नेपालमा यो पुस्तक लेखिएको कुरा स्मृतिकार चण्डेश्वर ठाकुरले लेखेका छन् । यो अनुसन्धान पुर्णरुपमा सहायक स्रोतहरुमाथि आधारित भएपनि मुख्य प्राथमिक स्रोतको रुपमा विवादरत्नाकरको १८८७ ई. र १९३१ ई. को दुवै संस्करणको प्रतिलाई लिइएको छ । यस अध्ययनमा प्राप्त तथ्य तथ्याङ्कहरुलाई ऐतिहासिक घटना, पात्र र समय सान्दर्भिक विषय सामग्रीहरुसित तुलना गरी गुणात्मक अनुसन्धानका व्याख्यात्मक र विवरणात्मक विधिबाट विश्लेषण गरेर निष्कर्ष निकालिएको छ । यस पुस्तकमा समेटिएका कानुनी प्रावधानहरु तत्कालीन समाजका लागि मात्र नभई वर्तमान समयमा पनि मुलुकी कानुन संहिता निर्माणका लागि मार्गदर्शक ग्रन्थ हुन सक्छ ।

मुख्य शब्दहरु: कानुनसंहिता, कार्यविधि, चण्डेश्वर, देवानी, फौजदारी, विवादरत्नाकर

अध्ययनको पृष्ठभूमि

नेपालको कानुनको इतिहासको अध्ययन गर्दा १३५४ ईस्वीमा राजामा भएका जयस्थिति मल्लले गरेका सुधार र १६०६ ईस्वीमा गोरखाको गद्दीमा बसेका रामशाहले गरेका सुधारहरुलाई कानुन व्यवस्था

बसाल्ने प्रयासको रुपमा लिइन्छ । आजसम्म नेपालको पहिलो लिखित कानुनको रुपमा प्रथम राणाप्रधानमन्त्री जङ्गबहादुर राणाले १८५३ ईस्वीमा ल्याएको नेपालको मुलुकी ऐन वि.स.१९१० लाई मानिआएको पाइन्छ । अब प्रश्न उठ्छ के जङ्गबहादुरले १८५३ ईस्वीमा मुलुकी ऐन ल्याउनुभन्दा पहिले नेपालमा कानुन व्यवस्था थिएन् ? यदि थियो भने त्यो कुन कानुन थियो ? राजा जयस्थिति मल्ल र रामशाहले कुन कानुनको आधारमा सामाजिक र आर्थिक सुधारहरु गरेका थिए ? रामशाहको पालामा न्यायका लागि प्रसिद्ध 'न्याय नपाउनु गोरखा जानु' भन्ने उखान प्रचलित हुँदा उनले कुन कानुनको आधारमा न्याय सम्पादन गर्दै आएका थिए ? आदि यी यस्ता प्रश्नहरु छन् जसले नेपालको कानुनको इतिहासमा उत्तरको प्रतिक्षामा छन् । वि.स. २००७ (१९५१ ई.) मा देशमा प्रजातन्त्रको आगमनपछि यसतर्फ केहि प्रयास अवश्य भएको देखिन्छ । यसै क्रममा वि.स. २०२२ (१९६६ ई.) मा नेपालको कानुन तथा न्याय मन्त्रालयले १८५३ ई. को मुलुकी ऐनलाई पुनर्मुद्रण गरी प्रकाशन गर्दा त्यसको भूमिकामा मानवन्यायशास्त्रको उल्लेख गरेको पाइन्छ । नेपालका केहि प्रबुद्ध इतिहासकारहरुले मानवन्यायशास्त्रको ग्रन्थ न्यायविकासिनीलाई नेपालको पहिलो कानुन संहिता मानेर यो पुस्तक लेखिएको दिन फागुन शुक्ल तृतीयालाई कानुन दिवसको रुपमा मनाउनुपर्ने अभियान चलाएको देखिन्छ । हालै इतिहासकार तथा अधिवक्ता रोशन कुमार झाको फेसबुक पेजमा प्रकाशित विवरण अनुसार तुल्सीलाल बसुकला, भरतमणि जंगम, सृजना प्रजापति, ज्योति जंगम, रुशेल शिल्पकार र रोशन कुमार झा लगायतका व्यक्तिहरु युथुनिमम दरबारमा भेला भएर उक्त दिनलाई कानुन दिवसको रुपमा मान्यता दिन माग गरेका छन् (रोशनकुमार झाको फेसबुक पेज, १६ फरवरी २०२६ ई) । उनीहरुको यस प्रयासको पछाडी मुख्य रुपमा वि.स. २०८२ भदौ ३ गते प्रकाशित पुरुषेत्तमलोचन श्रेष्ठको शोधपुर्ण लेख "मानवन्यायविकासिनी : नेपालको पहिलो संहिताबद्ध लिखित कानुन" र विष्णुप्रसाद खनालको लेख "ऐतिहासिक कानुनी दस्तावेज : न्याय विकासिनी" जस्ता अनुसन्धानात्मक लेखहरु रहेको देखियो । तर दुवै इतिहासकारहरुले आफ्ना लेखहरुमा विवादरत्नाकरको चर्चा गरेको देखिएन् । मैले यस अध्ययनमा नेपालको कानुनको इतिहासको पहिलो कानुन संहिताको रुपमा न्यायविकासिनीभन्दा ६५ वर्ष पहिले र १८५३ ईस्वीको मुलुकी ऐनभन्दा ६०० वर्ष पहिले भक्तपुर दरबारमा लेखिएको हिन्दु कानुन संहिताको पुस्तक विवादरत्नाकर रहेको पाएँ । यो कानुन संहिता जयस्थिति मल्लभन्दा ४० वर्ष पहिले लेखिएकोले राजा जयस्थिति मल्लको समयमा लेखिएको मानवन्यायविकासिनीको र रामशाहले गरेका सुधारहरुको एक प्रंमुख आधार ग्रन्थ रहेको पाएँ । त्यसैले यस अध्ययनमा तिनै कानुन संहिताको परिचयात्मक अध्ययनको कार्य गरिएको छ ।

नेपालमा लिच्छविकालदेखि परम्परागत रुपमा हिन्दु धर्मशास्त्र, स्मृतिग्रन्थहरुमाथि आधारित न्यायप्रणाली र कानुनी व्यवस्था सञ्चालनमा रहेको इतिहास पाईन्छ । यस कुराको पुष्टि लिच्छवि राजा नरेन्द्रदेवको अनन्तलिंगेश्वरको मानदेव सम्वत ८० को अभिलेखको अडतीसौं पंक्तिमा परेको 'पालनपरैरेव शास्त्रानुशी' शब्द (बज्राचार्य, वि.स. २०३० : पृ. ४८६) र यागबहालको मानदेव सम्वत १०३ जेष्ठ शुक्ल सप्तमी तिथिको अभिलेखको तीसौं पंक्तिमा परेको 'पालनीय एव यतो धर्मशास्त्र वचनं' (ऐजन ४९७) शब्दबाट हुन्छ । अर्थात लिच्छवि राजाहरुले कुनै पनि आज्ञा, आदेश, परमादेश, सनद जारी गर्दा वा अन्तरासन, परमासनबाट न्याय निसाफ गर्दा हिन्दु धर्मशास्त्र र स्मृतिग्रन्थहरुको वचनलाई कानुनी आधारको रुपमा लिने गरेको पाईन्छ । कानुनको इतिहासमा सबभन्दा पहिले धर्मसूत्रहरुमा कानुनको व्यवस्था भएको कुरा भारतीय विद्वान भगवतशरण उपाध्यायले लेखेका छन् । "धर्मसूत्रहरुमा नै पहिलो पटक ठीक ठीक कानुनको व्यवस्था भएको छ । देवानी कानुन र फौजदारी कानुनको नाम त्यसबेला व्यवहार थियो । सबभन्दा प्राचीन धर्मसूत्र गौतम, बौधायन र आपस्तम्बका रचनाहरु हुन् । गौतम मुनि ५०० ई.पु. भन्दा पहिलेका हुन् । बौधायन करीब करीब त्यसैबेला भएका थिए । आपस्तम्ब शायद १०० वर्षपछि ४०० ई.पु.मा भएका थिए ।

बौधायन र आपस्तम्ब दक्षिणका ब्राह्मणहरु हुन् भने गौतम उत्तरका(उपाध्याय, १९५५ ई. : पृ. ५५) । पूर्वमध्यकालमा यस्ता धर्मसूत्र र स्मृतिग्रन्थहरुमा उल्लेखित कानुनी व्यवस्थाहरुमध्ये निश्चित विषयवस्तुमाथि आधारित भएर मनु, नारद, बृहस्पति, शुक्र, विष्णु आदिको स्मृतिहरुको आधारमा कानुन संहिता तयार गर्ने प्रक्रिया शुरु भएको देखिन्छ । यस्ता कानुन संहिताहरुमध्ये दक्षिण भारतका चालुक्य सम्राट विक्रमादित्य छैठौंको दरबारमा आश्रित विद्वान विज्ञानेश्वरले याज्ञवल्क्य स्मृतिको सम्पत्ति उत्तराधिकारसम्बन्धि व्यवस्थालाई समेटेर तयार गरेको स्मृतिनिबन्ध टीकाग्रन्थ 'मिताक्षरा' र बंगालको जिमूतवाहनले लेखेको 'दायभाग' उल्लेखनीय रहेको छ । भारतको ब्रिटिश साम्राज्यमा बंगाल लगायत पुर्वोत्तर भारतमा जिमूतवाहनको दायभाग प्रभावकारी थियो भने भारतको अन्य सम्पुर्ण भूभागमा विज्ञानेश्वरको मिताक्षराको आधारमा न्याय सम्पादन गरिन्थ्यो । यस सन्दर्भमा पण्डित बलदेव उपाध्याय लेख्दछन् । "हिजोआज अँग्रेज अदालतहरुमा दायभाग आदिका लागि जुन व्यवस्था वा नियम रहेको छ, त्यो हाम्रो धर्मशास्त्रहरुमाथि नै आधारित रहेको छ । उदाहरणका लागि बंगालमा दायभाग (सम्पत्ति उत्तराधिकार) का लागि जुन कानुन लागु छ त्यो जिमूतवाहनको सुप्रसिद्ध ग्रन्थ दायभाग अनुसार छ । भारतको अन्य प्रान्तहरुमा यस सम्बन्धि जुन व्यवस्था रहेको छ, त्यो याज्ञवल्क्य स्मृतिको टकिाग्रन्थ मिताक्षरामाथि आधारित छ" (उपाध्याय, १९५३ ई. : पृ.२६९-७०) ।

पछि कन्नौजका लक्ष्मीधर भट्टले सत्रह भागमा लेखेको कल्पतरुले तिरहुत र कन्नौजमा संवैधानिक मान्यता प्राप्त गरेको थियो । कर्णाटवंशका अन्तिम राजा हरिसिंहदेवका महासन्धिविग्रहिक मन्त्री चण्डेश्वर ठक्कुर/ठाकुरले सात भागमा तयार गरेको पुस्तक सप्तरत्नाकरले तिरहुतमा निकै प्रसिद्धि पाएको थियो । उनी कर्मादित्यका पनाति, मन्त्रीरत्नाकर देवादित्यका नाति र वीरेश्वर ठाकुरका छोरा थिए । पछि यसै वंशमा वीरेश्वरका भाइ धीरेश्वरको पनाति, जयदत्तको नाति र गणपति ठाकुरको छोरा मैथिली भाषाका महाकवि विद्यापतिको जन्म भएको थियो । चण्डेश्वर ठाकुरले लेखेका शुद्धिरत्नाकर, पुजारत्नाकर, दानरत्नाकर, व्यवहाररत्नाकर, गृहस्थरत्नाकर, कृत्यरत्नाकर र विवादरत्नाकर गरी सप्तरत्नाकर संस्कृत साहित्यमा निकै प्रसिद्ध रहेको छ । ईस्वी सन १३७० मा राजा भएका ओइनवार वंशका भवेश वा भवसिंहको दरबारमा लगभग ८५ वर्षको उमेरमा उनले लेखेका राजनीतिरत्नाकरलाई उनको जीवनको अन्तिम कृति मानिन्छ ।

यी आठवटा रत्नाकरहरुमध्ये १३१४ ईस्वीमा भक्तपुर दरबारमा बसेर लेखिएको मुद्दामामिला छिनोफानो गरी टुंग्याउने विषयसम्बन्धि पुस्तक विवादरत्नाकर हिन्दु कानुन संहिताको रुपमा प्रसिद्ध रहेको छ । कमलकृष्ण स्मृतितीर्थले यस पुस्तकको १९३१ ईस्वीको संस्करण एशियाटिक सोसाइटी अफ बंगालबाट प्रकाशित गर्दा यसको प्रस्तावनामा यसलाई 'मिथिला स्कूल अफ लॉ' भनेका छन् । चण्डेश्वर ठाकुरको यो हिन्दु कानुन संहिताको पुस्तक सर्वप्रथम १८८७ ईस्वीमा दीनानाथशर्मा विद्यालङ्कारले एशियाटिक सोसाइटी अफ बंगालबाट संस्कृत भाषामा प्रकाशित गरेका थिए । 'विवदरत्नाकर अ ट्रीटाइज अन हिन्दु लॉ बाई चण्डेश्वर' नाम दिएर प्रकशित गरिएको सो पुस्तकको प्रस्तावनामा संकलक दीनानाथ शर्माले 'विज्ञापनम्' शीर्षकमा यसप्रकार लेखेका छन् । "विवादरत्नाकाराख्यः स्मृतिनिबन्ध एष प्राचीनः प्रामाणिकश्च विशेषेतो मिथिलाप्रदेशेषु । विलुप्तप्रायमेवेमं मन्यमानायां आसियिक-समितेरभ्यनुज्ञया संशोधनेनं मुद्राङ्कनाय अस्य नियुक्तोऽभवम् । स चाहं तदादेशेन तत्समितेः पुस्तकागारापुस्तकमेकं कालिकाता-संस्कृतविद्यालयस्यं स्मृत्याध्यापक श्रीयुक्तमधुसूदनस्मृतिरत्न महाशयसकाशाद्वितीयं पुस्तकं भूतपूर्व्वपण्डितवर भवशङ्करविद्यारत्नमहाशयस्य दोहित्र-श्रीयुक्ततारापद भट्टाचार्यसकाशातृतीयं पुस्तकं संगृह्य प्रकृष्टप्रयासेन कार्यमेतत्समाहितवान्"(शर्मा, १८८७ ई. प्रस्तावना) । (यो प्राचीन स्मृतिनिबन्ध विशेषगरी मिथिलाप्रदेशमा प्रमाणिक मानिन्छ । प्रायः विलुप्त मानिएको यो पुस्तक प्रकाशनका लागि सम्पादन गर्न एशियाटिक

सोसाइटीद्वारा मलाई नियुक्त गरियो । समितिको आदेशानुसार त्यसको पुस्तकालयमा रहेको एउटा पुस्तक, दोस्रो कलकत्ता संस्कृत विद्यालयको स्मृति विषयको अध्यापक श्रीयुक्त मधुसूदन स्मृतिरत्नसित भएको र तेस्रो भूतपूर्व पण्डित भवशङ्कर विद्यारत्नको छोरी तर्फको नाति श्रीयुक्त तारापद भट्टाचार्यसित भएको पुस्तक निकै कष्टका साथ संकलन गरी यसमा समायोजन गरिएको छ) ।

१८८७ ईस्वीमा पहिलो पल्ट कलकत्ताबाट प्रकाशित यस कानुन संहिताको दोस्रो संस्करण १९३१ ईस्वीमा त्यही सोसाइटीबाट महामहोपाध्याय कमलकृष्ण स्मृतितीर्थको सम्पादनमा प्रकाशित भएको थियो । संस्कृत भाषामा प्रकाशित यस संस्करणको प्रस्तावना स्मृतितीर्थले अंग्रेजी र संस्कृत दुवै भाषामा लेखेका छन् । "विवादरत्नाकर अ ट्रीटाइज अन हिन्दु लॉ बाई चण्डेश्वर ठक्कुर (रि-इस्यु)"को नाउँले प्रकाशित त्यस संस्करणको अंग्रेजी प्रस्तावनामा शक सम्वत १२३६ पौष शुक्लपक्ष (१३१४ ईस्वीको दिसम्वर वा १३१५ ईस्वीको जनवरी)मा वागमती किनारमा तुलापुरुष दान गरी पुस्तक तयार गरेको कुरा लेखेका छन् । विवादरत्नाकरको प्रारम्भमा यसप्रकार लेखिएको छ ।

"श्रीचण्डेश्वरमन्त्रिणा मतिमताऽनेन प्रसन्नात्मना,
नेपालाखिलभूमिपालजयिना धर्म्मेन्दुदुग्धाब्धिना ।
वाग्मत्याः सरितस्तटे सुरधुनीसाम्य दधत्याः शुचौ,
मार्गे मासि यथोक्तपुण्यसमये दत्तस्तुलापुरुषः ॥
यो गम्भीरविवादवारिधि जले निर्मज्जतामुद्धृतिं,
कुर्ब्बन पोत इबोल्लसद्गुणतरुः कीर्ति परामश्नुते ।" (स्मृतितीर्थ, १९३१ ई., पेज १) ।

(प्रसन्न आत्मा मन्त्री श्रीचण्डेश्वरले नेपालका राजाहरुलाई जितेर वागमती नदीको किनारमा मंसिर महिनाको पुण्य समयमा तुलापुरुष दान गरी गम्भीर विवाद सागरको जलबाट निर्मल भई उद्धार (मुक्त) गराउनका लागि यो सद्गुण कीर्ति प्रारम्भ गर्दछ) । उक्त पुस्तकको अन्तमा आफ्ना सप्तरत्नाकरहरुको नाम उल्लेख गरी मिति सहित ग्रन्थ समाप्त गरेको कुरा लेखेका छन् ।

"श्रीकृत्यदानव्यवहारादिशुद्धि-पुजाविवादेषु गृहस्थकृत्ये ।
रत्नाकरा धर्म्मभुवो निबन्धाःकृतास्तुलापुरुषदेन सप्त ॥
रसगुणभुजचन्द्रैः सम्मिते शाकवर्षे सहसि धवलपक्षे वाग्वतीसिन्धुतीरे ।
अदित तुलितमुच्चैरात्मना स्वर्णराशि, निधिरखिलगुणानामुत्तरः सोमनाथ ॥" (शर्मा, १८८७ ई. : ६७१)

(श्री कृत्य, दान, व्यवहार, शुद्धि, पुजा, विवाद र गृहस्थ रत्नाकरहरु गरी सातवटा तुलापुरुष समान धर्मसम्बन्धि निबन्ध कृति ग्रन्थहरु तयार गरें । शक सम्वत १२३६ पौष शुक्लपक्षमा वागमती नदीको किनारमा आफ्नो तौल जतिको स्वर्णराशि उत्तरको सोमनाथ (पशुपतिनाथ) मा चढाएँ) । यस श्लोकबाट प्रष्ट हुन्छ कि चण्डेश्वरले यी सातवटा रत्नाकरहरु समाप्त गरी वागमती किनारमा आफ्नो तौल जतिको सुन दान गरेका थिए । यसरी परम्परागत रुपमा हिन्दु धर्मशास्त्र र स्मृतिग्रन्थहरुमाथि आधारित भई चलिरहेको न्यायिक व्यवस्थामा चण्डेश्वरले नेपाल उपत्यकामा बसेर हिन्दु कानुन संहिताको पुस्तक विवादरत्नाकर १३१४ ईस्वीको दिसम्वर वा १३१५ ईस्वीको जनवरीमा लेखेर समाप्त गरेका थिए । नेपालको मधेश प्रदेशको बारा जिल्लाको सिमरौनगढ त्यसबेला तिरहुत राज्यको कर्णाटवंशका राजाहरुको राजधानी शहरको रुपमा स्थापित थियो । यस राजधानी शहरको महासन्धिविग्रहिक मन्त्री ठक्कुर कुलीन मैथिल ब्राह्मण परिवारमा जन्मेहुर्केका चण्डेश्वरले राम्रो हेरचाह र उच्च शिक्षादीक्षा पाएका व्यक्ति थिए । राजा हरिसिंहदेवको समयमा नेपाल उपत्यकामा भक्तपुरको मल्लवंश र बनेपाको देव नामधारी राजाहरु बिचको द्वन्दबाट तिरहुतले हात हाल्ने मौका पाएका थिए । पहिले बनेपाका जयशक्तिदेव र देउपाटनको गद्दीमा बसेका राजा अनन्तमल्लको पक्षमा लडेर

भक्तपुरको जयतुङ्गमल्ललाई दबाउँदै आईरहेकोमा १३११ ई.को आक्रमणपछि भक्तपुरका जयतुङ्गमल्लकी छोरी देवलदेवीसित राजा हरिसिंहदेवको विवाह भएपछि तिरहुत भक्तपुर दरबारको पक्षमा उभिएका थिए । "यहि सम्बन्ध पर्न गएर नै तेर्हौंतको विजयी सेनाले माथि वर्णित पछिल्लो हमलामा जयशक्तिदेवको पक्षमा नलागि उनकै इलाका बनेपा, साँगा, पलाञ्चोकतिर लुटपिट र विध्वंस मचाएको रहस्य पनि खुल्न आउँछ" (नेपाल, वि.स.२०५४ : पृ. १७४)।

यसप्रकार तिरहुतसितको वैवाहिक सम्बन्धका कारण नेपाल उपत्यकामा शक्तिशाली भएका उपराजा रुद्रमल्लको समयमा भक्तपुर दरबारमा बसेर चण्डेश्वरले यो कानुन संहिता तयार पारेका थिए । चण्डेश्वरले विवादरत्नाकर लेखेको ४० वर्ष पछि १३५४ ईस्वीमा राजा भएका जयस्थितिमल्लले मानवन्यायविकासिनी लेखाएका थिए । "उनले (जयस्थिति मल्लले) स्मृतिग्रन्थहरुका आधारमा न्यायप्रशासनलाई व्यवस्थित तुल्याई कार्यान्यन गर्न, अपराधिहरुलाई दण्डसजाय दिन न्यायविकासिनी (मानवन्यायशास्त्र) मणिक नामका विद्वानलाई लेखाउन लगाए" (श्रेष्ठ, २०२५ ई.) । "राजा जयस्थिति मल्लको शासनकाल वि.स. १४२३ देखि १४५२ सम्म रह्यो । यही शासनकालमा नेपालले धेरै कुरा प्राप्त गर्यो । कीर्तिनाथ उपाध्यायको अध्यक्षतामा रघुनाथ झा मैथिल, श्रीनाथ भट्ट र रामनाथ झाको कानुन आयोग नै बनाई उक्त आयोगको सुझाव सहित देशको कानुनी क्षेत्रमा उनले धेरै काम गरे । ती कामहरु मध्ये महत्वपुर्ण कार्य न्यायविकासिनी एक हो" (खनाल, २०२४ ई. : पृ. ८१-८२) । यसरी नेपालका विद्वानहरुले न्यायविकासिनीको चर्चा गरेपनि विवादरत्नाकरलाई बिर्सेका देखिन्छन् । तर चण्डेश्वरको शैक्षिक परम्परामा दीक्षित विद्वान मणिकले विवादरत्नाकरको उपेक्षा गर्नसक्ने कुनै सम्भावना देखिदैन् । बरु उनले नारद संहिता र विवादरत्नाकरको कानुन संहितालाई आधार मानेर न्यायविकासिनी तयार गरेको देखिन्छ । राजा जयस्थिति मल्लले यिनै कानुन संहिताहरुका आधारमा मैथिल र कान्यकुब्ज ब्राम्हणहरुका साथै लामा धर्मगुरुहरुलाई राखेर सामाजिक स्थिति बाँधेका थिए । उनले नेपालमा सामाजिक आर्थिक सुधार गरी न्यायिक व्यवस्थालाई सुदृढ बनाएका थिए । जयस्थितिमल्ल राजा भएको लगभग अढाई सय वर्षपछि १६०६ ईस्वीमा गोरखाका राजा भएका रामशाहले त्यहाँ पनि सामाजिक आर्थिक सुधार गरी न्यायिक व्यवस्था सुदृढ गरेको इतिहास पाईन्छ । त्यसैले उनको समयमा 'न्याय नपाउनु गोरखा जानु' भन्ने उखान चलेको देखिन्छ । नेपालको न्यायिक व्यवस्थामा प्रथम राणा प्रधानमन्त्री जङ्गबहादुर राणाले वि.स. १९१० (१८५३ ई.) मा मुलुकी ऐन लागु गरेर लिखित कानुनको अभ्यास शुरु गरेका हुन् । वि.स. १९१० (१८५३ ई.) को यस मुलुकी ऐनभन्दा पहिले नेपालमा लेखिएको कानुन संहिता विवादरत्नाकर नै नेपालको पहिलो कानुनको पुस्तक र न्यायविकासिनी दोस्रो पुस्तक रहेको देखिन्छ । १३१४ ई.मा भक्तपुर दरबारमा लेखिएको कानुन संहिता विवाद रत्नाकरले वैधानिक मान्यता नपाएर नेपालमा ओझेलमा पर्न गएपनि भारतमा अंग्रेजको शासनकालदेखी नै कानुनव्यवस्थाको आधारको रुपमा मान्यता पाएको देखिन्छ । अतः यस अध्ययनमा नेपालको यस पहिलो कानुन संहिता विवादरत्नाकरको ऐतिहासिक पृष्ठभूमि, रचनाकार र नेपालको कानुनमा यसको स्थान खोज्ने प्रयास गरिएको छ ।

अध्ययनको उद्देश्य

यस अध्ययनको मूल उद्देश्य नेपालको लिखित कानुनको इतिहासको पृष्ठभूमिमा विवादरत्नाकरको स्थान पत्ता लगाउनु हो । बुँदागतरुपमा यसका उद्देश्यहरुलाई निम्नानुसार उल्लेख गर्न सकिन्छ ।

(क) नेपालभित्र लेखिएको कानुनको इतिहासमा विवादरत्नाकरको खोजी गर्नु ।

(ख) विवादरत्नाकर र यसको रचयिताको परिचय पत्ता लगाउनु ।

(ग) नेपालको कानुनमा यसको स्थान निर्धारण गर्नु ।

अध्ययन विधि

यो नेपालको पुर्वमध्यकालको चौधौं शताब्दीको इतिहाससित सम्बन्धित ऐतिहासिक लेख भएकोले यसका लागि पुस्तकालयीय अनुसन्धान विधिका द्वितीय स्रोतहरु प्रयोग गरिएका छन् । यस लेखमा तत्कालीन ऐतिहासिक स्रोतहरु गोपालराज वंशावली, अभिलेखहरुका साथै देशीविदेशी इतिहासकारहरुले प्रकाशित गरेका सम्बन्धित अनुसन्धानात्मक कार्यका लिखित दस्तावेजहरुलाई प्रयोग गरिएको छ । एशियाटिक सोसाइटी अफ बंगालबाट प्रकाशित विवादरत्नाकरको १८८७ ई. र १९३१ ई.को दुवै संस्करणको अध्ययन गरिएको छ ।

अध्ययनको विश्लेषण

यो एक ऐतिहासिक अनुसन्धान भएकोले यस अनुसन्धानात्मक कार्यमा तत्कालीन इतिहास सम्बन्धि ऐतिहासिक स्रोतहरुबाट प्राप्त तथ्यहरुलाई एक अर्कासित तुलना गरी सत्यतथ्य पत्ता लगाउने प्रयास गरिएको छ । नेपालको चौधौं शताब्दीको राजनैतिक परिवेश र कानुनको विकासक्रमलाई समन्वयात्मक ढंगले तारतम्य मिलाएर कानुनको इतिहासमा विवादरत्नाकरको स्थान खोज्ने प्रयास गरिएको छ । सम्बन्धित तथ्य र तथ्याङ्कहरुलाई समय, ऐतिहासिक पात्र, घटना र त्यसको ऐतिहासिक प्रभावहरुको आधारमा वर्णनात्मक विधिको प्रयोग गरी व्याख्या विश्लेषण गरिएको छ । यसमा ऐतिहासिक अनुसन्धानका लागि प्रयोग गरिने वर्णनात्मक र विश्लेषणात्मक विधिद्वारा निष्कर्ष निकालिएको छ।

नेपालमा कानुनको विकास र विवादरत्नाकर

भारतको प्रमाणिक इतिहास चन्द्रगुप्त मौर्य र चाणक्यको उदयसँगै मौर्यकालदेखि शुरु भए झैं नेपालको प्रमाणिक इतिहास राजा मानदेवको चाँगु अभिलेखबाट शुरु हुन्छ । अतः नेपालको कानुनको इतिहासको खोजी गर्दा मुख्यतः यसै बेलादेखि खोज्नुपर्ने हुन्छ । हुन त नेपालको प्राचीन इतिहास हिन्दु र बौद्ध धर्मग्रन्थहरुका साथै विभिन्न वंशावलीहरुमा आधारित भएकोले त्यसबेलाको कानुन व्यवस्थाको अध्ययन गर्नका लागि यिनै ऐतिहासिक स्रोतहरुमा भरपर्नु पर्छ । हिन्दुहरुका प्राचीन धर्मग्रन्थहरुलाई पनि वैदिककाल, उत्तरवैदिककाल, सूत्रकाल, दर्शनकाल र पौराणिककाल गरी विभिन्न कालखण्डहरुमा विभाजन गरिएको पाइन्छ । ऋग्वेदमा आधारित वैदिकालमा मानव सभ्यताको प्रारम्भिक चरणमा ग्रामीण सभ्यताको वर्णन पाइन्छ भने सामवेद, यजुर्वेद र अथर्ववेदमा आधारित उत्तरवैदिककालमा शहरी सभ्यतातर्फ मानव समाज उन्मुख भएको देखिन्छ । वेदलाई श्रुति भनिएको छ भने धर्मशास्त्रहरुलाई स्मृति भनिएको छ । ज्ञानलाई सूत्रात्मक रुपमा संक्षेपिकरण गरिएको सूत्रकालमा पनि सूत्रहरुलाई श्रौतसूत्र, गृह्यसूत्र र धर्मसूत्र गरी तीन भागमा विभाजन गरिएको पाइन्छ । कर्तव्य र अधिकारको स्पष्ट व्याख्या गरी व्यवहारलाई अनुशासित गर्ने कानुन व्यवस्थाको विकास धर्मसूत्रहरुबाट भएको पाइन्छ । यी धर्मसूत्रहरुमा गौतम ऋषिको न्यायसूत्रको रुपमा प्रसिद्ध गौतम धर्मसूत्र सबभन्दा पुरानो मानिन्छ । "समयको आधारमा गौतमको धर्मसूत्र सबभन्दा प्राचीन छ र बौद्धायनको सूत्रमा यसको एउटा पुरै अध्याय उल्लेख गरिएको पाइन्छ फेरी वशिष्ठले पनि त्यहि अध्याय बौद्धायनबाट उद्धृत गरेका छन् । हामीले यो पनि हेरेका छौं कि आपस्तम्ब बौद्धायन पछिका हुन्" (रमेशचन्द्र दत्त, १९६६ ई.: पृ. ६) । मानव धर्मसूत्रमा आधारित वैवस्वत मनुको रचना मनुस्मृतिको नेपाल भारतमा जतिसुकै आलोचना गरिएको भएपनि बामपन्थीहरुद्वारा जतिपटक जलाइएपनि आज विश्वभरी हिन्दु कानुन संहिताको प्रमुख आधारको रुपमा यस ग्रन्थलाई लिइन्छ । यस सम्बन्धमा रमाशंकर त्रिपाठी लेख्दछन् । "हाल अप्राप्य त्यस मानव धर्मसूत्रको पनि उल्लेख गर्न सकिन्छ जसको आधारमा पद्यात्मक मानव धर्मशास्त्र(मनुस्मृति) को निर्माण गरिएको थियो । यो मानव धर्मशास्त्र व्यवहार(कानुन) र वैज्ञानिक आचरणका लागि आज पनि प्रमाणिक रहेको छ" (त्रिपाठी, १९६८ ई. : पृ. ४८) । "स्मृति ग्रन्थहरुमा सर्वोच्च स्थान मनुस्मृतिलाई दिइन्छ । यसको प्रणेता सृष्टिको आदिमा विराट पुरुषबाट उत्पन्न भएका मानव जातिका आदिपुरुष मनुलाई मानिन्छ ।

तर यसको आन्तरिक साक्षीबाट पनि यो सिद्ध हुन्छ कि यो दोस्रो शताब्दी ई.पु.को रचना हो, किनभने यसमा शुंगकालको आदर्श र विचारहरुलाई निकै उग्र रुपमा वर्णन गरिएको पाइन्छ । मनुस्मृतिको १२ अध्यायहरुको २६९४ श्लोकहरुमा भारतीय समाजसित सम्बन्धित सबै विषयहरु- वर्ण, धर्म, संस्कार, आश्रम, गृहस्थको नियम, राजधर्म, न्याय, शासन सम्बन्धि राजाका कर्तव्यहरु, विभिन्न प्रकारका व्यवहारहरु तथा कानुनी विषयहरु, कम्बोज, यवन, शक, पहलव, आदि विदेशी तथा वर्णसंकर जातिहरुका नियमहरु तथा कर्मको सिद्धान्तलाई विवेचना गरिएको छ" (हरिदत्त वेदालंकार, १९७२ ई. : पृ.३०२) । "मनुस्मृतिको सर्वप्रथम मुद्रण १८१३ ई.मा कलकत्तामा भएको थियो । त्यसपछि यसका यति संस्करणहरु प्रकाशित भए कि उनको नाम उल्लेख गर्न यहाँ सम्भव छैन् । यसको अंग्रेजी अनुवाद पनि धेरै पटक भइसकेको छ । डा.बुहलरको अनुवादलाई सर्वश्रेष्ठ मानिन्छ । मनुस्मृतिको प्रणयन कसले गरे यो भन्न कठीन छ । यो सत्य छ कि मानवका आदि पुर्वज मनुले उसका प्रणयन गरेका होइनन् । यसका प्रणेताले आफ्नो नाम किन लुकाए यो भन्न अप्ठ्यारो छ । हुनसक्छ कि यस महान ग्रन्थलाई प्राचीनता र प्रमाणिकता दिनका लागि नै यसलाई मनुकृत गरिएको हो" (काणे, १९८० ई. : पृ. ४२-४३) । "मनुस्मृतिमाथि थुप्रै टीकाग्रन्थहरु विद्यमान रहेको छ । मेधातिथिको टीका नवौं शताब्दीभन्दा पछिको होइन, गोविन्दराजको बारहौं शताब्दीको हो र लोकप्रिय कुल्लुक भट्ट त्यसपछिको पन्ध्रौं शताब्दीसित सम्बन्धित छ । यस स्मृतिको प्रभाव बर्मा, स्याम (थाइलैण्ड) र जावामा यसलाई प्रमाणिक मानिन्छ । यो कुरा यस ग्रन्थको आधारमा अन्य ग्रन्थहरुको निर्माण गरिएबाट सिद्ध हुन्छ" (ए.बी.कीथ अनुवादक मङ्गलदेव शास्त्री, १९७८ ई. : पृ. ५६०) । उनले मनुस्मृतिका साथै अन्य स्मृतिहरुको पनि उल्लेख गरेका छन् । "अन्य स्मृतिहरु अनिश्चित संख्यामा उपलब्ध छन् । एउटा सूचिमा १५२ वटाको उल्लेख गरिएको छ" (ऐजन, पृ. ५६३) । काणेले केही प्रमुख स्मृतिहरुको नाम यसप्रकार उल्लेख गरेका छन् । "१८ मुख्य स्मृतिकारहरु यी हुन्- मनु, बृहस्पति, दक्ष, गौतम, यम, अंगिरा, योगिश्वर, प्रचेता, शातातप, पराशर, संवर्त, उशना, शंख, लिखित, अत्रि, विष्णु, आपस्तम्ब र हारीत" (काणे, १९८० ई : पृ. ४०) । यी स्मृतिहरुमध्ये मनुस्मृतिपछि याज्ञवलक्यस्मृति निकै महत्वपुर्ण मानिन्छ । "याज्ञवलक्य स्मृतिमाथि अनेकौं टीकाग्रन्थहरु छन् । जसमा विश्वरुप, विज्ञानेश्वर, अपरार्क एवं शूलपाणि धेरै प्रसिद्ध रहेको छ । आधुनिक भारतमा विज्ञानेश्र लिखित मिताक्षरामाथि आधारित व्यवहार(कानुन) को निकै प्रचलन छ । त्यसकारण याज्ञवलक्यलाई अधिक गौरव प्राप्त छ" (ऐजन, पृ. ५४) ।

यसप्रकार संस्कृत साहित्यका सूत्र र स्मृतिग्रन्थहरुमा न्यायकानुनको प्राचीन रुप पाउन सकिन्छ । लिच्छविकालीन राजाहरुद्वारा जारी गरिएका आज्ञा, आदेश, परमादेश, सनदहरुको अभिलेखहरुमा उल्लेखित शास्त्रानुशी र धर्मशास्त्र बचनं जस्ता शब्दहरुले यिनै धर्मशास्त्रहरुमा उल्लेखित कानुनी प्रावधानहरु तर्फ संकेत गरेको पाइन्छ । अर्थात लिच्छविकालको शासनव्यवस्था र नियमकानुनहरु यिनै धर्मशास्त्रहरुमाथि आधारित थिए । मध्यकालसम्म आइपुग्दा यी स्मृतिहरुमाथि आधारित निबन्धहरु लेखिन थालियो । "बारहौं शताब्दीदेखि राजाहरुका आदेशमा तयार गरिएका यस्ता धर्मनिबन्धहरु पाइन्छन् । प्राचीनतम निबन्धहरुमध्ये एक स्मृतिकल्पतरु हो, जसको रचना कन्नौजको राजा गोविन्दचन्द्र (११०५-४३ ई.) को परराष्ट्र मन्त्री लक्ष्मीधरले गरेका थिए । यसमा धर्म विधि, व्यवहार विधि, दण्डविधि र प्रक्रियाहरु सम्मिलित छन् । बंगालका राजा लक्ष्मणसेनका लागि हलायुधद्वारा लेखिएको ब्राह्मणसर्वस्वमा ब्राह्मणको समस्त कर्तव्यहरुको निरुपण गरिएको छ । यसलाई केही अंशमा विधिग्रन्थ (Lowbook) भन्न सकिन्छ । हरिसिंहदेव (लगभग १३२५ ई.) को मन्त्री चण्डेश्वरको स्मृतिरत्नाकर र मिथिलाको हरिनारायण (लगभग १५१० ई.) का लागि लेखिएको वाचस्पतिको चिन्तामणि आदि अनेकौं स्मृति निबन्धग्रन्थहरु रहेका छन्" (कीथ, १९७८ ई. : पृ. ५६४-५६५) । पि.भी. काणेले चण्डेश्वरलाई मिथिलाका धर्मशास्त्रीय निबन्धकारहरुमध्ये सर्वश्रेष्ठ मानेका छन् ।

उनी लेख्दछन्, "मिथिलाका धर्मशास्त्रीय निबन्धकारहरुमा चण्डेश्वर सर्वश्रेष्ठ छन् । उनको स्मृतिरत्नाकर वा मात्र रत्नाकर एक विस्तृत निबन्ध ग्रन्थ हो । यसमा कृत्य, दान, व्यवहार, शुद्धि, पूजा, विवाद एवं गृहस्थ नाउँका सातवटा अध्यायहरु रहेका छन् । तिरहुतमा हिन्दु व्यवहारहरु (कानुनहरु) का लागि विवादरत्नाकर एवं वाचस्पतिको विवादचिन्तामणिलाई प्रमाणिक ग्रन्थ मानिन्छ । कृत्यरत्नाकरमा २२ तरंग, गृहस्थरत्नाकरमा ६८ तरंग, दानरत्नाकरमा २९ तरंग विवादरत्नाकरमा १०० तरंग शुद्धिरत्नाकरमा ३४ तरंगहरु रहेका छन् । चण्डेश्वर राजमन्त्री थिए । उनले नेपाल विजय गरेर आफुलाई सुनमा तौलेर पशुपतिमा दान दिएका थिए । यिनको समय चौधौँ शताब्दीको पहिलो चरण हो चण्डेश्वरले मैथिल एवं बंगाली लेखकहरुमाथि निकै प्रभाव पारेका छन् । मिसरु मिश्र, वर्धमान, वाचस्पति मिश्र एवं रघुनन्दनले यिनलाई धेरै पल्ट उल्लेख गरेका छन् । वीरमित्रोदयले रत्नाकरलाई पौरस्त्य निबन्ध (पुर्वीय निबन्ध) भनेका छन्" (काणे, १९८० ई. : पृ. ८४-८५) ।

यसप्रकार मध्यकालमा नेपाल, मिथिला र बंगालको कानुन साहित्यमा चण्डेश्वरको यो रत्नाकर निबन्ध ग्रन्थको निकै ठूलो प्रभाव रहेको कुरा ए.बी. कीथ, पि.भी. काणे लगायतका देशीविदेशी विद्वानहरुले लेखेका छन् । तर नेपाली इतिहासकारहरुले विवादरत्नाकरभन्दा ६५ पछि लेखिएको न्यायविकासिनीलाई नेपालको पहिलो कानुन संहिता मानेका छन् । विष्णुप्रसाद खनालले त यस न्यायविकासिनीलाई विश्वकै पहिलो लिखित कानुनको संज्ञा दिएका छन् जबकी त्यो नेपालको पनि पहिलो कानुन नरहेको देखिन्छ । "नेपाल संवत ५०० विक्रम संवत १४३६ र ई.स. १३८० मा जारी भएको उक्त कानुन विश्वमा पहिलो लिखित कानुन मानिएको फ्रान्सको नेपोलियन सिविलकोडभन्दा झण्डै ५०० वर्ष पुरानो मानिएको छ । यस अर्थमा पनि विश्वको पहिलो स-विस्तार कानुनका रुपमा यसलाई लिन सकिन्छ" (खनाल, २०२४ ई. : पृ.) । त्यसैगरी पुरुषोत्तमलोचन श्रेष्ठले पनि यसलाई नेपालका साथै विश्वको सर्वप्राचीन संहिता मानेका देखिन्छन् । "नेपालको कानुनी इतिहासको दृष्टिले यो नेपालको पहिलो संहिताबद्ध लिखित कानुन हो, पहिलो मुलुकी ऐन हो, पुर्ण कानुन हो । विश्व इतिहासको दृष्टिले मेसोपोटामिया सभ्यताकालीन शिलाफलकमा उत्कीर्ण उर-नम्मू संहिता (Code of Ur-Nammu, ई.पू. २१००-२०५०) लाई विश्वकै सबभन्दा पुरानो संहिता मानिएको छ । विचारणीय कुरा के छ भने हाम्रो न्यायविकासिनी भुर्जिमोल लिपिमा ताडपत्रमा लेखिएको हस्तलिखित ग्रन्थ हो । यस दृष्टिले यसलाई यस विषयको विश्वकै सर्वप्राचीन संहिता हो भन्ने मान्न सकिन्छ" (श्रेष्ठ, २०२५) । तर उनीहरुले मणिकभन्दा पहिले तेरहौँ शताब्दीको अन्तमा नेपालको सिमरौनगढको मन्त्री परिवारमा जन्मेर भक्तपुरको युथुनिममा बसेर महान स्मृतिकार चण्डेश्वर ठाकुरले लेखेका विवादरत्नाकरलाई बिर्सेका छन् । जबकी मिथिलाका चर्चित विद्वान वर्षकृत्यका रचयिता रुद्रधर झा, शमशुद्दीन इलियाँसले तीन टुक्रा पारेका नेपालको पशुपतिनाथको मूर्तिलाई जयसिंह रामवर्धनले पुनःप्राणप्रतिष्ठा गराउँदा पुरोहितको भूमिका निर्वाह गर्ने राजपति शर्मा, न्यायविकासिनीका सम्पादक मणिक आदी विद्वानहरु चण्डेश्वरकै विद्वत परम्परामा दीक्षित भएको कुरा मिथिलाका इतिहासमा पाइन्छ (कर्ण, अप्रकाशित पुस्तक : पृ. १८१) । यसरी चण्डेश्वरको विद्वत परम्परामा दीक्षित मणिकले १०० तरंगको विवाद रत्नाकरलाई १९ प्रकरणमा सीमित गरी जयस्थितिमल्लको समयमा न्यायविकासिनीको सम्पादन गरेको देखिन्छ ।

स्मृतिकार चण्डेश्वर ठाकुर र उनको स्मृति निबन्ध विवादरत्नाकर

"चण्डेश्वर कर्णाटवंशी राजा हरिसिंहदेवका प्रमुख सेनानायक, मन्त्री तथा धर्माधिकारी र विद्वान पनि थिए । यिनले रचना गरेका व्यवहार रत्नाकर, कृत्यरत्नाकर, विवादरत्नाकर, दानरत्नाकर, शुद्धिरत्नाकर, गृहस्थरत्नाकर र पूजारत्नाकर गरी सात रत्नाकरहरु र कृत्यचिन्तामणि, दासमोक्षविधि, स्वामीपालविवाद तरङ्ग आदि अनेक ग्रन्थहरु पाइएका छन्" (खनाल, वि.स. २०५६ : ७५) । महासन्धिविग्रहिक देवादित्य ठाकुरको तेस्रो पुस्ताका व्यक्ति स्मृतिकार चण्डेश्वर ठक्कुर उक्त पदलाई सुशोभित गर्ने महान कुटनीतिज्ञ, कुशल

राजनेता र नेपाल विजय गर्ने महान विजेता थिए । कुलक्रमानुगत रुपमा उक्त स्थान प्राप्त गर्ने चण्डेश्वर ठक्कुर वीरेश्वरका छोरा, देवादित्यका नाति र कर्मादित्यका पनाति थिए । यस चण्डेश्वरको सम्बन्धमा नेपाली र मैथिली दुवै ऐतिहासिक स्रोतहरुमा उल्लेख गरिएको पाइन्छ । भारतीय विद्वान पण्डित कमलकृष्ण स्मृतितीर्थ लेख्दछन् ।

> "Candesvara Thakkura was a Maithili Brahmana and flourished during the period of Karnata dynasty of Mithila ..... He succeeded his father and was Sandhi Bigrahik, a joint post of minister of peace and war, ... He conducted successfully an expedition to Nepal and established there the supremacy of Harasingh Deva reffered to later on in this preface. He was the first Brahmana from an outside territory who touched and worshiped the celebrated Deity "Pashupatinatha of Nepal". (Kamal Krshna Smrititirtha, 1925 : p. V)

त्यसैगरी नेपाली इतिहासकार ज्ञानमणि नेपाल लेख्दछन्, "यतिबेला तेर्हौंत राज्यको सिम्रौनगढको सिंहासनमा हरसिंहदेव विराजमान थिए । उनको मन्त्रीपरिषदमा वरिष्ठ मन्त्रीहरुमा मुख्य सन्धिविग्रहिक मन्त्री चण्डेश्वर ठक्कुर थिए । यिनको यो पद पुस्तैनी थियो । उनका बाबु वीरेश्वर र बाजे देवादित्य पनि यस दरबारमा यहि पदमा थिए । चण्डेश्वर ठुला विद्वान थिए । यिनले धर्मशास्त्रका सात रत्नाकर समेत अरु पनि अनेक ग्रन्थ लेखेका थिए । यिनी शास्त्रमा मात्र होइन शस्त्रमा पनि उत्तिकै अरु पारंगत थिए । नेपालमा चढाइ गर्दा हरसिंहदेवको तेर्हौंते सैनिकको नेतृत्व यिनै महामन्त्री चण्डेश्वर ठक्कुरले गरेका थिए" (नेपाल, वि.स. २०५४ : पृ. १५४) । "विवादरत्नाकरमा चण्डेश्वरले आफुलाई नेपालका सारा राजाहरुलाई जितेका, बुद्धिमान, प्रसन्न चित्त भएका, धर्ममा सँधै मन दिने मन्त्री श्री चण्डेश्वरले गंगा जस्तो पवित्र वाग्मती नदीको तीरमा शाके सम्वत १२३६ (१३१४ ई.) मा तुलादान गरे भनी लेखेका छन् । यसैगरी गोपालराज वंशावलीमा राजग्राम कब्जा गरेको प्रसंगमा चण्डेश्वरको उल्लेख आएको छ । यसको अतिरिक्त हरसिंहदेवको सेनाको दलमुखी भएर चण्डेश्वरले नेपालमा लगभग एक वर्षसम्म शासन चलाएका थिए । लगभग त्यसैताका यिनले पशुपतिलाई पूजा गरी दानधर्म गरेका थिए भन्ने देखिन्छ" (खनाल, वि.स. २०५६ : ७५) । "विद्वान मन्त्री चण्डेश्वरले वि.स. १३७१(१३१४ ई.) को मंसिर महिनाको पुण्य तिथिमा वाग्मतीको किनारमा आफु जत्रै सुन जोखेर तुलादान दिए र पोखरी खनाएर धर्मकर्ममा खर्च गरेर हिन्दु आदर्शलाई चरितार्थ गरे" (नेपाल, २०५४ : १५७) । यस कुराको पुष्टि उनको प्रसिद्ध ग्रन्थ विवादरत्नाकरबाट हुन्छ ।

१०९७ ई.मा नान्यदेवले स्थापित गरेको तिरहुतको कर्णाटराज्यको प्रशासनिक सुदृढिकरणका लागि उनका छोरा गंगदेवले राज्यलाई विभिन्न ग्राम र प्रगन्नाहरुको प्रशासनिक इकाईहरुमा विभाजन गरेका थिए । राजा नरसिंहदेवको समयदेखि कन्नौजका राजा गोविन्दचन्द्र गाहडवालको सन्धिविग्रहिक मन्त्री लक्ष्मीधर भट्टले तयार गरेका सत्रह भागहरुमा विभाजित कल्पतरु नाउँको हिन्दु धर्मशास्त्रहरुमाथि आधारित निबन्ध ग्रन्थले तिरहुतमा कानुनी मान्यता पाएको थियो । पछि राजा शक्तिसिंहदेवको समयमा पिता वीरेश्वर ठाकुरको जीवनकालमा नै चण्डेश्वर ठाकुरको अगुवाइमा राजाको शक्तिमाथि अंकुश लगाउन सात सदस्यीय परिषदको गठन गरिएको थियो । "चण्डेश्वर आफ्नो समयको प्रकाण्ड विद्वान र राजनीतिज्ञ थिए । उनले राजाको अधिकार र शक्तिमाथि अंकुश लगाउनका लागि महत्वपुर्ण भूमिका निर्वाह गरे । मिथिलाको इतिहासमा उक्त घटना आफ्नो किसिमको पहिलो घटना थियो" (ठाकुर, १९९२ ई., पेज १७४-७५) । "राजाको निरंकुशताको विरोधमा सर्वप्रथम चण्डेश्वर ठक्कुरले आवाज उठाएका थिए । उनी आफ्नो समयको एउटा प्रसिद्ध विद्वान र राजनीतिज्ञ थिए" (चौधरी, २०१० ई., पेज ७८) । यसप्रकार राजा शक्तिसिंहदेवको समयमा १५/१६ वर्षको

कलिलो उमेरमा नै राजाको शक्तिमाथि अंकुश लगाउन रक्तपातरहित राजप्रसादीय क्रान्ति ल्याउन सफल, महान राजनीतिज्ञ, कानुनविद चण्डेश्वर ठक्कुर राजा हरिसिंहदेवको समयमा आफ्नो शासनको उत्कर्षमा पुगेका थिए । १३११ ईस्वीमा नेपाल उपत्यका विजय गरेका चण्डेश्वरले १३११ ई. देखि १३१४ ईस्वीसम्म नेपालमा बसेर भक्तपुर राजदरबारको पवित्र भूमिमा नेपालको कानुनी इतिहासको पहिलो पुस्तक विवादरत्नाकर तयार पारेका थिए । उक्त पुस्तकमा देवानी र फौजदारी कानुनको व्यवस्थाका साथै देवानी संहिता अन्तर्गत सम्पति उत्तराधिकार र अन्य देवानी कानुन सम्बन्धि व्यवस्थाहरु समावेश गरिएका छन । फौजदारी कानुन अन्तर्गत हत्या, बलात्कार, चोरी, ठगी, अपहरण अप्राकृतिक यौनसम्बन्ध सम्बन्धि कानुनी प्रावधानहरु राखिएका छन् । त्यसैगरी निर्णय प्रक्रिया अन्तर्गत कानुनी कारवाहीका साथै दण्डविधान सम्बन्धि व्यवस्था राखिएको छ । यस ग्रन्थको सम्बन्धमा चण्डेश्वर ठाकुर स्वयंले ग्रन्थको प्रारम्भ र अन्तमा यसप्रकार लेखेका छन् ।

"शतमेकं तरंगाणां विदुषां चितरञ्जनम् । विधियते विधिज्ञेन श्रीचण्डेश्वरमन्त्रीणा ॥"

(विद्यालंकार, १८८७ ई., पेज ४) । यस ग्रन्थको उपसंहारको समापनमा यसप्रकार लेखेका छन् ।

"रसगुणभुजचन्द्रैः सम्मिते (१२३६) शाकवर्षे । सहसि धवल पक्षे वाग्मती सिन्धुतीरे ॥
अदित तुलित मुच्चैरात्मना स्वर्णराशिं । निधिरखिल गुणानामुत्तरः सोमनाथः ॥
इतिसप्रक्रियमहासन्धिविग्रहिकठक्कुर मन्त्रिवर-श्रीवीरेश्वरात्मज
सप्रक्रियमहासन्धिविग्रहिक ठक्कुर चण्डेश्वर-
विरचितो विवादरत्नाकरः सम्पुर्णः"

(ऐजन पेज ६७१)

त्यसैगरी उक्त पुस्तकको अन्तमा 'शक सम्वत १२३६ को पुस शुक्लपक्ष (१३१४ ईस्वीको दिसम्वर वा १३१५ ईस्वीको जनवरी)मा आफ्नो तौल जतिको स्वर्णराशि तुलापुरुष अखिल विश्वमा उत्तरको सोमनाथ(पशुपतिनाथ)मा वाग्मतीको किनारमा दान गरे' लेखी ग्रन्थ समाप्त गरेका छन् । त्यति मात्र होइन की उनले मिथिलामा समृद्ध विद्वत परम्परा चलाएका थिए । नेपालका श्रीपति शर्मा, राजपति शर्मा, मणिक मिथिलाका रुद्रधर झा, मिसरु मिश्र, वाचस्पति मिश्र, महाकवि विद्यापतिका साथै बंगालका रघुनन्दन भट्टाचार्य जस्ता विद्वानहरु यसै परम्परामा दीक्षित भएका देखिन्छन् । १३२७ ई.मा सिमरौनगढको पतन भएपछि यहाँका विद्वानहरु नेपाल, बंगालतर्फ पलायन गरेको भएपनि पछि ओइनवारवंशको संरक्षणमा फेरी यस परम्पराले स्थान पाएको थियो ।

कानुन संहिता विवादरत्नाकर

माथिको छलफलबाट प्रष्ट भइसकेको छ कि नेपालमा प्राचीनकालदेखि मध्यकालसम्म हिन्दु धर्मशास्त्र र स्मृतिग्रन्थहरुको आधारमा न्याय सम्पादन गरिन्थ्यो । यी धर्मसूत्र र स्मृतिग्रन्थहरुले कानुनी साहित्यको स्थान प्राप्त गरेको परिवेशमा दशौं बारहौं शताब्दीदेखि स्मृतिनिबन्धहरु लेखिन थालियो । यी स्मृति निबन्धहरुमध्ये सम्पत्ति उत्तराधिकार सम्बन्धि विज्ञानेश्वरको याज्ञवल्क्य स्मृतिमाथिको टीकाग्रन्थ मिताक्षरा र जिमुतवाहनको दायभागले हालसम्म पनि हिन्दु सम्पति उत्तराधिकार कानुनको मार्गदर्शकको स्थान प्राप्त गर्न सफल देखिन्छन् । कन्नौजका लक्ष्मीधरको १७ भागमा लेखिएको स्मृति निबन्ध ग्रन्थ कल्पतरुले मिथिलामा पनि वैधानिक मान्यता प्राप्त गरेको कुरा मिथिलाको इतिहासमा पाइन्छ । पछि राजा हरिसिंहदेवको समयमा उनका महासन्धिविग्रहिक मन्त्री चण्डेश्वर ठक्कुरले सात भागमा सप्तरत्नाकर स्मृति निबन्ध तयार गरेका थिए । नेपालको राष्ट्रिय अभिलेखालयमा पाइएको न्यायविकासिनी ग्रन्थ चण्डेश्वरको रत्नाकरपछि लेखिएको कुरा यसको पुष्किावाक्यबाट प्रष्ट हुन्छ । "स्वस्ति श्री नेपालिक संवत्सरे ५०० फाल्गुण शुक्ल तृतीयायां गुरुवासरे श्रीश्री जयस्थिति राज मल्लदेवस्य विजयराज्ये भक्तपुरे अमात्य जयतवर्मणः पुष्टकमिदमलेखि श्री कीर्तिपुण्य

महाविहाराधिवासिना शाक्यभिक्षु बज्राचार्य लुन्तभद्रेनेति ॥ शुभमस्तु सर्वजगताम" (श्रेष्ठ, २०२५) । ने.स. ५०० (१३८० ई.) मा राजा जयस्थितिमल्लको समयमा भक्तपुरका अमात्य जयत वर्माका लागि श्रीकीर्तिपुण्य महाविहारका लुन्तभद्र बज्राचार्यद्वारा न्यायविकासिनी सार्ने काम भएको थियो । यी दुवै ग्रन्थहरुमध्ये विवादरत्नाकरले नेपाल, मिथिला र बंगालमा निकै प्रसिद्धि पाएका थिए । नेपालको भक्तपुर राजदरबारमा बसेर लेखिएको यस ग्रन्थमा प्रमुख रुपमा देवानी र फौजदारी कानुनका साथै सम्पत्ति उत्तराधिकार कानुन र कानुनी विधि प्रक्रियाहरुलाई समेटिएको पाइन्छ । जसलाई भारतमा ब्रिटिश शासनकालमा पनि अंग्रेजहरुले समेत प्रशंसा गरेका थिए । चण्डेश्वरको यस विवादरत्नाकरको १९३१ ई.को संस्करणको प्रस्तावनामा सम्पादक कमलकृष्ण स्मृतितीर्थले यस कानुनी ग्रन्थलाई तत्कालिन ब्रिटिश सरकारले उत्तराधिकार सम्बन्धि असल कानुनको रुपमा टेरीटोरियल एक्टमा स्थान दिएको कुरा लेखेका छन् । "There are hundred chapters in all in the present work, the civil portion of which deals with inheritance which is now good low, and with other civil matters concerning which the prescriptions have now been superseded by the territorial Acts of British India. उनको यो विवादरत्नाकर सम्पत्ति उत्तराधिकार सम्बन्धि कानुन 'मिथिला स्कूल अफ लॉ' को रुपमा चिनिन्छ । चण्डेश्वरको यस कानुनको किताबमा राखिएको कानुनी प्रावधानहरुलाई मुख्य गरी देवानी कानुन, फौजदारी कानुन र न्यायिक निर्णय प्रक्रिया शीर्षकमा समेट्न सकिन्छ ।

विवादरत्नाकरमा समावेश गरिएका देवानी कानुन सम्बन्धि प्रावधानहरु

यस कानुन संहिताको प्रारम्भमा नै देवानी कानुन सम्बन्धि प्रावधानहरु राखिएका छन् । जस अन्तर्गत खासगरी दायभाग र अन्य देवानी न्याय सम्बन्धि व्यवस्थाहरु समेटिएका छन् । चण्डेश्वरको उत्तराधिकार कानुनलाई पनि दायभाग र जिवित पितृका विभाग गरी दुई समूहमा समूहिकरण गर्न सकिन्छ । देवानी व्यवस्था अन्तर्गत ऋणको ब्याज, मिश्र ब्याज, चल अचल सम्पत्तिको धित्तो जमानी, सम्पतिमाथिको वास्तविक अधिकार, चुक्ता गर्न नपर्ने ऋण, जमानी, अधिकारबिनाको बिक्रि, शेयरधनीहरुमा लाभांश वितरण सम्बन्धि, सेवासम्झौता अनुसारको कार्यसम्पादन नभएमा, सेवाको निरन्तरता सम्बन्धि, बेठबेगारी, वेश्यावृत्तिको निर्धारण सम्बन्धि नियम, चौपाया र उसको स्वामीत्व सर्म्बन्धि, खरिदबिक्रि, सीमाविवाद, खेतीहर जग्गाको साँधसीमाना, लिजमा खेती र बालिसंरक्षण आदि व्यवस्थाहरुलाई समेट्ने प्रयास गरेको छ । विवादरत्नाकरमा निम्नानुसार देवानी कानुन सम्बन्धि व्यवस्थाहरु समावेश गरिएका छन् ।

तरंग(अध्याय)	प्रावधान	तरंग(अध्याय)	प्रावधान
१	ऋणदिने(लगानी गर्ने) सम्बन्धि व्यवस्था	२	ब्याज वा निर्ब्याजी सम्बन्धि
३	चक्रवृद्धि ब्याज सम्बन्धि व्यवस्था	४	ब्याज निषेध सम्बन्धि व्यवस्थ
५	बन्धक र बन्धक लिलाम सम्बन्धि व्यवस्था	६	धितो (ग्यारेन्टी) सम्बन्धि व्यवस्था
७	ऋण दिने प्रक्रिया	८	ऋण असुली सम्बन्धि व्यवस्था
९	निक्षेप सम्बन्धि व्यवस्था	१०	अधिकार बिक्रि सम्बन्धि
११	स्व आर्जन सम्बन्धि	१२	दाता र दान सम्बन्धि
१३	स्याहारसुसारका लागि उपस्थित हुने र शुश्रुषा गर्ने सम्बन्धि	१४	दास मोक्ष विधि
१५	दास अधिकार विधि	१६	वेतन(तलब) निर्धारण प्रकृया
१७	दासी सम्बन्धि	१८	स्वामीपाल विवाद सम्बन्धि
१९	संवेदनशील विषय सम्बन्धि	२०	क्रयबिक्रय सम्बन्धि

फौजदारी कानुन सम्बन्धि व्यवस्था

उनको फौजदारी कानुन अन्तर्गत हत्या, बलात्कार, चोरी, गलत मनसायले छामछुम गर्ने, ठगी, अपहरण, अप्राकृतिक यौनकार्य आदि अपराधहरु सम्बन्धि न्यायको व्यवस्था गरेको देखिन्छ । यस संहितामा तरंग ३० देखि तरंग ४३ सम्म फौजदारी कानुन सम्बन्धि प्रावधानहरु समावेश गरिएका छन् ।

तरंग(अध्याय)	**प्रावधान**	**तरंग(अध्याय)**	**प्रावधान**
३०.	चोरी सम्बन्धि	३१.	डकैती सम्बन्धि
३२.	प्रकाशतस्कर(शुद्ध चोरी) सम्बन्धि	३३.	अप्रकाशतस्कर(ठगी) सम्बन्धि
३४.	चोरीको अनुसन्धान सम्बन्धि	३५.	चोरी गर्न निर्देशन दिने(उक्साउने/प्रेरित गर्ने)
३६.	वर्णविशेष अनुसार चोरीको दण्ड सम्बन्धि	३७.	चोरीको लाभपक्षहरु सम्बन्धि
३८.	हत्या, बलात्कार जस्ता जघन्य अपराध गर्ने दुस्साहस सम्बन्धि	३९.	घातक प्रहार अनुसन्धान सम्बन्धि
४०.	धनसंग्रह सम्बन्धि	४१.	बलात्कार स्त्रीहरण दण्ड सम्बन्धि
४२.	कन्यादुषण(केटीलाई) दुषित गर्ने अपराध	४३.	बलात्करको उद्देश्यले गरिने बन्धक सम्बन्धि

कार्यविधि कानुन सम्बन्धि व्यवस्था

यस संहितामा मात्र दश वटा तरंगहरुमा मुद्दाको छिनोफानो गरी टुंगो लगाउने अदालती प्रक्रिया सम्बन्धि कार्यविधि कानुनको व्यवस्था गरिएको छ । जसमा खासगरी वाकपुरुष, दण्डपुरुष, दण्ड निर्धारण दण्ड संशोधन, दण्ड छुट सम्बन्धि व्यवस्थाहरु समेटिएका छन् ।

तरंग(अध्याय)	**प्रावधान**	**तरंग(अध्याय)**	**प्रावधान**
२६.	बालीनाश गर्नेको दण्ड सम्बन्धि	२७.	दण्डसजाय सम्बन्धि
२८.	वाकपुरुष (पञ्च) सम्बन्धि	२९.	दण्डपुरुष सम्बन्धि
९४.	दण्ड निर्धारण सम्बन्धि	९५.	दण्ड संशोधन सम्बन्धि
९६.	ब्राम्हणको दण्ड परिहार(छुट) सम्बन्धि	९७.	नगर परिहार सम्बन्धि
९८.	दण्डसंज्ञा सम्बन्धि	९९.	मानसंज्ञा सम्बन्धि

निष्कर्ष

नेपालको कानुनको इतिहासको अध्ययन गर्दा सर्वप्रथम वि.स. १९१० (१८५३ ई.) मा जङ्गबहादुर राणाले मुलुकी ऐन लागु गरेर कानुनी अभ्यासको शुरुवात गरेको भएपनि नेपालमा प्राचीनकालदेखि नै हिन्दु धर्मशास्त्र स्मृति निबन्ध ग्रन्थहरुमाथि आधारित कानुनी अभ्यास रहेको कुराको पुष्टि लिच्छविकालका अभिलेखहरुबाट हुन्छ । यी लिच्छवि राजाहरुले आज्ञा, आदेश, परमादेश, सनदहरु जारी गर्दा ती धर्मशास्त्रहरुको आधार लिने गरेका थिए । पुर्वमध्यकालमा पश्चिमको खसराज्य र दक्षिणको कर्णाटराज्य उन्नतिको शिखरमा पुगेका थिए । यसैबेला तेरहौं शताब्दीको उत्तरार्धमा नेपालको सिमरौनगढ राजदरबारको मन्त्री परिवारमा जन्मेहुर्केका स्मृतिकार चण्डेश्वर ठक्कुरले १३१४ ई. को अन्तमा लेखेका विवादरत्नाकर हिन्दु कानुन संहिताको रुपमा सम्पुर्ण भारतीय उपमहाद्विपमा प्रसिद्ध रहेको कुरा यसको १९३१ ई. को संस्करणको भुमिकामा कमलकृष्ण स्मृतितीर्थले गरेको यसको वर्णनबाट प्रष्ट हुन्छ । यसको सम्पत्ति उत्तराधिकार सम्बन्धि कानुनी प्रावधानहरुलाई ब्रिटिश साम्राज्यमा पनि असल कानुनको रुपमा टेरिटोरियल एक्टमा अंग्रेजहरुले स्थान दिएको कुरा स्मृतितीर्थले सो पुस्तकको भुमिकामा लेखेका छन् । तर दुःखका साथ भन्नुपर्छ कि नेपालको

कानुन साहित्यमा यसको ६५ वर्षपछि लेखिएको न्यायविकासिनीको चर्चा गरिएपनि विवादरत्नाकरको चर्चा सुनिदैन । मध्यकालमा सामाजिक आर्थिक सुधार गर्दा राजा जयस्थितिमल्लले न्यायविकासिनी लेखाउन लगाएका थिए । उनको उक्त ग्रन्थ तयार पार्ने विद्वान मणिक चण्डेश्वरकै विद्वत परम्परामा दीक्षित व्यक्ति देखिन्छन् । पछि रामशाहले सुधार गर्दा पनि यिनै ग्रन्थहरुको आधार लिइएको भएपनि हाल नेपालको कानुन साहित्यमा यस विवादरत्नाकरलाई कुनै स्थान दिइएको देखिंदैन् । बाहिरको संसारमा यस ग्रन्थले जतिसुकै प्रतिष्ठा पाएपनि आफ्नो उद्गमस्थल अर्थात जहाँ कानुनको यो महान साहित्य लेखियो त्यसै ठाउँमा यसले कुनै सम्मान पाउन नसक्नु दु:ख र आश्चर्यको विषय भएको छ ।

चौधौं शताब्दीको साम्राज्यवादी युगमा कानुनीराज्य र विधिको शासन स्थापना गर्नका लागि नेपालको भक्तपुर राजदरबारमा बसेर स्मृतिकार चण्डेश्वर ठक्कुरले लेखेको यो स्मृतिनिबन्ध आफ्नो समयको नेपालको कानुन साहित्यको पहिलो पुस्तक रहेको देखिन्छ । जतिबेला भारतीय उपमहाद्विपका राजाहरु आपसी संघर्षमा अल्झेर पश्चिमबाट बढदै आइरहेका विधर्मी मुसलमानहरुका लागि अनुकूल परिवेश तयार गरिरहेका थिए, त्यतिबेला नेपालको दक्षिणी भूभागमा कर्णाटवंशका राजाहरुको संरक्षणमा सिमरौनगढमा मैथिली र संस्कृत साहित्य फलिफुलिरहेका थिए । यस राजनैतिक अस्थिरता, निरंकुश साम्राज्यवादी शासनव्यवस्थाको युगमा चण्डेश्वर ठाकुर नै पहिलो त्यो व्यक्ति हो, जसले तिरहुतमा बिनाकुनै रक्तपात, राजाको शक्तिमाथि अंकुश लगाउन सात सदस्यीय सभ्य परिषदको गठन गराइ राजालाई त्यस परिषद मातहत ल्याएका थिए । राज्यमा शान्ति, सुव्यवस्था, अमनचयन कायम गर्न र कानुनीराज्यको स्थापना गर्ने उद्देश्यले नै उनले सप्तरत्नाकरको रचना गरेका थिए । यी सप्तरत्नाकरहरुमध्ये देवानी, फौजदारी र कार्यविधि कानुन सम्बन्धि व्यवस्थाहरुलाई समेटेर तयार गरिएको विवादरत्नाकर निकै उत्कृष्ट रचना मानिन्छ । कानुन साहित्यको यो पुस्तकमा एकसय तरंग (अध्याय) र १८७३ वटा प्रसंग (भनाई) हरुको प्रमाण दिएर कानुनी प्रावधानहरु तयार गरिएका छन् । तत्कालिन समाजमा प्रचलित लगभग हरेक विषयक्षेत्रसित सम्बन्धित मुद्दाहरुलाई किनारा लगाउनका लागि उनको यस ग्रन्थले मार्ग प्रशस्त गरिदिएको छ ।

अत: नेपालको कानुन साहित्यको पहिलो कानुन संहिता विवादरत्नाकरलाई प्रकाशमा ल्याएर यो ग्रन्थ र ग्रन्थकारलाई उचित सम्मान दिनु प्रत्येक नेपालीको साझा कर्तव्य हो । खासगरी न्यायकानुनको क्षेत्रमा यस पुस्तकले पुर्याएका अविस्मरणीय योगदान सबैका लागि महत्वपुर्ण रहेको छ ।

स्रोतसन्दर्भ

नेपाल ज्ञानमणि(वि.स.२०५४). *नेपालको पुर्वमध्यकालको इतिहास,* नेपाल र एशियाली अनुसन्धान केन्द्र, काठमाडौं । खनाल, मोहनप्रसाद(वि.स. २०५६). *सिमरौनगढको इतिहास,* नेपाल र एशियाली अनुसन्धान केन्द्र, काठमाडौं ।

ठाकुर, उपेन्द्र(१९९२ ई.). *मिथिलाक इतिहास,* मैथिली अकादमी, पटना ।

चौधरी राधाकृष्ण(२०१० ई.). *मिथिलाक इतिहास,* श्रुति प्रकाशन, दिल्ली ।

विद्यालंकार, दीनानाथ(१८८७ ई.). *विवादरत्नाकर: अ ट्रीटाइज अफ हिन्दु लॉ बाई चण्डेश्वर ठक्कुर,* बिबलियोथिका इण्डिका कलकत्ता ।

स्मृतितीर्थ, कमलकृष्ण(१९३१ ई.). *विवादरत्नाकर: अ ट्रीटाइज अफ हिन्दु लॉ बाई चण्डेश्वर ठक्कुर,* एशियाटिक सोसाइटी अफ बंगाल, कलकत्ता ।

बज्राचर्य, धनबज्र(वि.स. २०३०). *लिच्छविकालका अभिलेख,* नेपाल र एशियाली अध्ययन संस्थान, काठमाडौं ।

उपाध्याय, भगवतशरण(१९५५ ई.). *साँस्कृतिक भारत,* राजपाल एण्ड सन्स, दिल्ली ।

उपाध्याय, बलदेव(१९५३ ई.). *आर्य संस्कृति,* शारदा मन्दीर, बनारस ।

दत्त, रमेशचन्द्र(१९६६ ई.) *हिस्ट्री अफ सिविलाइजेशन इन एन्सेण्ट इण्डिया हिन्दी अनुवाद(१९६६ ई.) गोपालदास तथा कमलाकर तिवारी,* इतिहास प्रकाशन संस्थान , इलाहाबाद ।

त्रिपाठी, रमाशंकर(१९६८ ई.). *प्राचीन भारतका इतिहास,* मोतीलाल बनारसीदास, दिल्ली ।

वेदालंकार, हरिदत्त(१९७२ ई.). *प्राचीन भारतका राजनीतिक एवं सांस्कृतिक इतिहास ई. पू. २०० से ई.सन ३०० तक,* हिन्दी समिति उत्तरप्रदेश शासन, लखनऊ ।

काणे, पि.भी.(१९८० ई.). *धर्मशास्त्रका इतिहास अनुवादक अर्जुन चौबे,* हिन्दी समिति, सूचना विभाग उत्तर प्रदेश लखनऊ ।

कीथ, ए.बी.(१९७८ ई.). *संस्कृत साहित्यका इतिहास अनुवादक मंगलदेव शास्त्री,* मोतीलाल बनारसीदास, दिल्ली ।

श्रेष्ठ, पुरुषोत्तमलोचन(२०२५ ई.). *मानवन्यायविकासिनी : नेपालको पहिलो संहिताबद्ध लिखित कानुन,* अनलाइन मजदूर डटकम ।

खनाल, विष्णुप्रसाद(२०२४ ई.). *ऐतिहासिक कानुनी दस्तावेज : न्याय विकासिनी, इन्टरडिप्लिनरी इस्स्युज इन एजुकेशन भोल्युम २ नं. २ पेज ८१-८८* doi.org/103126/iie.v2i2.71770

कर्ण, हिरालाल(२०२५ ई.). *तिरहुतको कर्णाटकालको राजनैतिक इतिहास (१०९७-१३२७ ई.),* अप्राशित पुस्तक ।

झा, रोशनकुमार (२०२६ ई.) फेसबुक पेज ई.स. २०२६ फरवरी १६ ।

Research Journal on Multi-disciplinary Issues
(A Peer Reviewed Open Access Journal)
ISSN: 2705-4594 [Print] E-ISSN 2705-4608 [Online]
Vol. 6 No.1 February 2026, pp.127-138
eJournal site: www.nepjol.info
www.jsmmc.edu.np

काठमाण्डौ उपत्यकामा आधारित सामुदायिक तथा निजी बिद्यालयका अध्ययन-अध्यापन अभ्यासमा कोभिड-१९ ले पारेका प्रभाव सम्बन्धी तुलनात्मक अध्ययन

[1]फूल कुमारी चौधरी
[2]अरुण प्रसाद चौधरी

[1]Faculty Member
Department of Nepali
JSMM Campus Lahan,
Siraha (Nepal)
[2]Faculty Member
पूर्वाञ्चल क्याम्पस,ई.अ.सं.,
त्रि.बि.,धरान, सुनसरी
Email:arunchaudhary5019@gmail.com

Article History:
Submitted: Nov. 15, 2025
Reviewed: January 29, 2026
Accepted: February 10, 2026
Doi: https://doi.org/10.3126/rjmi.v6i1.91321

URL.: www.jsmmc.edu.np
URL: www.nepjol.info

लेखसार

कोभिड-१९ भनिने नयाँ कोरोना भाईरसको बिश्वव्यापी महामारीले मानव जीवनका हरेक पक्षमा प्रभाव पारेको देखिन्छ । स्वास्थ्य, खेलकुद, व्यापार व्यवसाय उद्योग धन्दा, कलकारखाना एवम् बिशेष गरी शिक्षा क्षेत्र समेतलाई तहसनहस पारेको थियो । यस्तो अवस्थामा लगभग १९१ देशले आफ्ना विद्यालय/विश्वबिद्यालय अनिश्चित कालका लागि बन्द गर्नु परेको थियो । युनेस्कोको अनुसार नब्बे लाख नेपाली बिद्यार्थी यस महामारीबाट प्रभावित भएका थिए । यस्तो बिषम परिस्थितिमा विद्यार्थीवर्गमा मनोसामाजिक असर पर्नु स्वाभाविक हो । सामुदायिक तथा निजी बिद्यालयहरुले जुम, गुगल मिट आदि सफ्टवेयरबाट अनलाइन पढाउन शुरु गरेका थिए । अनलाइन कक्षा कतिको सहज, कक्षा कार्यभार बुझाउनु पर्ने झंझट तथा ईलेक्ट्रोनिक सामान एवम् प्रबिधिको प्रयोगमा कठिनाई यस आलेखका प्रमुख समस्या हुन् । साथै उक्त यस समस्यालाई सामुदायिक तथा निजी बिद्यालयका बिद्यार्थीहरु बिच तुलनात्मक अध्ययन गरी न्यूनीकरन गर्न सकिन्छ भन्ने मुख्य उद्देश्य हो । यस आलेखलाई मूर्तरुप दिन प्राथमिक र द्वितीयक तथ्याङ्क संकलन गरी कुल जनसंख्याबाट स्तरिकृत नमूना विधिद्वारा माईक्रोसफ्ट एक्सेलमा विश्लेषण गरिएको छ । सामुदायिक तथा निजी विद्यालय बिचको तुलना गर्दा धेरै जसो विद्यार्थीहरु अनलाइन कक्षाको पक्षमा नरहेको पाइएको छ साथै यस किसिमका कक्षाबाट विद्यार्थीमा हुने मानसिक थकान, स्क्रीन समस्या आदि सामुदायिक विद्यालयका विद्यार्थीमा बढी देखिएको छ । यस आलेखले भैपरीमा शिक्षण-सिकाई प्रभावकारी ढंगले तथा विद्यार्थी-शिक्षक र ब्यवस्थापन समितिलाई नव प्रविधिसँग सरोकार राख्न मार्ग दर्शन गर्नेछ तथा शिक्षक-विद्यार्थी बिचको क्षमता विकास, सबै स्तरका विद्यार्थीको समान पहुँच सुनिश्चित गर्ने नीति तथा मानसिक स्वास्थ्य र सामाजिक-भावनात्मक सहयोगको आवश्यक्ता निर्धारण गर्नेछ ।

शब्द कुञ्जिका: कोभिड-१९, लकडाउन, महामारी, मनोसामाजिक, सामुदायिक

अध्ययनको पृष्ठभूमी

भैगोलिक क्षेत्रको ठूलो दायरा जस्तै धेरै देश वा महादेशलाई यदि कुनै रोगले ढाक्ने गर्छ र जनसंख्याको महत्वपूर्ण भागलाई असर गर्छ भने त्यसलाई महामारी भनिन्छ । (मेरियम-वेबस्टर शब्दकोष) । पहिलो चोटि सामना गरिएको संक्रमण, जुन विश्वव्यापीरुपमा फैलिने गर्छ तथा उच्च स्तरको रोग र

मृत्यु निम्त्याउँछ भने त्यसलाई महामारी भनेर सयौं वर्षदेखि वर्णन गरिएको पाईन्छ (डोहर्टी,२०१३ ई.) । विशेषरुपमा 'ब्ल्याक डेथ' नामले परिचित प्लेग महामारी जसमा ई.सं. १३४६ देखि १३५३ सम्म ७५ लाख देखि २० करोड मानिसको मृत्यु भएको थियो र युरोप, अफ्रिका तथा एसिया लगभग ध्वस्त भएका थिए (विकिपेडिया)। ई.सं.१९६८ को फ्लुको लागि जिम्मेवार एच३एन३ ईन्फ्लुएन्जा ए भाईरस संसार भरी दश लाख मान्छेको मृत्यु गराएको थियो ।

अनलाइन अध्ययन-अध्यापन इन्टरनेटमार्फत सञ्चालन गरिने शिक्षा क्षेत्रको पुरानै अभ्यास हो । यस प्रकारको दूर शिक्षालाई सामान्य भाषामा ई-लर्निङ्ग भनिन्छ । यस प्रकारको सिकाई प्रक्रियामा अनलाइन प्लेटफर्महरु मार्फत व्यक्तिहरुलाई अध्यापन गर्ने गरिन्छ (अलाटा र माईयर्स, २०२३) । हालका बर्षहरुमा अनलाइन शिक्षण र अध्ययन नेपालमा शिक्षाको महत्वपूर्ण योगदानकर्ताका रुपमा उदाएका छन् । यसले विद्यार्थी र शिक्षक दुवैका लागि नयाँ सम्भावनाहरु खोलेका छन् जसले पहिले उपलब्ध नभएका विभिन्न शैक्षिक स्रोतहरु र अवसरहरुमा पहुँच प्रदान गरेको छ (अल्काहतानी र राजखान,२०२०) ।
यसका अतिरिक्त नेपाल जस्तो देश जहाँ भौगोलिक विविधता र सीमित स्रोत साधनले गुणस्तरीय शिक्षामा पहुँचलाई प्रायः अवरुद्ध गर्छन् भने अनलाइन शिक्षण र अध्ययन विशेष रुपमा लाभदायक साबित भएका छन् । आर्थिक दृष्टिकोणले पनि अनलाइन शिक्षा प्रभावकारी देखिएको छ (दियाल र पाण्डे,२०२४)। SARC-CoV-2नेपालमा बिभिन्न देश जस्तै भारत, चीन आदि देशहरुबाट आउने पर्यटकद्वारा फैलिएको पाईएको छ (असिम,२०२०) । डब्ल्युएचओले यस SARC-CoV-2 लाई अन्तर्राट्रिय आपतकालिन स्वास्थ्य समस्या बताउँदै मार्च ११, २०२० मा माहामारी घोषणा गरेको थियो (डब्ल्युएचओ,२०२०)। जनवरी २४, २०२० (तदनुसार २०७६ माघ १०) एक ३२ बर्षीय नेपाली युवक वुहान चीनबाट फर्किदा कोरोना भाईरस नेपाल भित्रिएको पहिचान गरिएको थियो(गहतराज,२०२०)) । नेपाल सरकारले १८ मार्च २०२० (५ चैत्र २०७६ साल) मा देशभरी लकडाउनको घोषणा गरेको थियो (भट्ट र ज्ञवाली,२०२१) । लगभग बिश्वको १९१ देशले आफ्ना स्कूल कलेज र बिश्वबिद्यालय कोभिडको कारण बन्द गर्नुपरेको थियो जसले शिक्षा क्षेत्रलाई पूर्णरुपमा तहसनहस पारेको थियो (युनेस्को,२०२०)। यस्तो विषम परिस्थितिमा बिश्वका विकसित देशहरु जस्तो ईटली,जर्मनी, बेलायत, अमेरिकाले बिभिन्न किसिमका शिक्षा व्यवस्थापन प्रणाली र क्लाउड कम्प्युटिङ्गमा आधारित सेवा सुचारु गरेका थिए । यसै गरी चीन र भारतले पनि अनलाईन मार्फत पढ़ाउन शुरु गरे । चीनले राष्ट्रिय तथा प्रान्तीय रेडियो, टेलिभिजनबाट प्रसारण शुरु गरे भने भारतले देशका बिभिन्न भाषामा प्रसारण शुरु गरेको थियो (अजि-हक र श्मीस, २०२०)। नेपालमा काठमाडौं बिश्वबिद्यालयले गुगल मिट र मुडल (का.बि.,२०२०) तथा त्रिभुवन बिश्वबिद्यालयले माईक्रोसफ्ट टिमबाट(त्रि.वि.,२०२०) साथै नेपाल सरकारले बिभिन्न मेडिया जस्तै रेडियो, टिभीबाट अनलाईन कक्षा शुरु गरे (पंडित,२०२०) । हुनत नेपाल जस्तो विकासशील देश जहाँ श्रोत साधनको कमि छ त्यो देशका लागि अनलाईन कक्षा सहज हुने कुरै हुदैन(युनेस्को,२०२०) । तैपनि ५६ प्रतिशत नेपाली जनतासँग ईन्टरनेटको सुविधा छ । ३५ प्रतिशत स्कूलसँग यसको सुविधा भएता पनि केवल १३ प्रतिशत स्कूलले मात्र अनलाईन कक्षा संचालन गरेको थियो(पंडित,२०२०) ।

समस्या कथन र उद्देश्य निर्धारण

कोभिड-१९ ले शिक्षा क्षेत्रलाई तहसनहस पारेको हुनाले सबै स्कूल/क्याम्पस तथा विश्वबिद्यालय बन्द भएको हुनाले बिद्याथीहरुको भविश्य अन्धकारमय बन्न पुग्यो । यस समस्याको सामाधानको लागि काठमाडौं बिश्वबिद्यालय तथा त्रिभुवन बिश्वबिद्यालयले अनलाईन कक्षा शुरु गरे । यसकै देखासिकीले बिभिन्न सामुदायिक तथा निजी बिद्यालयहरुले पनि अनलाईन शुरु गरे । अनलाईन कक्षा कतिको सहज, कक्षा कार्यभार बुझाउनु पर्ने झंझट तथा ईलेक्ट्रोनिक सामान एवम् प्रबिधिको प्रयोगमा कठिनाई यस आलेखका प्रमुख समस्या हुन् । साथै उक्त यस समस्यालाई सामुदायिक तथा निजी बिद्यालयका बिद्यार्थीहरु बिच तुलनात्मक अध्ययन गरी समाधान/न्यूनिकरन गर्न सकिन्छ भन्ने मुख्य उद्देश्य हो ।

अध्ययनको औचित्य

यस अध्ययनको औचित्य बिशेष गरी सामुदायिक विद्यालयका बिद्यार्थीहरु जहाँ सुबिधाको कमि हुन्छ र सुबिधा सम्पन्न निजी बिद्यालयका बिद्याथीहरु माझ एक तुलनात्मक अध्ययनले गर्दा कसरी प्रभावकारी ढंगले शिक्षण गर्न सकिन्छ साथै नयाँ प्रविधिसँग शिक्षक-बिद्यार्थीको अनुभव एवम् अनलाईन र भौतिक उपस्थिति बिचको कक्षाको प्रभावकारिता औचित्यपूर्ण छन् । यस आलेखले भैपरिमा कसरी शिक्षा क्षेत्रलाई आघात नहुन तयारी अवस्थामा रहन सकिन्छ भन्ने कुराको बिशेष उद्देश्यका साथ महत्वपूर्ण पक्षलाई उजागर गरेको छ ।

अध्ययनको सीमा

यो लेख बिशेष गरी काठमाडौं उपत्यका भित्रका सामुदायिक विद्यालय गाँधी आदर्श माध्यमिक बिद्यालय , कागेश्वरी मनोहरा र निजी विद्यालय बिनय-सुधा (भि.एस.) निकेतन सेकण्डरी स्कूलको तथ्याङ्क संकलन गरी बिश्लेषण गरिएको छ । यसको लागि कक्षा ८,९ र १० का बिद्याथीहरुलाई समेटिएको छ । पूर्वी तराई क्षेत्रमा सम्पर्क गर्दा अनलाइन कक्षा नगराइएको जानकारी पाइएकोले यस आलेखलाई काठमाडौं उपत्यका भित्र सिमित गर्नु परेको छ ।

अध्ययन विधि

यो अध्ययन मूलत: दुई प्रकारको तथ्याङ्कमा आधारित छ । पहिलो अर्थात प्राथमिक तथ्याङ्क जसमा सामुदायिक र निजी विद्यालयहरुमा गई तथ्याङ्क संकलन गरिएको छ र दोस्रो अर्थात द्वितीयक तथ्याङ्क जुन बिभिन्न प्रकाशित जर्नल, पत्रपत्रिका एवम् समाचार पत्रहरुबाट संकलन गरिएको छ अर्थात पुस्तकालयीय अनुसंधान विधिका द्वितीय श्रोतहरु प्रयोगमा ल्याइएका छन् । यी संकलित तथ्याङ्कलाई माईक्रोसफ्ट एक्सेलमा तथ्याङ्क विश्लेषण गरिएको छ । यसका लागि १२४ बिद्यार्थी, १० व्यवस्थापन समिति तथा २० शिक्षकलाई कुल जनसंख्याबाट स्तरिकृत नमूना विधिद्वारा छनौट गरिएको हो ।यस कार्यका लागि गान्धी आदर्श मा.वि.कागेश्वरी-मनोहरा काठमाण्डौ र विनय-सुधा(भि.एस.) निकेतन मा.वि.तीनकुने, काठमाण्डौ तथा यस विद्यालयका शिक्षक र व्यवस्थापन समितिका सदस्यहरुलाई सामेल गराई तथ्याङ्क संकलन गरिएको छ । यस कार्यको लागि वि.स.२०८१ साल चैत्र महिनाको १२ गते देखि २५ गते भित्रमा तथ्याङ्क संकलन गरिएको छ ।

शैद्धान्तिक आधार

छिमेकी देशहरु जस्तै चीन, भारत तथा अन्य देशहरुबाट आएका विदेशी नागरिकहरु र नेपालका नागरिकहरुको आवागमन बढेसँगै नेपालमा SARC-CoV-2 को संक्रमण दरमा वृद्धि भएको थियो(अंसिम, २०२०)। SARC-CoV-2 को प्रकोपलाई विश्व स्वास्थ्य संगठनले जनवरी ३०, २०२० मा 'अन्तर्राष्ट्रिय सरोकारको सार्वजनिक स्वास्थ्य आपतकाल' घोषणा गरेपछि मार्च ११, २०२० मा यसलाई महामारी रोगको रुपमा वर्गीकृत गर्यो (डब्ल्युएचओ,२०२०) । यहाँ महामारीको डर भनेको साहित्यमा प्राय: प्रयोग हुने अवधारणाहरुको नयाँ नाम हो, जसले अज्ञात वा अनिश्चित परिस्थितिहरु अथवा महामारीको तनावलाई उजागर गर्दछ (सोर्वा र दविजा,२०२४) । जनवरी २४, २०२० मा चीनको वुहानबाट फर्किएका ३२ बर्षीय एक नेपाली युवालाई नेपालमा कोभिड-१९ महामारीको पहिलो पुष्टि भएको घटनालाई औपचारिक रुपमा पहिचान गरेको हो (चालिसे,२०२०)। कोभिड-१९ को कारण विश्वभर फैलिएको आतंकका कारण करिब ११९ देशहरु आफ्ना शैक्षिक संस्थाहरु बन्द गर्न बाध्य भएका थिए, जसले शैक्षिक प्रणालीमा गम्भीर असर पारेको थियो (विनेर एट अल.,२०२०)। युनेस्कोको प्रतिवेदन अनुसार महामारीको चपेटामा देशब्यापी बन्द लागु गरिएपछि नेपालमा करिब ९० लाख विद्यार्थीहरु प्रत्यक्षरुपमा प्रभावित भएका थिए । शैक्षिक संस्थाहरु लामो समयसम्म बन्द रहनुका कारण शिक्षा प्रणालीमा उल्लेखनीय परिवर्तन आवश्यक परेको हुनाले डिजिटल प्लेटफर्महरुको प्रयोग मार्फत टाढाबाट गरिने शिक्षण-शिकाइ अर्थात अनलाइन शिक्षामा उल्लेखनीय वृद्धि भएको थियो (दवाडी एट अल.,२०२०)।

विभिन्न देशहरुले शिक्षा क्षेत्रमा महामारीले पारेका प्रभावलाई सम्बोधन गर्न आफ्ना उपलब्ध स्रोतसाधनहरुको प्रयोग गरेका थिए । शिक्षालाई सहयोग पुर्याउन विकसित राष्ट्रहरुले विभिन्न प्रकारका लर्निङ्ग म्यानेजमेन्ट सिस्टम (LMS) तथा क्लाउड कम्प्युटिङ्गमा आधारित सेवाहरु अपनाएका थिए । त्यसैगरी चीन र भारत जस्ता जनसंख्या बढी भएका राष्ट्रहरुले पनि अनलाइन सिकाइ प्रणाली शुरु गरेका थिए । जहाँ भारतले धेरै भाषाहरुमा समान स्रोतहरु उपलब्ध गराएको थियो त्यहिँ चीनले राष्ट्रिय र प्रान्तीय स्तरका स्थल, स्रोत र सामग्रीहरु परिचालन गरेको थियो (अजि-हक र श्मीस, २०२०) । पूर्वाधार र प्रविधिको हिसाबले पछाडि रहेका राष्ट्रहरुले रेडियो, टेलिभिजन र अन्य प्रकारका शिक्षण माध्यमहरुको प्रयोग गरेका थिए (हग, आइलन र आचार्य,२०२५)। नेपालमा काठमाडौं विश्वबिद्यालयले कोभिड-१९ का कारण कक्षाकोठा बन्द हुँदा छिटो प्रतिकृया स्वरुप अनलाइन शिक्षणका लागि मुडल र गुगल मिट प्रयोगमा ल्याएका थिए (का.वि.,२०२०)। त्यसैगरी त्रिभुवन विश्वबिद्यालयले माईक्रोसफ्ट टिमद्वारा अनलाइन सिकाइ पद्धतीलाई निरन्तरता दिएका थिए (त्रि.वि.,२०२०)। नेपालमा विद्यालयहरुमा औपचारिक शिक्षाको बन्दले वास्तविक रुपमा कस्तो प्रभाव पारेको थियो भनी पहिचान गर्न पर्याप्त अनुसंधानको कमी भएकोले यस आलेखमा अनलाइन सर्वेक्षण, लेख समीक्षा र अन्य माध्यमहरुको प्रयोग गरी अवलोकन गर्ने प्रयास गरिएको छ । यस आलेखमा अनलाइन कक्षाहरुका चुनौतीहरुको विश्लेषण गरिएको छ र साथै नेपालका विद्यालयहरुमा कोभिड-१९ ले पारेको प्रभावलाई न्यूनीकरण गर्न केहि रणनीतिहरु प्रस्ताव गरिएको छ ।

विद्यार्थीवर्गमा परेको असर

विद्यार्थीहरुले आफ्नो अध्ययन तथा गृहकार्यमा सबैभन्दा बढी अवरोध भोग्नु परेको थियो । एसइई परीक्षाको समयमा धेरै जसो विद्यार्थीहरु अन्यौल र चिन्तामा देखिन्थे (दवाडी एट अल.,२०२०) । धेरै परीक्षाहरुको तालिका फेरिए जसले गर्दा विद्यार्थीवर्गमा चिन्ता थपिनु र अन्यौलता सिर्जना हुनु स्वाभाविक देखिन्छ । अतिरिक्त कृयाकलाप नहुनु चिन्ताको विषय बनेको थियो । सामान्यतया विद्यार्थीहरुले भौतिक कक्षाकोठामा आफ्ना सामाजिक, भावनात्मक र संज्ञानात्मक सीपहरु विकास गर्ने गर्छन् तर यस संकट अवधिमा समयतालिकाका कारण उनिहरुको कडा दैनिक जीवनशैली अव्यवस्थित भएको पाइयो (पान,२०२१)। विद्यालय बन्द भएको प्रभाव सबै बालबालिकाका लागि विशेष रुपमा चुनौतीपूर्ण भएको थियो, जहाँ विपन्न परिवारका विद्यार्थीहरुले सबैभन्दा ठूलो कठिनाइ भोग्नुपरेको थियो । उनीहरुले स्पष्टरुपमा सिकाइमा पछाडि पर्ने अनुभव गरेका थिए र आफ्नो शिक्षाबाट बाहिरिनुपर्ने जोखिम पनि बढेको महसुस गरेका थिए (कमरुज्जमन एट अल, २०२४) ।

शिक्षकवर्गमा परेको असर

शिक्षकहरुले सामना गरेको मुख्य कठिनाइ भनेको भर्चुअल वातावरणमा शिक्षण प्रक्रिया संचालन गर्नु थियो । प्रविधिसँग अवगत हुनु एक मौका पनि थियो भने सिक्नको लागि स्रोत साधन जुटाउनु र साथै सिक्न सक्ने क्षमता राख्नु पनि कठिन काम थियो । छोटो समयमै धेरै शैक्षिक संस्थाहरुले प्रशिक्षण सत्र, शिक्षक अभिमुखीकरण कार्यक्रमहरु आयोजना गरी नयाँ विधिहरु कार्यान्वयन गर्न शिक्षकहरुलाई सहयोग गरेको थियो । यसले शिक्षकहरुलाई प्रविधिमा दक्ष बन्न प्रेरित गरेको थियो । तैपनि उनिहरुको गृहकार्य दिनु वा जाँच गर्नु , विद्यार्थी उपस्थित रहेको/नरहेको एक समस्या नै थियो (पान, २०२१) ।

शिक्षा क्षेत्रमा परेको नकारात्मक असरहरु

शिक्षा क्षेत्र कोभिड-१९ ले गर्दा नराम्रो तरिकाले प्रभावित भएको थियो । यहाँ केहि असरहरु प्रस्तुत गरिएका छन् ।

१.परीक्षाको तालिका बारम्बार फेरियो साथै कक्षा र नयाँ भर्ना कार्य पूर्णरुपमा ठप्प परेको थियो ।

२. केहि समयका लागि अनलाइन कक्षा पनि अन्यौलतामै सिमित रहेको थियो ।

३. प्रयोगशाला भएका विषयको पठन-पाठन हुन सकेन (दियाल र पाण्डे, २०२४) ।

४. पास भएका विद्यार्थीहरु पनि विभिन्न परीक्षा तथा जागिरका अवसरबाट बञ्चित थिए ।

५. धेरै जसो शिक्षकहरुले शुरुमा युट्यूब, जुमबाट कक्षा संचालन गरेका थिए ।

६. धेरै जसो अभिभावकहरु आफ्ना विद्यार्थी प्रति ध्यान दिन सकेका थिएनन्(बाजपेयी,२०१९) ।

शिक्षा क्षेत्रमा परेको सकारात्मक असरहरु

कोभिड-१९ले नकारात्मक असर मात्र हैन सकारात्मक असर पनि पारेको देखिन्छ ।

१. यसले गर्दा विद्यार्थी एवम् शिक्षकवर्ग नयाँ प्रविधिसँग परिचित हुने अवसर पाएको छ ।

२. विद्यार्थीले राम्रो तरिकाले समय व्यवस्थापन गरेको देखिन्छ ।

३. अनलाइन कक्षाले गर्दा बिद्यार्थीवर्गले विश्वका अरु शिक्षकसँग पनि सिक्न सक्ने देखियो (दियाल र पाण्डे, २०२४) ।

४. प्रविधिको प्रयोगले हरेक बिषयवस्तुसँग राम्ररी अवगत हुने अवसर मिलेको पाइयो (बाजपेयी,२०१९) ।

नतिजा विश्लेषण

कोभिड-१९ का क्रममा सबै शैक्षिक संस्थाहरुले अनलाइन माध्यममार्फत शिक्षा प्रदान गर्न आफ्ना रणनीतिहरु अनुकुल बनाउन प्रयास गरेका थिए । त्यसैले यसका लागि भि.एस.निकेतन र गान्धी आदर्श मा.वि.का बिद्यार्थीहरु तथा शिक्षक-कर्मचारीहरु बिच अन्तवार्ता लिइएको हो ।

तुलनात्मक अध्ययन

तुलनात्मक अध्ययनले दुई भिन्न किसिमका, विभिन्न वातावरणमा समानता वा असमानता सम्बन्धी कुरालाई प्रष्ट पार्दछ । यसले गर्दा महत्वपूर्ण कुराहरुको ब्याख्या वा विश्लेषण गर्न मद्दत पुग्छ ।

लिङ्ग (महिला/पुरुष विद्यार्थी)

अहिलेको समयमा शिक्षाको अधिकार महिला पुरुष दुबैलाई बराबर छ । त्यसैले कोभिड-१९ले सबैलाई असर पार्न सक्ने हुनाले सरकारी एवम् निजी विद्यालयमा उपस्थित सबै विद्यार्थीहरु माझ यो सर्वेक्षण गरिएको छ ।

तालिका १

लिङ्ग ((महिला/पुरुष विद्यार्थी)

विद्यार्थीहरुको लिङ्ग (महिला/पुरुष)	पुरुष (%)	महिला (%)	जम्मा (%)
	५४ (४३.५५%)	७० (५६.४५%)	१२४ (१००%)

(स्रोत : फिल्ड सर्भे, २०८१)

माथिका तालिकाबाट महिला विद्यार्थीको संख्या बढी रहेको पाइएको छ । महिला, पुरुष रथका दुई पाङ्ग्रा रहेको समाजमा महिला शिक्षाको क्षेत्रमा अघि आउनु स्वाभाविक छ । पुरुषको संदर्भमा अहिलेको समयमा नपढने व्यवहार लागु भएको देखिन्छ । बिशेष गरी सानै उमेरमा कुलतमा फस्ने तथा विद्यालय नजाने प्रवृति बढेको देख्न सकिन्छ ।

कक्षा तथा उमेर समूह

१२४ जना विद्यार्थीहरु कक्षा ८,९र १० बाट लिइएको थियो र उमेर समूह अन्तर्गत १३ देखि १६ बर्ष मुनिका विद्यार्थीहरुलाई समेटिएको थियो ।

तालिका २

कक्षा तथा उमेर समूह

चर	श्रेणी	संख्या	प्रतिशत	औसत	ीवचलन	मानक विचलन
उमेर	१३-१४ १४-१५ १५-१६	३८ ३० ५६	३०.६५ २४.१९ ४५.१६	१४.६५	०.७४	०.८६
कक्षा	८ ९ १०	४६ ४० ३८	३७.०९ ३२.२६ ३०.६५	४१.३३	११.५६	३.४

(स्रोत : फिल्ड सर्भे, २०८१)

माथिका तालिकाबाट उमेर समूह अन्तर्गत १३ देखि १६ बर्षका विद्यार्थीहरु सामेल भएको देखिन्छ । सबै भन्दा बढी १५ देखि १६ बर्षका विद्यार्थीहरु सामेल भएको छ । साथै मानक विचलन ०.८६ रहेको छ । ८,९ र १० कक्षाका विद्यार्थीहरु सामेल भएको यस सर्वेक्षणमा सबै भन्दा बढी कक्षा ८ का विद्यार्थी देखिएका छन् । यसका मानक विचलन ३.४ छ । तर उमेर समूह १५-१६ बढी छ र कक्षा ८का विद्यार्थी बढी संख्याले के देखाउँछ भने कक्षा ८ मा बढी उमेरका विद्यार्थीको उपस्थिति छ ।

भर्चुअल संचार माध्यमका प्रकार

लकडाउनको वेला बिभिन्न प्रकारका भर्चुअल संचार माध्यम प्रयोगमा ल्याइएको थियो जस्तै रेडियो, टिभी, ईन्टरनेट । टिभी र ईन्टरनेट दृष्यश्रवणकोलागि प्रयोग हुन्छ भने रेडियो केवल सून्नका लागि मात्र । त्यसैले रेडियोद्वारा पढाइनु एक चुनौतीपूर्ण थियो ।

तालिका ३

भर्चुअल संचार माध्यमका प्रकार

	ईन्टरनेट(%)	रेडियो (%)	टिभी(%)	कुनै पनि हैन(%)
सामुदायिक विद्यालयका विद्यार्थी	९३.९४	...	६.०६	...
निजी विद्यालयका विद्यार्थी	९६.९७	...	...	३.०३

(स्रोत : फिल्ड सर्भे, २०८१)

तालिका ३ बाट प्राप्त जानकारी अनुसार सामुदायिक र निजी विद्यालयका विद्यार्थीसँग ईनटरनेटको पहुँच लगभग समान रहेको देखाउँछ । ६.०६ प्रतिशत सामुदायिक विद्यालयका विद्यार्थी टिभी प्रयोग गरेको देखियो भने ३.०३ प्रतिशत निजी विद्यालयका विद्यार्थीले कुनै पनि माध्यमबाट पढाई गरेको देखिएन । यसले सबै विद्यार्थीहरु सूचना प्रविधिबाट बञ्चित नरहेको कुरा प्रष्ट पार्दछ ।

सिकाइको स्तर

लकडाउनको कारणले गर्दा विद्यार्थीहरुलाई अनलाइन पढनु परेको हुनाले सिकाई प्रकृयामा फरक आउनु स्वभाविक हो । सिकाईको स्तर भौतिक उपर्सिथितिमा विद्यार्थीको लगनशीलता, शिक्षकको सिकाउने तरिका तथा व्यवहारमा निर्भर रहन्छ साथै विद्यार्थी र शिक्षक बिचको सामन्जस्यतामा पनि भर पर्छ । शिक्षकले कक्षा-कोठामा डुलेर पढाउँदा साथै विद्यार्थीसँग समन्वय गरेर पढाउँदा विद्यार्थीहरु राम्ररी बुझेको देख्न सकिन्छ । तलको तालिकाले अनलाइन कक्षा मार्फत विद्यार्थीको सिकाइको स्तर देखाइएको छ ।

तालिका ४

सिकाइको स्तर

	एकदम राम्रो(%)	राम्रो (%)	संतोषजनक(%)	नराम्रो(%)
सामुदायिक विद्यालयका विद्यार्थी	३.२२	६४.५१	३२.२५	०.०२
निजी विद्यालयका विद्यार्थी	१९.३५	५१.६१	२५.८०	३.२२

(स्रोत : फिल्ड सर्भे, २०८१)

तालिका ४ ले देखाए अनुसार एकदम राम्रोमा ३.२२ प्रतिशत सामुदायिक विद्यालयका विद्यार्थी र १९.३५ प्रतिशत निजी विद्यालयका विद्यार्थी देखिएका छन । त्यसैगरी राम्रोमा ६४.५१ प्रतिशत सामुदायिक विद्यालयका विद्यार्थी र ५१.६१ प्रतिशत निजी विद्यालयका विद्यार्थी देखिएका छन । संतोषजनकमा पनि सामुदायिक विद्यालयका विद्यार्थीको प्रतिशत बढी छ । निजी विद्यालयका बिद्यार्थीहरुका सिकाइ स्तर सामुदायिक विद्यालयका बिद्यार्थीको भन्दा राम्रो देखिएता पनि तुलनात्मकरुपमा सामुदायिक विद्यालयका विद्यार्थीको सिकाई स्तर राम्रो छ । यसका कारण निजी विद्यालयका बिद्यार्थीहरु प्रविधिसँग बढी जानकार भएको तर सामुदायिक विद्यालयका बिद्यार्थीहरु अध्ययनशील देखिएकोले औषतमा राम्रा छन् ।

गृहकार्य पूरा गर्ने सहजता

अनलाइन कक्षाहरुले सहजता, स्रोतहरुमा निरन्तर पहुँच, तथा शिक्षकसँगको राम्रो संचारजस्ता धेरै फाइदाहरु प्रदान गर्छ जसले गृहकार्य गर्न सजिलो बनाउँछ तर भौतिक कक्षाको तुलनामा यो सँधै सहज हुदैन । विशेषगरी गणितीय रेखाचित्र बनाउन, गणित, विज्ञान तथा स्वास्थ्य विषयका समस्याहरु समाधान गरी गृहकार्य बुझाउन कठिन हुन्छ ।

तालिका ५

गृहकार्य पूरा गर्ने सहजता

	एकदम राम्रो(%)	राम्रो (%)	संतोषजनक(%)	सहज छैन(%)
सामुदायिक विद्यालयका विद्यार्थी	६.४६	४५.१६	३५.४८	१२.९
निजी विद्यालयका विद्यार्थी	२५.८०	५४.८४	१२.९	६.४५

(स्रोत : फिल्ड सर्भे, २०८१)

तालिका ५ ले देखाएको आँकडा अनुसार निजी विद्यालयका विद्यार्थीहरु अनलाइन माध्यमद्वारा गृहकार्य पूरा गर्न बढी सहज देखिएका छन् । एकदम राम्रोमा २५.८० प्रतिशत निजी विद्यालयबाट केवल ६.४६ प्रतिशत सामुदायिक विद्यालयबाट देखिन्छ । राम्रोमा ५४.८४ प्रतिशत निजी विद्यालयबाट केवल ४५.१६ प्रतिशत सामुदायिक विद्यालयबाट देखिन्छ । तर संतोषजनकमा ३५.४८ प्रतिशत सामुदायिक विद्यालयबाट र १२.९ प्रतिशत निजी विद्यालयबाट देखिन्छ । समग्रमा भन्नु पर्दा निजी विद्यालयको विद्यार्थीको गृहकार्य गर्ने सहजता सामुदायिक विद्यालयको विद्यार्थी भन्दा राम्रो छ । यसका कारण निजी विद्यालयका बिद्यार्थीहरु सामुदायिक विद्यालयका बिद्यार्थीहरु भन्दा प्रविधिसँग बढी सरोकार राख्ने गरेको प्रष्ट हुन्छ ।

अनलाइन कक्षा तुलनामा भौतिक कक्षाको प्रभावकारिता

अनलाइन र भौतिक कक्षाको तुलना गर्दा प्रत्येक बिद्यार्थीको सोचाईमा, पाठ्यक्रमको प्रकृति तथा शैक्षिक सामग्री सम्प्रेषणमा भर पर्ने कुरा हो । भौतिक कक्षामा विद्यार्थीको शिक्षकसँग प्रत्यक्ष साक्षात्कार हुन्छ तथा आँखा थकित हुने समस्या हुदैन । श्रवण समस्या, प्रश्न सोध्न सक्ने समस्या हुँदैन तर अनलाइन कक्षामा शिक्षकको प्रत्यक्ष संलग्नता भएतापनि विद्यार्थीको संलग्नता नहुन पनि सक्छ ।

तालिका ६

भौतिक कक्षाको तुलनामा अनलाइन कक्षाको प्रभावकारिता

	एकदम राम्रो(%)	राम्रो (%)	संतोषजनक(%)	प्रभावकारी छैन(%)
सामुदायिकविद्यालयका विद्यार्थी	१९.३५	१६.१५	२५.८०	३८.७
निजी विद्यालयका विद्यार्थी	३.२२	५१.६१	२९.०	१६.१२

(स्रोत : फिल्ड सर्भे, २०८१)

तालिका ६ अनुसार मिश्रित जवाफ आएपनि सामुदायिक विद्यालयका विद्यार्थीले ३८.७ प्रतिशत मत प्रभावकारी छैनमा दिएको देखिन्छ । बिशेषरुपले सामुदायिक विद्यालयका विद्यार्थीहरुको अनुसार भौतिक कक्षाको तुलनामा अनलाइन कक्षाको प्रभावकारिता कम रहेको देखिन्छ । यसका कारण हुनसक्छ प्रत्यक्ष अन्तरक्रिया नहुनु, स्क्रिन थकान, प्रेरणा र उत्तरदायित्वको कमी, ध्यान केन्द्रित गर्न कठिनाई, परीक्षा र गृहकार्यको समस्या ।

विद्यार्थीहरुको मानसिक स्वास्थ्यको अवस्था

तनाव, चिन्ता, स्ट्रेस जस्ता मानसिक अवस्थाले सिकाइ प्रक्रियालाई असर गर्छ । राम्रो स्वास्थ्यले राम्रो सिकाइ तर्फ डोऱ्याउन सक्छ । जहाँ कोरोनाको डर ब्याप्त छ र परिस्थितिले कसैलाई दिनभर बसिरहन बाध्य बनाउँछ भने त्यहाँ तनाव अपरिहार्य हुन्छ । त्यसैले विद्यार्थीवर्गमा ब्याप्त तनावको बिचमा गरिएको अनलाइन कक्षालाई यहाँ प्रस्तुत गरिएको छ ।

तालिका ७

विद्यार्थीहरुको मानसिक स्वास्थ्यको अवस्था

	एकदम राम्रो(%)	राम्रो (%)	ठीकठीकै(%)	खराब(%)
सामुदायिक विद्यालयका विद्यार्थी	३२.२५	५८.०६	९.६७	०.०२
निजी विद्यालयका विद्यार्थी	२५.८	४५.१६	२२.५८	६.४५

(स्रोत : फिल्ड सर्भे.२०८१) २०८१)

तालिका ७ बाट निजी विद्यालयका विद्यार्थीको तुलनामा सामुदायिक विद्यालयका विद्यार्थीको मानसिक स्वास्थ्य राम्रो रहेको देखिन्छ । एकदम राम्रोमा ३२.२५ प्रतिशत सामुदायिक विद्यालयका विद्यार्थी र २५.८ प्रतिशत निजी विद्यालयका विद्यालयका विद्यार्थीको मानसिक स्वास्थ्य थियो भने राम्रोमा ५८.०६ प्रतिशत सामुदायिक विद्यालयका विद्यार्थी र ४५.१६ प्रतिशत निजी विद्यालयका विद्यालयका विद्यार्थीको मानसिक स्वास्थ्य थियो । धेरै कम अर्थात ६.४५ प्रतिशत निजी विद्यालयका विद्यार्थीहरुको अवस्था खराब रहेको पाइएको थियो । यसको कारण विद्यार्थीहरुले अत्यधिक तनाव लिएकोले स्वास्थ्य समस्या निम्तिएको थियो । अर्थात निजी विद्यालयका विद्यार्थीलाई पढनु पर्ने दवाब धेरै भएकोले पनि मानसिक स्वास्थ्य खराब भएको हुन सक्छ । तर सामुदायिक विद्यालयका विद्यार्थीको पढनु पर्ने, गृहकार्य गर्नु पर्ने दवाब कम रहेको हुनाले मानसिक स्वास्थ्य खराब नरहेको पाइएको छ ।

अनलाइन कक्षामा सहजता

अनलाइन कक्षामा घरमै बसेर अध्ययन गर्नु पर्दा धेरै जसो बिद्यार्थीलाई सहज हुन सक्छ तर गृहकार्यको पनि धेरै भार नहुने, कक्षामा जस्तो औपचारिक पोशाकमा उपस्थित हुन नपर्ने आदि कारणले गर्दा अनलाइन कक्षा सहज हुन सक्छ तर प्रविधिको प्रयोग, ईन्टरनेटको गतिका कारण कक्षा सहज नहुन पनि सक्छ । अनलाइन कक्षामा शिक्षकले पढाएका, बोलेका कुरा ईन्टरनेटको गतिका कारण प्रष्ट नहुन पनि सक्छ । कहिलेकाँहि बत्ती गएपछि अनलाइन कक्षा अवरुद्ध हुन सक्छ र शिक्षकले पढाएका कुराहरु प्राप्त नहुन सक्छ । यदि ईन्टरनेटको गति सहि छ भने सबैको एकनासको नहुन पनि सक्छ । यसैलाई आधार मानेर यहाँ अनलाइन कक्षाको सहजता प्रस्तुत गरिएको छ ।

तालिका ८

अनलाइन कक्षामा सहजता

	एकदम सहज(%)	सहज(%)	ठीकठीकै(%)	असहज (%)
सामुदायिक विद्यालयका विद्यार्थी	१९.३७	३५.४८	१६.१५	२९
निजी विद्यालयका विद्यार्थी	४१.९३	३२.२७	२५.८	०

(स्रोत : फिल्ड सर्भे,२०८१)

माथिका तालिका ८ बाट सामुदायिक विद्यालयका विद्यार्थीहरु बढी असहज देखिन्छ । यसका कारण विद्यार्थीहरुमा आमने-सामने कक्षा सिकाइ नहुनु, कम्प्युटरको स्क्रीनमा हेर्दा आँखाको समस्या निम्तिनु तथा आँखा थकित हुनु, साथीभाईहरुसँग खेल्न नपाउनु साथै गृहकार्य गर्नमा असहज परिस्थिति सिर्जना हुनुले गर्दा धेरै जसो सामुदायिक विद्यालयका विद्यार्थीहरु अनलाइन कक्षा प्रति असहजता देखाएका छन् । यसै सन्दर्भमा निजी विद्यालयका विद्यार्थीहरुको अनलाइन कक्षा बढी सहज देखिएको छ । यसमा विद्यार्थीको सहज पहुँच तथा बत्ती गएपनि ईन्भर्टरको प्रयोग गरिएको पाइएको थियो जसमा अभिभावकको अहम् भूमिका थियो । अर्थात विद्यार्थीलाई कुनै प्रकारले असहज नहोस् भनेर व्यवस्थापन गरेको पाइयो ।

ईलेक्ट्रोनिक उपकरणसँग सहजता

आजकल धेरै जसो विद्यार्थीहरु ईलेक्ट्रोनिक उपकरणसँग धेरै सहज भएको देख्न सकिन्छ । मोबाईल, ल्यापटप आदिको प्रयोग विना विद्यार्थी पढन पनि रुचाउँदैन । शिक्षकवर्गले पनि विद्यार्थीहरुलाई गृहकार्य दिँदा ह्वाट्सएपमा दिएको पाइएको छ । आजकल विद्यार्थीहरु अनलाइन च्याटमा शिक्षकसँग

प्रश्न उत्तर खोजेको पाइन्छ । तर पनि यसका अत्यधिक उपयोगले केहि असहज परिस्थिति निम्त्याउन सक्छ । यसैलाई लिएर तल उल्लेख गरिएको छ ।

तालिका ९

ईलेक्ट्रोनिक उपकरणसँग सहजता

	एकदम सहज(%)	सहज(%)	ठीकठीकै(%)	असहज (%)
सामुदायिक विद्यालयका विद्यार्थी	३२.२५	३५.१५	१६.१५	६.४५
निजी विद्यालयका विद्यार्थी	५४.८४	२५.८	१९.३६	०

(स्रोत : फिल्ड सर्भे,२०८१)

तालिका ९ अनुसार सामुदायिक विद्यालयका विद्यार्थी भन्दा निजी विद्यालयका विद्यार्थी बढि सहज भएको देखिएको छ । यो सबै विद्यार्थीको सोचाई, बानी परेको काम आदिमा भर पर्ने कुरा हो त्यसैले निजी विद्यालयका विद्यार्थीहरु बढि सहज देखिएका छन् तर सामुदायिक विद्यालयका विद्यार्थीहरुले आँखा थकित हुनु, साथीभाईहरुसँग खेल्न नपाउनु साथै गृहकार्य गर्नमा असहज परिस्थिति सिर्जना हुनुले गर्दा धेरै जसो अनलाइन कक्षा प्रति असहजता देखाइएको छ ।

शिक्षकवर्गको राय

शिक्षण प्रकियामा महत्वपूर्ण भूमिका खेलेका शिक्षकहरुले नयाँ प्रविधि, शिक्षण विधि, भर्चुअल कक्षाकोठा वातावरणमा अनुकुलन गर्नु पर्दा चुनौती थपिएकै हो । यस चुनौतीले सिक्ने अवसर पनि प्रदान गरेको छ। शिक्षकवर्गले जुम, गुगल मिट, माइक्रोसफ्ट टिम आदिसँग अवगत हुने अवसर प्राप्त गरेका थिए । हाम्रो जस्तो विकासशील देशमा प्रविधिको पहुँच धेरै कम मात्रामा रहेको, ईन्टरनेटको गति सुस्त रहेको आदिले गर्दा शिक्षकवर्ग पनि प्रविधिको पहुँचबाट टाढा रहेको प्रष्ट छ । यसका लागि २० जना शिक्षकहरुलाई समावेश गरिएको थियो । जसमा १० जना (महिला/पुरुष) निजी विद्यालयबाट र १० जना महिला/पुरुष) सामुदायिक विद्यालयबाट लिइएको थियो ।

तालिका १०

शिक्षकवर्गको राय

परिवर्ती	श्रेणी	आवृति	प्रतिशत
कोभिड-१९ अघि अनलाइन कक्षासँग परिचित हुने स्थिति	हो	६	३०
	होईन	१४	७०
शिक्षण प्लेटफर्मको प्रयोग	जुम	१०	५०
	गुगल मिट	६	३०
	माइक्रोसफ्ट टिम	३	१५
	अन्य	१	५
अनलाइन र भौतिक कक्षाको प्रभावकारिता	अनलाइन कक्षा	२	१०
	भौतिक कक्षा	१८	९०

(स्रोत : फिल्ड सर्भे,२०८१)

तालिका ५ बाट धेरै जसो शिक्षक कोभिड-१९ भन्दा पहिला अनलाइन कक्षासँग परिचित थिएन साथै ५० प्रतिशत शिक्षकले जुम प्रयोगमा ल्याएका थिए । ३० प्रतिशत गुगल मिट, १५ प्रतिशत माइक्रोसफ्ट टिम र ५ प्रतिशतमा फ्यूज मेसिन प्रयोग गरेको देखिन्छ ।अधिकांश शिक्षक अर्थात ९० प्रतिशतले भौतिक कक्षा नै प्रभावकारी रहेको दावी गरेको देखिन्छ । भौतिक कक्षामा विद्यार्थीहरुसँग अन्तरक्रिया गर्न सजिलो हुन्छ, गृहकार्य दिन/जाँच गर्न सजिलो हुन्छ तथा स्क्रीन थकाई पनि नहुने भएकोले भौतिक कक्षा सहज र प्रभाववकारी हुन्छ भन्ने राय देखियो ।

व्यवस्थापन समितिको राय

विद्यालय व्यवस्थापन समितिका प्रभावकारिता उनीहरुको सहकार्य गर्ने क्षमता, समुदायसँग प्रभावकारी रुपमा समन्वय गर्ने क्षमता, तथा बिद्यार्थीहरुको समग्र विकासमा केन्द्रित दृष्टिकोणमा निर्भर गर्दछ । बिद्यार्थीहरु शैक्षिक, सामाजिक तथा भावनात्मक रुपमा सफल हुन सकून् भन्ने वातावरण निर्माण गर्न यी निकायहरुको भूमिका अत्यन्तै महत्वपूर्ण हुन्छ । यसका लागि १० जना प्रधानाध्यापक, संचालक समिति तथा समन्वयकर्तालाई समावेश गरिएको थियो । जस अन्तर्गत ५ जना (महिला/पुरुष) निजी विद्यालयबाट र ५ जना (महिला/पुरुष) सामुदायिक विद्यालयबाट समावेश गरिएको थियो ।

तालिका ११

व्यवस्थापन समितिको राय

परिवर्ती	श्रेणी	आवृति	प्रतिशत
कोभिड-१९ भन्दा पहिले अनलाइन कक्षा संचालन	गरेको	०	०
	नगरेको	१०	१००
अनलाइन कक्षा /भौतिक कक्षाको प्रभावकारिता	अनलाइन कक्षा	१	१०
	भौतिक कक्षा	९	९०

(स्रोत : फिल्ड सर्भे,२०८१)

तालिका ६ बाट व्यवस्थापन समितिको राय अनुसार कोभिड भन्दा पहिला कुनै अनलाइन कक्षा नगराइएको तथा प्रभावकारिताको सवालमा ९० प्रतिशतले भौतिक कक्षा प्रभावकारी रहेको भनी राय प्रस्तुत गरेको देखिन्छ । व्यस्थापन समितिहरुले पनि विद्यार्थीहरुको भौतिक उपस्थितिलाई सकारात्मकरुपमा लिएको हुनाले अनलाइन कक्षालाई भौतिक कक्षाको तुलनामा कम प्रभावकारी ठान्नु सान्दर्भिक देखिन्छ । उनीहरुका अनुसार भौतिक कक्षामा विद्यार्थीको अवस्थावारे ज्ञात हुन्छ तर अनलाइन कक्षामा विद्यार्थी उपस्थित भएको/नभएको, बुझेको/नबुझेको थाहा पाउन मुश्किल हुन्छ । त्यसैले भौतिक कक्षाको विकल्प अनलाइन कक्षा हुन सक्दैन भने राय व्यक्त गरेका छन् ।

निष्कर्ष

यस अध्ययनले कोभिड-१९ महामारीको समयमा नेपालको शिक्षा क्षेत्र बिशेषत: विद्यालय स्तरमा पारेको प्रभावलाई परिस्थितिजन्य विश्लेषण गरेको छ र निजी तथा सरकारी विद्यालय बिचको तुलनात्मक अध्ययनले एक विस्तृत असरबारे खुलासा गरेको छ । विद्यार्थीहरु मध्ये बढी प्रतिशत महिला विद्यार्थीको रहेको देखिन्छ । यस महामारीले विद्यालय शिक्षामा पारेको प्रभावको तुलनात्मक विश्लेषण गरेको छ, विद्यालय बन्द हुँदा उत्पन्न भएका केही चुनौतीहरु औल्याएको छ तथा ती प्रभावहरुको व्यवस्थापनका लागि केही प्रतिक्रिया र सुझाव दिएको छ । अधिकांश विद्यार्थीहरुको तथा शिक्षकको प्रविधिमा पहुँच नदेखिएकोले यस संकटकालले प्रविधिसँग अवगत हुने अवसर प्रदान गरेको छ । नेपाल सरकारले आफ्नो शिक्षा मन्त्रालय अन्तर्गत ई-शिक्षा पोर्टल शुरु गरेको देखिनु सुखद कुरा हो । अब आवश्यक कुरा भनेको भैपरीलाई दृष्टिगत गदै राष्ट्रिय स्तरमा पाठ्यक्रम अनुसार पाठहरु, ई-पुस्तकहरु तथा अन्य शिक्षण सामग्रीहरुले सुसज्जित गर्नु पर्ने देखिन्छ । कोभिडका केहि सकारात्मक र केहि नकारात्मक असरहरुबारे उल्लेख गरिएको छ जुन समय सान्दर्भिक देखिन्छ ।

निष्कर्षमा, कोभिड-१९ महामारीले शैक्षिक क्षेत्रमा महत्वपूर्ण अवरोधहरु सिर्जना गरेको भए पनि यसले शैक्षिक परिदृष्यमा सकारात्मक परिवर्तनहरुलाई पनि उत्प्रेरित गरेको छ । यस अनुभवले विद्यालयहरुलाई भविश्यका चुनौतीहरुको सामना गर्न प्रविधिद्वारा सुसज्जित बनाईएको छ । यस अवधिमा सिकिएका पाठहरुले सामुदायिक र निजी विद्यालय दुबैमा शैक्षिक अभ्यासहरुलाई निरन्तर रुपमा रुपान्तरण र सुधार गर्नेछ । केहि सुझावहरु अन्तर्गत सरकारी तथा निजी विद्यालयहरुले डिजिटल पूर्वाधार, बिभिन्न समयमा शिक्षक-कर्मचारीहरुको तालिमको व्यवस्था, पाठ्यक्रम अनुकुलन, अभिभावकको

जिम्मेवारी, शिक्षामा समान अवसर तथा संकटकाल व्यवस्थापनको तयारीले गर्दा भैपरीमा कसरी व्यव्सथापन गर्न सकिन्छ भन्नेको जानकारी दिएर तयारी अवस्थामा रहन सिकाएको छ ।

संदर्भसूची

Allatta, J., & Myers, P. (2023, May 13). *You shouldn't be the only one talking in your digital classroom*. Harvard Business School Publishing.

Asim, M., Shrestha, R., Karki, S., & Thapa, S. (2020). COVID-19 pandemic: Public health implications in Nepal. *Nepal Journal of Epidemiology, 10*(1), 817–820. https://doi.org/10.3126/nje.v10i1.28269

Azzi-Huck, K., & Shmis, T. (2020). *Managing the impact of COVID-19 on education systems around the world: How countries are preparing, coping, and planning for recovery.* World Bank Blogs.

Bajpai, N., Bibermann, J., & Y. Y. (2019). *ICT for education: Lessons from China*. Centre for Sustainable Development.

Bhatta, P., & Gyawalli, S. (2021). Can online learning in Nepal outlive the COVID19 pandemic? *Online Learning in Nepal, 2*.

Chalise H.N. (2020) COVID-19 situation in Nepal, Arch. *Ment. Health, 4*(1), pp 033-034 doi:10.29328/journal.apmh.1001015.

Csorba, L. M., & Dabija, D.-C. (2024). The impact of the COVID-19 pandemic on students' future online education behaviour. *Heliyon, 10,* e39560. https://doi.org/10.1016/j.heliyon.2024.e39560

Dawadi, S., Giri, R., & Simkhada, P. (2020). Impact of COVID-19 on the education sector in Nepal: Challenges and coping strategies. *SAGE Preprints.* https://doi.org/10.31124/advance.12344336.v1

Diyal, S. B., & Pandey, R. (2024). Virtual teaching and learning activities in the schools during COVID-19 period: Use and effectiveness. *Innovative Research Journal, 3*(1). https://doi.org/10.3126/irj.v3i1.71031

Gahatraj, K. (2020). *COVID-19 and its impact on persons with disabilities in Nepal*.

Haug, M., Aasland, A., & Acharya, B. (2025). School responses to Covid-19 and inclusive education in Nepal. *Forum for Development Studies, 52*(3), 1–19. https://doi.org/10.1080/08039410.2025.2502341

Kamrujjaman, M., Sinje, S. S., Nandi, T. R., Islam, F., Rahman, M. A., Akhi, A. A., Tasnim, F., & Alam, M. S. (2024). The impact of the COVID-19 pandemic on education in Bangladesh and its mitigation. *Bulletin of Biomathematics, 2*(1), 57–84. https://doi.org/10.59292/bulletinbiomath.2024003

Kathmandu University, Guidelines for Online Teaching and Learning, 2020.http://soe.kusoed.edu.np/guidlines-for-online-teaching-and-learning/ (accessed jun. 19, 2020)

Pan S, (2021), Impact of COVID-19 lockdown on Higher education system in India, *IJMER, 10*(6),8.

Pandit, S. (2020). Sankatma nirantar sikai. *Gorkhaparta* (07 May). https://gorkhapatraonline.com/education/2020-05-06-13805.

Peter C Doherty, 2013, Pandemics: What everyone needs to know?

DOI:10.1093/wentk/9780199898107.001.0001

Tiwari, P. (2021), COVID-19 and *online learning in rural China: Challenges, impacts, and Opportunities (57). Edusanjal.* http://edusanjal.com/news/notice-regarding-online-education-tribhuvan-university/ (accessed Jun. 19,2020)

UNESCO (2020): *COVID-19: Impact on Education*. *UNESCO*,

Viner R.M., et al., (2020) School closure and Management practices during coronavirus outbreaks including COVID-19: a rapid systematic review, Lancer Child Adolesc. *Health, 4* (5), 397-404.

Doi: 10.1016/S2352-4642(20)30095-X.

JS Murarka Multiple Campus
Lahan, Siraha
Research Management Cell
Research Journal on Multi-disciplinary Issues, Volume 6, 2025 December

The reviewers are requested to review the articles based on the subsequent **Peer Review Report Form**. Yet, you are free to make comments on the article beside this checklist. We would be grateful if you could comment on the **Track Change tool.** Your comment will strongly be considered to select the article for publication.

Peer Review Report Form

Article No. (at the top of the paper):

S.N.	Peer Review Checklist	Reviewer's Remarks (Yes, No, or make comments)
1.	Does the title precisely reflect the content of the article?	
2.	Does the abstract (150-250 words) present an accurate article synopsis?	
3.	Are the keywords (5-7 words) appropriate?	
4.	Is the introduction appropriate to the article's subject?	
5.	Are the objectives/ purposes and research questions relevant, specific and suitable?	
6.	Are the literature and theories reviewed pertinent, and is it comprehensive?	
7.	Does the study's methodology (research design/methods, sampling, data collection/analysis tools, etc.) consistent with its aims?	
8.	Are the results and any statistical tests presented unambiguously (themes, tables, figures, graphs, etc.)?	

9.	Does the discussion comprehensively discuss the results with important literature?	
10.	Do the conclusions accurately reflect the results of the study?	
11.	Does the article add new knowledge to the existing knowledge base?	
12.	Is the paper free of grammatical or typographical errors with precise organization in terms of coherence and cohesion?	
13.	How well does the writer use the APA (6th edition) format in text-citation and referencing to avoid plagiarism?	

Reviewer's overall comments (if any)

……

……

Concluding judgment of the reviewer/s

Please, write **Yes/No** in the column of **Reviewer's Decision** with your observation.

	Categories	**Reviewer's Decision**
1.	Accept as it is	
2.	Resubmit after revision	
3.	Reject	

The Editorial Board

J.S. Murarka Multiple Campus

Lahan, Siraha (Nepal)

Tel.No. : 033-563252

Website : www.jsmmc.edu.np

Email : jsmmc2012@gmail.com

Fax : 033-561807

Rs. 300/-