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Enhancing school performance through whole school intervention: a case study

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Whole School Intervention (WSI) is a school improvement approach that engages the entire school community to enhance various aspects of the school, addressing the needs of every child and ensuring opportunities for success. This study, grounded in the theory of complex adaptive systems, investigates the implementation of the WSI approach in a private school in Nepal to assess its impact on school improvement. The central research question is: How does WSI improve the school system? The study examines multiple areas for intervention by involving members of the entire school community through a qualitative case study methodology. Various data collection techniques, including participatory needs analysis, in-depth interviews, focus group discussions, and video recordings, were employed to understand the school context and the transformation occurring during the intervention, which was carried out in four phases. The findings indicate that WSI served as a practical approach to school improvement by transforming leadership capacity. It shifted traditional authoritative leadership to distributed, democratic, and participatory practices. Additionally, WSI nurtured a positive school culture and supported teacher professional development, thereby improving pedagogical knowledge and skills, which, in turn, enhanced student learning outcomes. The collective efforts of all school stakeholders also contributed to maintaining a conducive learning environment, exemplified through initiatives like school gardening. The article concludes by emphasizing that empowering participation and fostering a long-term shared vision are critical for the sustainability of overall school improvement.

KEYWORDS

whole school intervention, school improvement, complex adaptive system theory, leadership capacity, positive school culture, teacher professional development

Introduction

“A school is a vulnerable place which is easily influenced by different activities that happen inside and outside the school” (Rajbanshi and Dahal, 2023, p. 130). School improvement is a process of educational change that enhances students’ learning by strengthening the institutional capacity for ensuring the change. Hopkins (2005) remarked that school improvement initiatives raise students’ achievement by focusing on the teaching-learning process and creating a learning environment. School improvement is a systematic, ongoing process and collaborative efforts to make the school leaders and teachers more capable of achieving the educational objectives of the school (Björkman, 2008). It aims to professionalize the school learning processes so that students can achieve high-quality education. It is a systematic process of self-reflection on internal and external objectives and results of internal and external monitoring procedures (Merki, 2014). So, during school improvement initiatives, it is essential to involve the whole school community, including school administrations, teachers, staff, students, parents, and the broader community, in creating and refining a shared

vision, conducting rigorous self-evaluation, creating a well-developed plan for improvement, and establishing consistent ways of measuring and monitoring changes over a sustained period for yielding positive results, such as effective school practices and improved students' outcomes (Tran, 2021).

School is a complex system where multiple components are interconnected and continuously interact dynamically (Cilliers, 2020). School improvement is a complex, long-term, multifaceted, multi-layered, multi-dimensional process, and it covers a wide array of activities with the collaborative endeavors of all stakeholders. The school improvement process may differ from one individual school to another as every school is unique regarding its context, philosophy or principle, school culture and climate, ethos, leadership practice, availability of resources, and stakeholders' participation on which the school is founded (Barber and Mourshed, 2016). Therefore, "It is critical to identify the areas that require improvement and to prioritize these through quality, evidence-based, and data-informed process" (Tran, 2021, p. 1). Many schools face challenges related to infrastructure, student engagement, low quality of teaching and learning, lack of availability of resources, traditional pedagogical practices, and overall school management. Hence, there is an urgent call for whole school intervention (WSI) for developing high-performing schools to address the challenges caused by the uncertain, unpredictable, complex, and constantly changing times of the digital era and globalization, characterized by the rapidly increasing knowledge economy of the 21st century.

WSI is an approach to school improvement through the participation of the whole school community that focuses on improving multiple aspects of school, such as student's academic outcomes, social-emotional well-being, behavioral management, and school environment, among others, to address the needs of every child and ensure every child has an opportunity to succeed. Goldberg et al. (2018) argue that WSI frequently encounters problems with implementation, so for practical, prosperous, and sustainable school intervention, it requires substantial planning and support beyond the classroom, connecting and extending wider communities, including families and local people respecting the local context and the school ethos. WSI produces the most successful results when integrated into daily practice and school culture. WSI seeks to engage the whole school community and reinforce skills even outside the classroom (Goldberg et al., 2018).

Education in Nepal has undergone significant changes over the years, with increasing emphasis on improving the quality of education. To meet the pace of time accelerated by globalization and technological advancement, the government of Nepal has initiated various positive endeavors to enhance the quality of education through different policies and plans to make it more scientific, innovative, and skill-oriented by promoting entrepreneurship skills and employability through institutional capacity building and local stakeholders' participation. The *Basic Primary Education Master Plan (BPEP)* (1997–2002) was implemented to improve educational planning, policy formation, coordination, research, and evaluation by promoting the effective participation of real stakeholders in the educational decision-making process (MoE, 1997). *School Sector Reform Program (SSRP)* (2009–2016) was implemented focusing on the three pillars of education, including access, inclusion, and quality, which was structured as Basic Education (1–8) for literacy and lifelong learning and Secondary Education (9–12) for technical and vocational training

(MoE, 2016). Likewise, the government of Nepal executed '*The School Sector Development Plan*' (SSDP) (2016/17–2022/23) "with the vision to contribute in the development of self-sustainable, competitive, innovative, and value-oriented citizens for the socio-economic transformation of the nation" (MoE, 2016, p. 7). It has further set the goal to produce skilled and productive citizens for local and international employment by creating a skilled workforce familiar with modern technology.

These shreds of evidence show that the Government of Nepal initiated various positive endeavors like localizing the educational planning and implementation within the school education sector at all levels by involving local stakeholders in planning, implementing and monitoring, forming and reinforcing the role of school management committees (SMCs) and Parents-Teacher Associations (PTAs), and creation of the School Policy Committee (SPCs). In the same way, taking education as a driving force for sustainable development of the country through social transformation, the Sustainable Development Goal (SDG)—4, *2030 Nepal National Framework* has envisioned ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all to develop educated, civilized, healthy, and capable human resources able to contribute the realization of "Prosperous Nepal and Happy Nepali" (Government of Nepal, 2019, p. 29). Moreover, to transform this vision into reality, it has aimed to create an enabling environment for implementing SDG—4 in the country. From a broader perspective, it has further aimed at promoting entrepreneurship skills to contribute to constant livelihoods, employability, economic development, strengthen information and communication technology (ICT) application, scientific orientation, innovation, and knowledge creation to foster the development of a knowledge-based economy and building institutional capacity to enhance the delivery of quality education (Government of Nepal, 2019). By achieving these goals, the Government of Nepal aimed to transform Nepal from a least-developed country to a developing country by 2022, becoming a middle-income country by 2030, and elevate "Prosperous Nepal, Happy Nepali" by 2043 (Government of Nepal, 2019, p. 2).

However, despite several efforts to improve the school, the evidence shows that the desired outcome has not been achieved due to Nepal's conventional teacher-centered, textbook-based, and exam-oriented educational practices. Besides some outstanding schools, the World Bank (2017) reports that teaching-learning practices in Nepal are too focused on memorization and text regurgitation, which hardly allows space for developing soft-skills like critical thinking and analysis skills in the learners. Likewise, Mathema (2007) states that there is a total absence of support for monitoring and supervising the schools despite the Ministry of Education's provision of school supervisors, resource specialists, and training staff. He further says that role confusion exists among the headteacher, teachers, SMC, school supervisor, and district educational officer. In other words, nobody is accountable for the school's poor performance.

This evidence indicates that the Government of Nepal has developed and implemented several educational plans and policies for institutional capacity building to improve education quality and student learning achievement. Still, the anticipated results have not been achieved so far. Then, several questions arise regarding where the problem lies. Is there a problem at the policy level or implementation? Is there a problem in school leadership or teaching-learning practices? Is there a problem in infrastructure and resource management or

stakeholders' participation? All these questions need to be answered, and the government needs to gear up its efforts to enhance the institutional capacity of the schools, involving all its stakeholders and exploring more comprehensive school-community partnerships to transform educational institutions and make school leaders more effective and responsible.

This study reports how a private school in Kathmandu Valley, Nepal, transformed through WSI and improved students' learning outcomes. The school has hosted around 400 students, mostly from middle-class families, and provided job opportunities for 40 people, including 25 teaching and 15 non-teaching staff. The school has been running with the joint venture of family members in a leased land area with prepack buildings in around two and a half to three ropanees (1526.22 square meter land area), which has created problems in conducting various curricular and extracurricular activities and building a conducive learning environment. So, this research aims to report the WSI process and how it contributes to school improvement. The following research question guided this study.

- What is the process of implementing whole school improvement (WSI), and how does it transform the school?

Although WSI has a broader scope in school education, this study has been limited to enhancing school performance through WSI involving the whole school community—school administrations, teachers, students, parents, and the school community.

Complex adaptive system theory as a theoretical referent

Complex Adaptive System (CAS) theory is a relatively new approach to making sense of natural phenomena, including human responses (Ellis and Herbert, 2011). The ideas of CAS are associated with a new way of thinking that describes recursive interactions between the multiple layers of systems. The complex adaptive system comprises several interconnected components interacting dynamically (Cilliers, 2020) non-linearly, exhibiting rich behavioral patterns and competition constantly changing and evolving, and creating unbalanced environmental conditions (Ahmad et al., 2024). Therefore, CAS is an approach built on the systems theory with its underlying characteristics such as emergence, connectivity, interdependence, and dynamic feedback loops (Fidan and Balci, 2017). The school as a social complex adaptive system is more context-specific, and its response is not always the same because it depends on the different times and circumstances.

CAS encompasses a population of rules-based agents situated in multi-level and interconnected systems in a network that depends on individual agents' behavior (Keshavarz et al., 2010). The agents in CAS are often multiple, constantly changing, independent, highly interactive, learning, and adaptive, which "act based on the combination of their knowledge, experience, feedback from the local environment, local values, and formal system rules" (Keshavarz et al., 2010, p. 1468). So, they emphasize individual agents and their role in shaping the system with the characteristics that agents are multiple, dynamic, independent, interactive, learning, and adaptive. They act based on knowledge, experience, feedback, values, and formal rules. It reveals a pattern of

interaction between the multi-layers of agents changes over time in the course of interacting and adapting to each other within a constantly changing environment, which is often novel and hard to predict. As a result, CAS has a pretty open system with fuzzy boundaries that is highly context-specific and relies on history, time, and space, including its position and proximity with distributed control.

In contrast, Chan (2001) highlights distributed control, connectivity, co-evolution, sensitive dependence on initial conditions, emergent order, far from equilibrium, and state of paradox, among others, as the critical characteristics of the complex adaptive system. Unlike Keshavarz et al. (2010), Chan (2001) highlights systemic properties and key characteristics that define the system's adaptability and complexity where he identifies distributed control, connectivity, co-evolution, emergent order, sensitivity to initial conditions, disequilibrium, and paradoxical states. It reveals that there is no centralized controlling process governing the system's behavior or distributed (network) control rather than centralized, hierarchical control (Keshavarz et al., 2010) due to the inter-relationship, interaction, and inter-connectivity of the diverse components within the system. This interaction results in the co-evolution of the components based on their interaction, mainly with the concept of fitting into the existing landscapes due to survival strategies. From the above discussion, it can be concluded that both perspectives contribute to understanding CAS, but Keshavarz et al. (2010) provide a bottom-up, agent-driven view, whereas Chan (2001) takes a top-down, systemic approach. Integrating both perspectives offers a more comprehensive understanding of CAS in various domains.

Due to the interconnectivity and interdependency, minor changes can have a surprisingly profound impact on overall behavior or vice-versa, and sometimes even a massive upset to the system may not influence it (Chan, 2001). Because of the constant interplay or action and reaction of the individual agents in the form of competition and cooperation among the agents themselves, there is always the possibility of emergent behavior in complex and unpredictable phenomena resulting in some global property of pattern, something different from the individual components and far from equilibrium (Chan, 2001), which could not be predicted from the understanding a specific component for example, a new form of education, economy, or ecosystem. Several studies have indicated that the impact of action and reaction among the heterogeneous agents within the complex adaptive system can result in continuous adaptation with both positive and negative effects (Keshavarz et al., 2010), characterized as the state of paradox, for example, stability or instability, competition or cooperation, and order or disorder, among others (Chan, 2001).

For example, the school can be discussed as a complex adaptive system shaped by continuous adaptive interplay among the numerous heterogeneous components, such as principal, administrative staff, teachers, students, parents, and community people. It results in the emergence of school culture and climate, innovation and pedagogical changes, academic performance trends, organizational reputation due to school plans, policies, school physical infrastructure, teaching-learning environment, and facilities, curriculum, instructional materials, school ethos, and social environment as internal influences and Government policies, technological integration and societal change external influences. So, schools are open social systems that endeavor to survive and thrive in contemporary, ever-changing, and unpredictable environments.

Case study as a research method

The qualitative case study examines a particular subject, often in a real-life setting, and studies single or multiple complex phenomena in a natural setting (Crowe et al., 2011). This study employed a case study to explore the proposed school in terms of implementing whole-school intervention. As noted by Fidan and Balci (2017) in their notion of CAS, this study explored a school as complex system with a high level of diversity in terms of its multiple stakeholders with diverse backgrounds and opinions, which sometimes creates difficulties in reaching a joint agreement. Hence, to gain an in-depth understanding of school status and identify the existing challenges in the school, we focused on the various key components of whole school intervention that include leadership practices, students' learning outcomes, teacher professional development, creating positive school culture, community involvement, school gardening, and sustainability of school improvement for the whole school intervention. As the previously existing working hours had created some challenges in managing the transformational changes for teachers, school formulated necessary school-based policy guidelines extending the teachers' working time from 9 am to 5 pm (earlier it was 6 hours working time from 9:30 am to 3:30 pm) as a contextual factor to address the time management issue. Consequently, all the teachers could have sufficient time for curriculum planning, preparing required instructional materials, attend the sharing circle, etc.

A case study explores real-life phenomena in depth and with a purposeful focus on achieving saturation (Dahal et al., 2024). Purposive sampling was used to select the research participants, including teachers, parents, and students of the action school. All together 31 participants were chosen from diverse groups representing the whole school population, representing both male and female ratios. Multiple sources of data collection techniques were employed

to gain a detailed and nuanced understanding of the subject matter (Rashid et al., 2019). We collected data from participants conducting workshops, focus group discussions (FGD), field notes, formal and informal conversations, and journal entries. The interviews were audio recorded, transcribed, and translated before data analysis. Data were analyzed and interpreted by giving pseudonyms to participants with their informed consent under several themes covering the critical components of whole school intervention.

Whole school intervention process

Despite some challenges such as the unwillingness of teachers to come out of their comfort zone, heavy workload, lack of enough time for research and curriculum planning, limited instructional resources, and barriers in the classroom setting, implementation of WSI was possible due to continuous motivation, discussion and sharing with participants. The intervention process was divided into four main phases, completed in the academic year 2022/2023, with each consecutive phase of 3 months. Figure 1 below illustrate the phases of the whole school intervention process.

Phase—1 (preparatory phase, April–June): We conducted a participatory needs assessment during the preparatory phase by employing multiple sources of data collection to gain an in-depth understanding of the action school. We identified several issues and challenges in various areas, including the weaker sense of a shared vision, pedagogical practice, teacher professional development, instructional materials, assessment, leadership practice, decision-making process, community involvement, and teachers' turnovers despite the school's reputation for academic excellence.

Accordingly, a 31-membered WSI core team (CT) was formed by involving 13 teachers having 5 years of teaching experience (seven

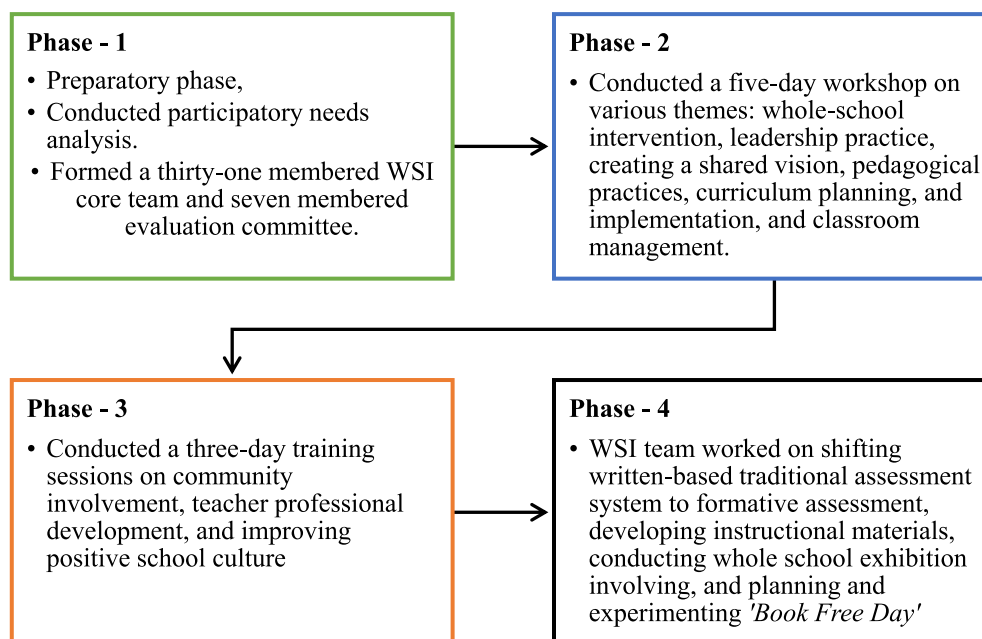


FIGURE 1
Phases of the whole school intervention process.

females and six males), nine students (five girls and four boys) from grades eight, nine, and ten and nine parents (five females and four males), whose children have been studying there for more than 5 years including Parents-Teachers Association (PTA) chair. All the participants had at least 5 years of involvement in the school in different roles. Likewise, a seven-membered Evaluation Committee (EC) was formed, including a university professional researcher, principal, SMC chair, finance head, teacher representative, and parent representatives to support and monitor the intervention initiatives. The primary responsibilities of the Evaluation Committee (EC) were to help the WSI team, manage the necessary resources, and monitor and evaluate the school improvement initiatives conducted by the WSI team.

Phase—2 (July to September): Based on the participatory needs analysis and identification of the problems existing in the school, the second phase of whole-school intervention started with a five-day workshop conducted on various themes such as whole-school intervention, leadership practice, creating a shared vision, pedagogical practices, curriculum planning and implementation, and classroom management. The first-day workshop was focused on the orientation of the WSI process for the whole school transformation, its objectives, and areas of intervention, such as the importance of creating a shared vision, leadership practice, teacher professional development, teaching and learning, assessment, resource development, community involvement, nature of WSI, challenges and possible outcomes because school improvement is the collective action of all stakeholders (Brown et al., 2021).

The shared vision is a foundation for implementing and sustaining educational changes (Krijnen et al., 2022). Hence, the second day workshop concentrated on creating a shared vision for the school and a positive school culture. The workshop started with the group division of the participants based on their subject areas and competency, keeping the learners at the center. Teachers discussed various agendas for enhancing students' learning by creating a secure, child-friendly, and welcoming learning environment, a home-like, trustable school culture with open and collaborative decision-making through multi-stakeholder participation (Leite et al., 2024). They also discussed the possible strategies and action plans for change.

Several studies show that teachers' content knowledge and pedagogical practices significantly impact students' academic performance (Sarder and Haider, 2023). The third-day session focused on effective pedagogical practices for transforming teacher-centric, textbook-based one-way lecture method, exam-oriented, and rote memorization into the student-centered, practical-based, constructivist approach of activity-based learning, project-based learning, integrated with ICT for promoting 21st-century life skills, such as communication, collaboration, creativity and critical thinking, problem-solving, leadership and management skills, and innovation and research skills (Partnership for 21st Century Skills, 2009). The WSI team worked together on planning various instructional activities, project works, and strategies for enhancing ICT integrated student-centric pedagogical practices.

Likewise, the fourth-day workshop focused on curriculum planning and implementation. The primary purpose of this workshop was to transform traditional pedagogical practices through theme-based, activity-based curriculum planning and implementation. The participants had rigorous discussion on curriculum planning and designing various student-centric instructional activities. Under the

guidance of a professional researcher as the facilitator, the team of teachers worked together on curriculum planning and implementing them in the classroom. Adhikari (2021) argues that "a well-managed classroom is a powerful motivation for students' learning" (p. 45). So, creating a collaborative, cooperative, child-friendly, and culturally responsive learning atmosphere in the school is necessary. The fifth-day training session focused on the classroom management strategies, in which all the participants discussed and shared various classroom management strategies. As a practical application, the participants worked together to decorate classrooms with different subject corners and seating arrangements, and with a classroom library.

The WSI team completed the second phase of the whole school intervention, along with monitoring and evaluation of the EC, and it concluded with its reflection on all school improvement initiatives. Furthermore, WSI team reviewed and critically analyzed overall activities and planned for the third phase of the WSI project, learning the lessons from past experiences.

Phase—3 (October to December): The third phase of the whole school intervention project began with three-day training sessions on community involvement, teacher professional development, and improving positive school culture for all the teaching faculties in the school. The first-day training session focused on the teacher's professional development (TPD), which is considered one of the key components of the school improvement project. They discussed on various strategies for TPD, WSI team formed a 'sharing circle,' also known as 'the talking circle' or 'dialogue conference,' a unique way of bringing people/participants together to discuss events, ideas, and stories (Rieth, 2023) for open discussion, assessment, evaluation, problem-solving, and decision-making.

Furthermore, as community involvement is essential for sustainable school improvement initiatives (Filho and Brandli, 2016), the second-day workshop focused on various strategies for promoting partnerships with different local agents like social or volunteer organizations, youth clubs, entrepreneurial organizations, corporate houses, media and health professionals, and other higher educational institutions (Gaillard et al., 2020). In addition, intending to promote a positive and welcoming school culture, the WSI team worked together on the formation of various child clubs, such as literature club, environment club, engineering clubs, arts and crafts, quiz club, entrepreneurship club, dance, and music club with students' leadership in support of the concerned subject teachers for providing ample opportunities for all the learners for the holistic development depending on the personal needs and interests. The WSI team renovated the school library to promote reading culture among students. It developed a classroom library in each classroom in collaboration with school administration with the provision that each student buy, read, review, and share at least two books per term. Level-wise parent meetings (grades 1–3, 4–7, and 8–10) were called for the rigorous discussion among the parents presenting on the concept of classroom libraries, the importance of promoting reading culture in the students, possible challenges, and benefits. Taking the informed consent from parents, the school started the concept of the classroom library and requested all the concerned parents to support this project. Moreover, WSI team oriented students, motivated, and supported them in buying extra books, reading, reviewing, and conducting book talk sessions regularly as part of day-to-day teaching-learning practices.

Moreover, realizing that classrooms were narrow and congested, which created difficulties in conducting various hands-on activities, the school administration renovated one of the school buildings, making

more spacious classrooms and additional rooms for subject labs, science, and computers. In addition, school gardening practice became another milestone initiated in the school in the joint effort of teachers, students, and parents. Despite the small and congested paved land area of school premises, with the vision of making the school a beautiful and peaceful place like a garden, all the students and teachers collected waste materials like buckets and vases, prepared soil and manure, planted a variety of evergreen and flowering plants alongside the school building, office, and classrooms which drastically improved the school environment. These club-based activities and school gardening proved to be the cornerstone for enhancing the learning environment. Thus, WSI team concluded the third phase of WSI with active monitoring and evaluation of EC and critical reflection on the overall school improvement initiatives and their impact on school improvement and the continuity of the previous programs and activities.

Phase—4 (January to March): Along with the critical reflection and continuity of previous initiations, the fourth phase of WSI project focused on shifting the conventional method of written-based summative exams four times a year to a formative assessment in the form of a continuous assessment system developing instructional materials, conducting whole school exhibition for showcasing students' learning achievements involving whole school community, and planning and experimenting 'Book Free Day' once a week, where students were involved in the various practical based activities, such as club-based activities, designing project works, field visits, library study, reviewing books and sharing with colleagues, for the forthcoming academic session, 2023/24. The education process involves a complex nature of what to teach, how that content should be taught, and how that teaching-learning is to be assessed (Brown, 2022). Assessment involves the process of gathering and interpreting information about the level of students' learning achievement, which is used to identify the strengths and weaknesses of an individual student to provide specialized support in their learning (Yambi, 2018). So, the WSI team trained all the teachers' team in designing and implementing formative assessments. Under the guidance of the facilitators, the teachers' team worked together to develop theme-wise rubrics for the formative evaluation, which aimed to improve the teaching-learning process involving feedback to inform students' performance (Azis, 2012). As the written-based traditional assessment system has a deeply rooted value in the Nepalese education system, the WSI team developed a blended assessment model with 50% CAS and 50% written exam-based assessment.

Likewise, the effective utilization of instructional materials plays a crucial role in enhancing curriculum execution and aiding educators to achieve their learning goals in their teaching-learning procedure because "students tend to understand better and remember what they see rather than what they are told" (Evermeld and Andala, 2023, p. 56). The WSI team developed the necessary instructional materials for effective teaching-learning because inadequate instructional materials can severely hamper effective teaching-learning. Thus, the WSI team completed the WSI process by working on multi-dynamic aspects of school improvement through action reflection and continuing several previous projects.

Findings and discussion

Whole school intervention and its resultant impact in transformed teaching-learning practices and students' learning outcomes showed

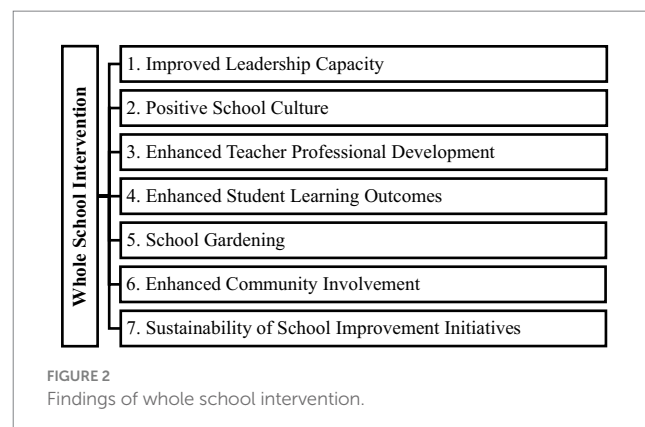
that WSI is a practical approach to school improvement. Based on our intervention experiences of working with the WSI team, seven themes emerged as significant findings: improved leadership capacity, teacher professional development, positive school culture, teaching and learning, community involvement, school gardening, and sustainability of the school improvement initiatives. The intervention improved the teaching-learning environment and students' learning outcomes. Figure 2 below illustrates the findings of whole school intervention.

Improved leadership capacity

The significant achievement of the whole school intervention with stakeholders' support resulted in improved leadership and its overall impact on the quality enhancement of the school. Gaillard et al. (2020) noted that leadership played a significant role in overall school improvement initiatives, such as creating a shared vision, encouraging stakeholders' participation in decision-making, and accountability. The school principal shared that he has improved his leadership practices from centralized top-down and authoritative approaches to more democratic, distributed, and inclusive processes that transformed the school's teaching-learning environment. The principal revealed:

Earlier, I was the only person who made decisions. However, leadership power has now been distributed among stakeholders, e.g., subject heads, the PTA Chair, and the SMC Chair. Our leadership practice has been changed from single leadership to multiple. Consequently, I have found that team spirit has increased, stakeholders have democratic participation and take ownership of the school improvement initiatives. As a result, now it has been easier to run the school.

The principal's reflection indicates that WSI has transformed his leadership practice from centralized traditional authoritative into distributed, democratic, and multiple leadership practices, which resulted in increased team spirit with stakeholders' democratic participation taking ownership of the school improvement initiatives. The result reinforces Cilliers (2020) argument that recursive interactions between the multiple layers of systems improve it. These findings reinforce that the organizational/leadership power needs to be distributed among the other stakeholders, shifting from single



authoritative into distributed multiple leadership practice because there is distributed (network) control rather than centralized, hierarchical (Keshavarz et al., 2010) due to the inter-relationship, inter-action, and interconnectivity of the diverse components within the school system. Moreover, participatory distributed leadership plays a vital role in increasing the team spirit and democratic participation of the stakeholders and taking ownership of the school improvement initiatives. Freire (1970) argues that people are motivated about their work if they are involved in decision-making about how the workplace is operated, leading to a more collaborative environment and making it easier to run the school.

Toikka and Tarnanen (2024) argue that having a shared vision is a central component of the school development endeavor and the change process targeting achieving a far-reaching objective within the learning organization. As a potential outcome, the WSI created a shared vision of school improvement as a driving force for the successful execution of long-term educational innovations, strategies, and programs for school improvement and its sustainability. The school leaders became better equipped with a clear, far-reaching, long-term vision and mission, actively involved the whole school community in decision-making, planning, and implementing school improvement programs and activities, and improved the learning environment with the collaborative efforts of all stakeholders. In addition, the leadership also became more cohesive and effective in implementing school-based policies and fostering a positive school culture, which enhanced overall school performance.

Positive school culture

Whole school intervention (WSI) resulted in an improved and positive school culture regarding collaboration, sharing, and knowledge exchange between teaching and non-teaching staff and students in the school. Matti et al. (2025) argued that the real motivation for improvement came not from outside but ‘within’ the school culture, which comprises deep patterns of values, beliefs, traditions, and norms built over one year of school improvement initiative. The school principal reaffirmed Matti et al. (2025) that Due to the continuous meetings, open discussions and sharing their challenges and success stories in ‘sharing circle,’ I, as a first author, have seen positive relationship among the all teaching and non-teaching staff, teachers and students. This implies that positive relations among the school community have developed. Likewise, one of the parents, Mr. Bogati, shared his experience that the WSI project has improved the school environment and made students feel at home. He argued, “Now it has been like a home where our kids get several opportunities for developing life skills through various club-based activities in ‘Book Free Day.’ All the teachers, students, and sometimes parents work together in various meaningful activities.” Another parent, Tara, added that WSI has successfully motivated her children in their studies. She revealed: “I have found my children motivated in their studies and excited to be involved in several practical activities in the school.” It reinforced the idea of Fidan and Balci (2017), who argued that the emergence of new characteristics is possible due to interconnectivity, interdependence, and dynamic feedback loops among the various components of the school system. Thus, WSI significantly contributed to the emergence of a positive school culture by creating a conducive, child-friendly, and home-like welcoming learning environment with

heightened student motivation for learning. WSI promoted a collegial relationship between the school leaders and teachers based on open communication and trust, oriented towards learning, sentiment, and a sense of belonging (Schein, 2010). Promoting a positive school culture in the school became helpful in creating space for continuous teachers’ professional development.

Enhanced teacher professional development

“The quality of education cannot be higher than the quality of teachers” (Bautista and Ortega-Ruiz, 2015, p. 242). Therefore, there is a common understanding among policymakers, scholars, and educators that enhancing teacher professional development (TPD) is a cornerstone to achieving the goals of school improvement (Desimone et al., 2002). Aligning with the idea of Bautista and Ortega-Ruiz (2015), the Vice-Principal confessed that due to the ongoing teacher training opportunities, continuous support, regular monitoring, and evaluation, WSI proved to be a milestone in empowering the entire teacher team by equipping them with the necessary knowledge and skills. He claimed:

While working as a part of WSI, I think my professional skills have been developed. I feel confident in conducting various activities in the school, including parent seminars and project work design, among others. In addition, I have seen my entire teacher team empowered. Now, they can design resources for their classroom contents. Their classrooms have also been well managed and beautifully decorated with different subject corners. Moreover, I have seen them being more professional and responsible and taking ownership of the school improvement projects.

Adding to this, Basanta (one of the students from grade ten) shared his experience of change in teaching and learning practices from textbook-centric conventional methods to activity-based learning with ample use of instructional materials in his classroom. He revealed:

Earlier, we had a textbook-based, teacher-centric, one-way monotonous, lecture-based, and rote memorization of the contents where learning was mainly focused on the preparation of exams. But now, along with the implementation of WSI, I have found that teachers’ teaching style has been changed from theory-based to practical, integrating various hands-on activities with ample instructional materials for holistic development.

Basanta’s reflection indicates that as one of the potential outcomes of WSI, teachers’ professionalism has been drastically improved, enabling them to shift their teaching practices from traditional lecture-based methods to implementing various hands-on activities integrating instructional materials. As noted by Chan (2001), the constant interplay or action and reaction of the individual agents in the form of cooperation among the agents themselves, the emergence of improved behavior, something different from the individual components and far from equilibrium, resulted in pedagogical change. Empowering teachers to enable them to act in the digital era of 21st-century complexity with

uncertainty, insecurity, and an unknowable future (Ling and Mackenzie, 2015) is necessary to build the capacity to design and implement instructional materials and classroom management for the holistic development of students. Moreover, the continuous interplay among the WSI team in training, workshops, professional sharing and discussions, regular monitoring, and evaluation significantly improved the quality of education and teachers' continuous professional development in the action school. As the reciprocal relationship exists between the teacher's professional development and students' academic achievement (Niemi, 2015), it is necessary to create the conditions for continuous professional development and motivate the entire team of teachers for their life-long learning, which is one of the fundamental requirements of the school improvement process (Niemi, 2015). As teacher professional development is directly associated with student learning outcomes, teachers' continuous professional development enhances the student's learning outcomes.

Enhanced students' learning outcomes

The major concern of WSI was to boost students' achievement, and the intervention resulted in the desired outcome. Binita, a student from grade ten, shared that, unlike traditional teacher-centric teaching-learning practices, WSI became fruitful for her to shift the focus of learning from just reading, writing, and passing exams to exploring career goals. She claimed, *"Most students previously focused on reading, writing, and passing exams. However, the WSI project helped us explore our career goals by involving us in club-based activities such as 'Bagless Book Free Day' and 'School Exhibitions.'"* Similarly, Ankita (another grade nine student) shared that the WSI project helped her learn practical life skills, like cooking, gardening, and reading habits. Likewise, regarding his experience of being involved in the school exhibition, Sahil, a student from grade eight, reinforced what the OECD (2018) argued that the exhibition effectively promoted various practical life skills and brought his inner skills out. Sahil shared:

School exhibitions allowed me to exhibit my creations in front of a mass of people, including my parents, which helped me develop several life skills, such as presentation skills, self-confidence, communication and collaboration skills, technical and creative skills, and leadership and management skills. In other words, it helped me greatly bring my inner skills out, and I felt so happy to present my design and creation.

Sahil's revelation indicated that WSI became a foundation for creating various learning opportunities for students to develop multiple life skills as per their needs and interests, motivating them in their study and developing several practical life skills through various programs and activities in the school. As a potential outcome, WSI resulted in enhancing students' learning outcomes by equipping them with different knowledge and skills, such as collaboration, critical thinking, communication, problem-solving, creative thinking, leadership and management, learning to learn, and self-regulation, developing social and emotional skills, rather than just knowledge acquisition. The primary concern of whole school intervention was to enhance students' learning (Gericke and Torbjörnsson, 2022) and

equip them with broader knowledge, skills, attitudes, and values that are attained through WSI in a private school in Nepal.

School gardening promotes community and learning

School gardening is another positive outcome of WSI. Despite the narrow and paved land within the school premises, the WSI team promoted school gardening as an integral part of WSI. The central purpose is to create a conducive and nature-friendly learning environment in the school. The principal claimed that maintaining sustainable school gardening was possible with the collaborative efforts of all stakeholders, which created a naturally beautiful, peaceful, and greenery learning environment in the school. He revealed:

We are guided by the philosophy that school should be beautiful and peaceful like a garden and neat and clean like a hospital, which has been a grand success in the context of our school. All the teachers, students, and non-teaching staff were actively involved in the gardening practices. You can see greenery and flowers everywhere within the school premises, and the toilets and playground are clean. The school has been like a beautiful garden, adding natural beauty and positive vibrations to the whole school family.

The principal's expression indicates the importance of gardening in maintaining the school's beauty and developing positive vibrancy. School gardening activities and ecological mindfulness are closely related, promoting environmental awareness among the students (Baral, 2021). School gardening may have varying purposes. A science teacher, Kushal highlighted the importance of school gardens for academic purposes, mainly in teaching science. He argued, *"Now we have a variety of plants and flowers which have not only added the natural beauty of the school but also it has been like a living laboratory for our students."* Furthermore, he added, *"The greenery and variety of plants are also helpful in developing positive psychology, and we should make our school beautiful, attractive, and naturalistic, which motivates students to learn."* The above discussion indicates that schools need to initiate school gardening practice by integrating it with curriculum contents and involving all the school family members in looking after it for sustainable development that promotes community involvement in the school improvement initiatives.

Promoted community involvement

Another prominent achievement of WSI was the community involvement in the school improvement initiatives. Following the idea of Strickland (2016), the school collaborated with various stakeholders, such as individuals, organizations, business houses, NGOs, and local authorities, to promote the students' social, emotional, physical, and intellectual development. Accordingly, the school joined hands with several professional organizations, like Activity-Based Instruction Nepal (ABI Nepal), for curriculum planning and implementation, TPD, resource development, and holistic school improvement. NCMAS, for abacus and handwriting; Robotics Association of Nepal, for robotics and innovation; ITE, for taekwondo; local television,

business houses, agricultural farms, as well as local religious and social organizations for direct or indirect collaboration in the whole school improvement initiatives. Moreover, the WSI team promoted a collaborative partnership among the teachers, parents, students, and community through various meetings, orientations, parenting programs, and intellectual exchange. In addition, they were also connected through multiple social media platforms like *Facebook*, *Messenger*, and *Viber*, where they could exchange necessary information, feedback, and suggestions regularly to improve the teaching-learning environment in the school.

Additionally, the exchange of input from various channels as a feedback circle (Fidan and Balci, 2017) promoted school improvement initiatives (Keshavarz et al., 2010). As a result, the findings revealed that all the stakeholders took ownership of what was happening in the school being accountable. It shows that it is necessary to seriously analyze multiple stakeholders' inputs and incorporate them into the WSI planning and implementation. As all the school components are interconnected and adapting to change, working on the overall aspects of the school components contributed to sustainable school improvement.

Sustainability of school improvement

The question of the sustainability of school improvement initiatives is always essential and requires the democratic participation of stakeholders (Filho and Brandli, 2016). Sustainability depends on other factors such as long-term vision and goals, far-sighted visionary leadership, stakeholders' empowerment, and involvement in decision-making that contribute to the betterment and sustainability of the school improvement initiatives (Nicdao and Ancho, 2020). Therefore, school leaders require environmental scanning skills to examine the educational environment, current trends, and pedagogical approaches and manage physical, financial, and human resources to survive in the ever-changing environment (Fidan and Balci, 2017). For the sustainability of the WSI project, based on past experiences and making all the projects, e.g., 'Bagless Book Free Day' once a week, club-based activities, and teachers' pedagogical change, the school formulated necessary school-based policy guidelines resulting in extending the teachers' working time from 9 am to 5 pm (earlier it was 6 h working time from 9:30 am to 3:30 pm) so that all the teachers could have sufficient time for curriculum planning, preparing required instructional materials, attend the sharing circle (to name but a few). Thus, enhancement in overall aspects of school improvement indicates that WSI played a significant role in developing necessary foundations for the sustainability of the school improvement of the action school.

Conclusion and implications

School improvement is a complex, systematic, ongoing process and collaborative efforts to make the school capable of achieving educational goals that enhance students' learning achievement and strengthen the school's institutional capacity for managing change. It requires involving multiple stakeholders in creating and refining a shared vision, conducting rigorous self-evaluation, creating a well-development plan for improvement, and establishing consistent ways of measuring and monitoring change over a sustained period to yield

positive results. School is a complex adaptive system where heterogeneous components are interconnected and continuously interacting dynamically. The school improvement process may differ from one individual school to another as every school is unique regarding its context, philosophy or principle, school culture and climate, ethos, leadership practice, availability of resources, and stakeholders' participation in pedagogical practice on which the school is founded. Therefore, it is critical to identify the areas that require improvement and to prioritize these through quality, evidence-based, and data-informed processes. However, many schools still face challenges, so there is an urgent call for whole-school intervention for developing high-performing schools to address the difficulties caused by uncertain, unpredictable, complex, and constantly changing times of the digital era, globalization, and the rapidly increasing knowledge economy of the 21st century. Studies show that the Government of Nepal has emphasized promoting quality education through several policies and plans. However, the anticipated result is not satisfactory. School improvement is possible through whole school intervention (WSI), which is a comprehensive approach to school improvement through the participation of the entire school community that includes leadership, teachers, administrative staff, students, parents, and the broader community and focuses on improving various aspects of school. The WSI project requires proper planning, managing required resources, involvement of multiple stakeholders, and a timeline. A shared vision and participatory distributed leadership practice guide it.

This study makes significant contributions regarding theoretical and practical implications. This study perceives school as a complex adaptive system. Due to the interconnectivity and interdependence of multiple components and dynamic interplay between these components, the minor changes can have a surprisingly profound impact on overall behavior or vice-versa, and sometimes even a massive upset to the system, as theoretical implications of this study suggest a holistic approach to school improvement initiatives that include leadership, teaching, and learning, continuous teacher professional development, building positive school culture, community involvement, and assessment by involving all stakeholders rather than focusing on the partial components. Moreover, the findings of this study reveal that the school improvement process is a complex, systematic, ongoing process and collaborative efforts to make the school capable of achieving educational goals. The various obstacles, like the unwillingness of teachers to come out of their comfort zone to participate in WSI, heavy workload, lack of time for research and planning, and limited resources, can be possible barriers to school improvement. Therefore, the practical implications of this study extend to various stakeholders, offering valuable insights for teachers, teacher educators, policymakers, and practitioners that addressing these issues through school-based policy is necessary. Moreover, school improvement is context-specific as every school is unique in its context, philosophy, culture and climate, ethos, leadership, availability of resources, stakeholders' participation, and pedagogical practice on which the school is founded. Therefore, it is critical to identify the areas that require improvement and to prioritize these through quality, evidence-based, and data-informed processes.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving humans were approved by the Research Committee at Kathmandu University School of Education, Nepal. The studies were conducted in accordance with the local legislation and institutional requirements. Written informed consent for participation in this study was provided by the participants' legal guardians/next of kin. Written informed consent was obtained from the individual(s) for the publication of any potentially identifiable images or data included in this article.

Author contributions

DG: Conceptualization, Data curation, Formal analysis, Methodology, Validation, Visualization, Writing – original draft, Writing – review & editing. BN: Conceptualization, Data curation, Formal analysis, Visualization, Writing – original draft, Writing – review & editing. ND: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Resources, Validation, Writing – original draft, Writing – review & editing. DS: Conceptualization, Data curation, Formal analysis, Resources, Writing – original draft, Writing – review & editing.

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References

- Adhikari, N. P. (2021). Pedagogical approaches for an effective classroom management. *Interdisciplin. Res. Educ.* 6, 45–56. doi: 10.3126/ire.v6i1.43421
- Ahmad, M. A., Baryannis, G., and Hill, R. (2024). Defining complex adaptive systems: an algorithmic approach. *Systems* 12, 1–18. doi: 10.3390/systems12020045
- Azis, A. (2012). Teachers' conceptions and use of assessment in student learning. *Indonesian J. Appl. Linguist.* 2, 40–51. doi: 10.17509/ijal.v2i1.72
- Baral, B. (2021). Exploring the importance of school garden through participatory action research approach. [Master's Thesis in Sustainable development] Kathmandu University, School of Education, Nepal.
- Barber, M., and Mourshed, M. (2016). How the world's best-performing school systems come out on top. Organization for Economic Cooperation and Development (OECD).
- Bautista, A., and Ortega-Ruiz, R. (2015). Teacher professional development: international perspectives and approaches. *Psychol. Soc. Educ.* 7, 240–251. doi: 10.25115/psye.v7i3.1020
- Björkman, C. (2008). Internal capacities for school improvement: principals' views in Swedish secondary schools. Doctoral dissertation, Faculty of Social Sciences, Umeå University, Sweden.
- Brown, G. T. (2022). The past, present and future of educational assessment: A transdisciplinary perspective. *Front. Educ.* 7:1060633. doi: 10.3389/feduc.2022.1060633
- Brown, R., Van Godwin, J., Edwards, A., Burdon, M., and Moore, G. (2021). Development of a theory of change and evaluability assessment for the whole school approach to mental health and emotional wellbeing. Llywodraeth Cymru Welsh Government.
- Chan, S. (2001). Complex adaptive systems. Research Seminar in Engineering Systems, October 31 – November 6, 2001.
- Cilliers, P. (2020). Complexity and postmodernism: Understanding complex systems. London, UK: Routledge.
- Crowe, S., Cresswell, K., Robertson, A., Huby, G., Avery, A., and Sheikh, A. (2011). The case study approach. *BMC Med. Res. Methodol.* 11, 1–9. doi: 10.1186/1471-2288-11-100
- Dahal, N., Neupane, B. P., Pant, B. P., Dhakal, R. K., Giri, D. R., Ghimire, P. R., et al. (2024). Participant selection procedures in qualitative research: experiences and some points for consideration. *Front. Res. Metrics Analytics* 9:1512747. doi: 10.3389/frma.2024.1512747
- Desimone, L. M., Porter, A. C., Garet, M. S., Yoon, K. S., and Birman, B. F. (2002). Effects of professional development on teachers' instruction: results from a three-year longitudinal study. *Educ. Eval. Policy Anal.* 24, 81–112. doi: 10.3102/01623737024002081
- Ellis, B., and Herbert, S. (2011). Complex adaptive systems (CAS): an overview of key elements, characteristics and application to management theory. *Inform. Prim. Care* 19, 33–37. doi: 10.14236/jhi.v19i1.791
- Evermeld, K., and Andala, H. O. (2023). Instructional materials usage and students' academic performance in selected ordinary level public schools in Gasabo district in Rwanda. *J. Educ.* 6, 53–70. doi: 10.53819/81018102t5212
- Fidan, T., and Balci, A. (2017). Managing schools as complex adaptive systems: a strategic perspective. *Int. Electron. J. Element. Educ.* 10, 11–26. doi: 10.26822/iejee.2017131883
- Filho, W. L., and Brandli, L. (2016). Engaging stakeholders for sustainable development. World Sustainability Series: Springer International Publishing Switzerland.
- Freire, P. (1970). *Pedagogy of the oppressed*. New York, NY, USA: Seabury Press.
- Gaillard, P. M., Barrett, M., Black, L. B., and Land, H. V. (2020). The reference framework of competencies for democratic culture: guidance for implementation Council of Europe. Available online at: www.coe.int (Accessed December 20, 2023).
- Gericke, N., and Torbjörnsson, T. (2022). Identifying capital for school improvement: Recommendations for a whole school approach to ESD implementation. *Environ. Educ. Res.* 28, 803–825. doi: 10.1080/13504622.2022.2045256
- Goldberg, J. M., Sklad, M., Elfrink, T. R., Schreurs, K. M. G., Bohlmeijer, E. T., and Clarke, A. M. (2018). Effectiveness of interventions adopting a whole school approach to enhancing social and emotional development: a meta-analysis. *Eur. J. Psychol. Educ.* 34, 755–782. doi: 10.1007/s10212-018-0406-9
- Government of Nepal (2019). Sustainable development goal – 4: Education 2030 Nepal National Framework. Ministry of Education, Science and Technology, Kathmandu, Nepal.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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- Hopkins, D. (2005). "Introduction: tensions in and prospects for school improvement" in *The practice and theory of school improvement: International handbook of educational change*. ed. D. Hopkins (Dordrecht: Springer), 1–21.
- Keshavarz, N., Nutbeam, D., Rowling, L., and Khavarpour, F. (2010). Schools as social complex adaptive systems: a new way to understand the challenges of introducing the health promoting schools' concept. *Soc. Sci. Med.* 70, 1467–1474. doi: 10.1016/j.socscimed.2010.01.034
- Krijnen, E., Steensel, R. V., Meeuwisse, M., and Severiens, S. (2022). Aiming for educational partnership between parents and professionals: shared vision development in a professional learning community. *Sch. Community J.* 32, 265–300. <http://www.schoolcommunitynetwork.org/SCJ.aspx>
- Leite, C., Monteiro, A., Sampaio, M., and Silva, A. (2024). The whole-school approach and transformative learning: the case of a Portuguese school. *Int. J. Instr.* 17, 635–650. doi: 10.29333/iji.2024.17235a
- Ling, L. M., and Mackenzie, N. M. (2015). An Australian perspective on teacher professional development in super complex times. *Psychol. Soc. Educ.* 7, 264–278. doi: 10.25115/psyv7i3.517
- Mathema, K. B. (2007). Crisis in education and future challenges for Nepal. *Eur. Bull. Himalayan Res.* 31, 46–66.
- Matti, C., Bontoux, L., and Jensen, K. (2025). Strategic foresight framework for addressing agency in sustainability transitions: A co-creation approach. *Front. Sustain.* 6:1507708. doi: 10.3389/frsus.2025.1507708
- Merki, K. M. (2014). Conducting intervention studies on school improvement: an analysis of possibilities and constraints based on an intervention study of teacher cooperation. *J. Educ. Admin.* 52, 590–616. doi: 10.1108/JEA-10-2013-0120
- MoE (1997). The basic primary education master plan for 1997–2002. Kathmandu: Ministry of Education, Government of Nepal.
- MoE (2009). School sector reform plan: 2009–2016. Kathmandu: Ministry of Education, Government of Nepal.
- MoE (2016). School sector development plan, Nepal. 2016/17–2022/23: Kathmandu, Ministry of Education, Government of Nepal.
- Nicdao, M. F., and Ancho, I. V. (2020). Practices of the stakeholders' involvement in the formulation of school improvement plan. *Human. Arts Soc. Sci. Stud.* 20, 219–246.
- Niemi, H. (2015). Teacher professional development in Finland: towards a more holistic approach. *Psychol. Soc. Educ.* 7, 279–294. doi: 10.25115/psyv7i3.519
- OECD. (2018). Skills Summit 2018 – Skills for a digital world: Issues for discussion (28–29 June 2018, Porto, Portugal). OECD.
- Partnership for 21st Century Skills (2009). Available online at: <http://www.p21.org/> (Accessed December 25, 2023).
- Rajbanshi, R., and Dahal, N. (2023). "Transformation through participatory action research in a Community School of Nepal" in *Implementing transformative education with participatory action research*. eds. B. C. Luitel, B. Devkota, S. Bastien and B. K. Sitaula (USA: IGI Global Scientific Publishing), 130–140.
- Rashid, Y., Rashid, A., Warraich, M. A., Sabir, S. S., and Waseem, A. (2019). Case study method: a step-by-step guide for business researchers. *Int J Qual Methods* 18, 1–13. doi: 10.1177/1609406919862424
- Rieth, B. (2023). Empowered Circles: Using Talking Circles in Research. *New England College Journal of Applied Educational Research*, 4, 1–23.
- Sarder, D., and Haider, M. Z. (2023). Impact of pedagogical practices on academic performance: perception of the students of Khulna University. *Khulna Univ. Stud.* 20, 1–11. doi: 10.9790/7388-1101020629
- Schein, E. H. (2010). Three cultures of management: The key to organizational learning. *Global Working. Living and Working Across the World With Cultural Intelligence*. Milan, Italy, Franco Angeli, 37–58.
- Strickland, J. L. (2016). *Community partnerships in Urban, Title 1 Elementary Schools: A mixed-methods study* (Doctoral dissertation, The University of Nebraska-Lincoln).
- Toikka, T., and Tarnanen, M. (2024). A shared vision for a school: developing a learning community. *Educ. Res.* 66, 295–311. doi: 10.1080/00131881.2024.2361412
- Tran, L. (2021). School improvement: a technical report, July, 2017. The Link, Bridging the Research to the Practice Gap, 8, 1–5.
- World Bank (2017). Implementation and results report of the school sector reform plan. Nepal: Nepal-School-Sector-Reform- Program-Project.
- Yambi, T. (2018). *Assessment and evaluation in education*. Available at: https://www.academia.edu/35685843/ASSESSMENT_AND_EVALUATION_IN_EDUCATION