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RESEARCH PAPER

Teachers Professional Development and its Effect on their Innovative Teaching Strategies

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ABSTRACT

This study examines the impact of professional development (PD) on enhancing teachers' competencies and fostering innovative teaching practices in secondary schools in Karachi, Pakistan. PD is crucial in improving student engagement and academic performance in rapidly evolving educational landscape. A qualitative phenomenological approach was used, involving semi-structured interviews with 8 secondary teachers to explore their experiences with PD programs. Thematic analysis was applied to analyze the data. The results revealed that PD programs significantly improved teachers' pedagogical knowledge, classroom management, and use of formative assessments. Teachers adopted student-centered teaching, active learning, and collaborative strategies, which positively influenced student engagement and learning outcomes. PD programs that were personalized to teachers' needs, incorporated active learning, and provided ongoing support led to greater effectiveness. It is recommended that PD programs focus on technology integration, active learning, and teamwork. School leadership should prioritize a culture of continuous professional development for teacher growth and innovation.

| **KEYWORDS** | Pedagogical Knowledge, Classroom Management, Formative Assessment, Collaborative Learning |

Introduction

Effective teaching strategies will be needed to promote student engagement, critical thinking, and academic achievement that are fundamental in the fast-paced environment of education. Professional development (PD) of teachers is a defining factor in developing such strategies, as it can improve educator's skills, knowledge, and their overall classroom performance. Through years, studies have been proving that PD can not only enhance the pedagogical knowledge of teachers but also provides them with the skills to bring forth a new teaching approach, which would meet the diverse nature of learners (Guskey, 2000). At that, PD programs have played a significant role in enhancing classroom management and formative assessment strategies as well as the development of collaborative learning conditions. These elements of instruction form the crux of establishing lively and receptive classrooms that students and teachers can flourish (Postholm, 2012; Ahmad, Rashid & Ali, 2023).

Pedagogical knowledge is one of the most basic in teaching because it involves how students learn and how a teacher may leverage this fact to enhance the teaching activity (Shulman, 1987). To be effective in their instruction, teachers have to constantly be improving on their pedagogical practices, which enable them to adapt to the prevailing educational theories and practices. Through PD programs, teachers can

advance their knowledge of different teaching methods that range between the conventional lectures to the more contemporary student centered methods. An example is inquiry-based learning, project-based learning, and flipped classrooms, new practices that have been gaining popularity because of the emphasis on active learning, critical thinking, and independence in students (Bransford et al., 2000).

Classroom management is also a major skill, which has a direct impact on the teaching/learning environment and the conduct of students. Proper classroom control can not only contribute to the overall reduction of disruptive behavior but can also offer students a well-organized and supportive environment in which they are able to devote themselves fully to the content (Emmer & Sabornie, 2015). PD programs on classroom management develop strategies or techniques which assist the teacher manage a wide range of behavior, set effective expectations and provide positive culture in the classroom (Chohan & Haq, 2025; Qazi, et al., 2025; Malik, Muzaffar & Haq, 2025). Such programs tend to employ methods like restorative practices, behavior interventions, and student/ teacher rapport building strategies, which all together helps develop a learning habitat that is conducive to innovation and engagement. The more classroom management skills that the teachers develop, the more they can use innovative teaching regulations that need the high levels of student involvement and participation (Aydın & Karabay, 2020).

Formative assessment is another critical part of teaching that has received significant enhancement due to PD. Formative assessments that are administered as the learning process continues helps the teachers to keep track of student performance, to keep an eye on their difficulties and to modify their learning instructions (Black & Wiliam, 1998). PD dedicated to formative assessment enables teachers to leave behind summative assessments and study things that are contemporary and offer timely feedback, facilitate paths to individualized learning and improve student achievements (Oad, et al., 2024; Hussain, et al., 2023). Such assessments do not just enhance the fidelity of student ratings but also inform the teachers how to change their instructional practices by giving them a clue to more effective practices (Andersson & Palm, 2018).

Another major domain where PD has impacted significantly is collaborative learning. These techniques challenge learners to collaborate, address problems in a group, and gain knowledge through the views of other learners (Johnson & Johnson, 1999). By being exposed to different collaborative learning models, including cooperative learning, peer tutoring, and group projects, via PD, teachers will instill in students the need to enhance their teamwork and communication skills. The success of PD in the development of innovative teaching strategies, however, depends on a number of factors. The first point is that PD should be focused on unique needs of teachers, including their prior knowledge, teaching context, and the courses they teach (Darling-Hammond et al., 2009; Desimone, 2009).

Professional growth forms a stronghold of educational achievement, baring a significant effect on the capability of teachers to embrace contemporary teaching practices. PD programs enable teachers to make learning interactive and effective by enhancing their pedagogical background, managing their classrooms, and using formative assessment methodologies as well as collaborative learning. With the further changes to education, constant, updated, and properly justified PD will always be needed to give teachers the skills needed to address the issues of contemporary classrooms and promote student achievement. Therefore, study aim is to check the

teacher opinion regarding their professional growth and impact on their innovative methods of teaching at the primary level in Karachi, Pakistan.

Literature Review

A basic mean of the enhancement of the quality of teaching is Teacher Professional Development (TPD). The introduction of new teaching methods by teachers is becoming quite important as educational landscape keeps changing. Such approaches are important to ensure the satisfaction of different needs of students, active learning, and developing the deep comprehension of the content. This literature review discusses the correlation between TPD and adoption of innovative teaching methodology building on current studies and presents pivotal themes on pedagogical knowledge, integrating technology, formative assessment, and collaborative learning.

Pedagogical Knowledge in Innovative Teaching Strategies

One of the key aspects of teacher effectiveness is pedagogical knowledge, which is directly associated with innovative methods of teaching. Pedagogical knowledge as defined by Shulman (1987) is what a teacher must know to teach. Pedagogical knowledge enables the educators to differentiate their instructions to suit different students and make the classroom more inclusive and engaging. Recent research indicates that any professional development program that focuses on pedagogical skills has a benefit on developing an innovator in the teaching practices of teachers. As pointed out by Darling-Hammond et al. (2017), the potential to be involved in long-lasting PD, especially pedagogical one, makes teachers more inclined to employ such active learning strategies as problem-based learning or group projects (Ahmed, Batool & Haq, 2025; Shah, et al., 2025). These methods encourage students and critical thinking, another aspect of innovative teaching strategies.

Moreover, this kind of professional growth allows the teachers to explore new teaching strategies, and the inventiveness scales new heights (Guskey, 2000). Consequently, well-educated teachers will be in a better position to integrate new strategies like the flipped classroom and inquiry-based learning into classroom practice. Pedagogical knowledge constitutes a central part of the skills of any teacher, and it directly affects his/her effectiveness in designing and applying innovative instructional methods (Jacob, John, & Gwany, 2020). This is the knowledge that entails the way to teach effectively and how to make students involved in the learning process (Shulman, 1987; Ali et al., 2023). It is important that a teacher can use multiple teaching methods and adjust her attitude to teach students with diverse learning styles and provide students with the environment where they can become active creators of their learning process. Schema indicates that Teacher Performance Development (TPD) programs based on the concept of building pedagogical knowledge can make teachers more students robust, inquiry-driven, and active-based, with more innovative teaching (Darling-Hammond, 2017).

Technological incorporation in teaching has emerged as one of the key aspects of modern learning. Educators should know how to use the digital tools and platforms to facilitate learning activities and actively involve students. Recent studies also emphasize that TPD is essential towards developing the digital literacy competencies among teachers (Falloon, 2020; Aslam, Iqbal & Ahmed, 2022). Such practices give the students a chance to experience the subject matter in novel and participating courses, which encourage higher learning. Therefore, continuous PD on using technology in the

classroom is necessary to ensure that teachers are kept abreast with the current digital tools and are able to incorporate them in their teaching activities.

Classroom Management

Classroom management can be simply explained as methods and approaches that educators employ to assure control, encourage desirable behavior, and make students active learners. Emmer and Sabornie (2015) posit that classroom management is a set of measures that should involve clear signals of what is an expected, planned routine, and actions geared at early intervention against misbehavior. These are some instruments needed to establish a classroom atmosphere in which students feel safe, respected and willing to learn. Students will easily remain focused and in lessons in case teachers demonstrate evident expectations and a frequent reminder about tradeoffs. Moreover, once the students are aware of the limits and the manner in which they have to conduct themselves, they find it easier to engage themselves in classroom activities and take a better interest in whatever they learn (Marzano, Marzano, & Pickering, 2003).

Student engagement is commonly defined as the extent to which the students participate in the teaching and learning process, not only behaviorally but also emotionally. Behavioral engagement can be thought of as how actively students are involved in the activities of the classroom in answering questions, doing assignments, and socialization with their peers. Emotional engagement refers to students developing emotions during the learning process history, such as a sense of interest, excitement, and motivation in scholarly activities. According to Fredricks, Blumenfeld, and Paris, (2004), both types of engagement are relevant in promoting deep learning and positive academic performance. When teachers are able to manage the classroom adequately, there is a behavioral and emotional engagement that thrives and this naturally can encourage students to engage because they feel supported, understood, and motivated. A very important aspect of classroom management is the creation of positive teacher-student relationships.

Also, classroom environment is important to classroom management as well as student engagement. As stated by Wong and Wong (1991), an organized classroom (places to sit, resources, and visually attractive surroundings) can keep students focused, concentrated, and involved (Danish, Akhtar & Imran, 2025; Mankash, et al., 2025; Hafeez, Yaseen & Imran, 2019). Classrooms can be set up so they have minimal distractions and have good space to move around in classes and also preference to multiple learning styles which attract more students. In addition, integrated working and networking with peers, as well as collaborative learning, enhances active learning and better learning (Johnson & Johnson, 2009). Through a supportive and student-responsive classroom environment, which fosters interactions and socialization, teachers can address classroom management and engagement. The instructional strategies enabling active learning through classroom management is another factor that influences the correlation between classroom management and student engagement. A study has shown that when teachers attract students to participate in the learning and not just passing them through blatant presentation of information students show more interest (Prince, 2004).

The management of a classroom also directly relates to the capabilities of a teacher to control the interference and ensure that bad behaviors do not run over student engagement. Good teachers intervene proactively in correcting behavioral

problems before they spiral out of control through redirection (re-directing their attention), affirming positive actions, and establishing expectations (Simonsen et al., 2008; Shah, Ali & Ahmad, 2024). The latest research also points out the positive impact of culturally responsive classroom managing on student engagement. Awareness of and sensitivity to the cultural background of the students improves the likelihood of the teacher being able to create an inclusive classroom environment that allows all students to engage in learning. This can be implemented through the culturally responsive practices like involving different viewpoints in the curriculum and identifying the cultural strengths in students that can make them more emotionally involved in teaching and motivated towards teaching (Gay, 2018).

Formative Assessment and Innovation

When applied efficiently, formative assessment can significantly improve the overall student learning. Formative assessment-based professional development also aids in teachers abandoning the notion of summative assessment and adopting a more dynamic, continuous assessment, which involves the utilization of quizzes, peer evaluations, and reflective journals, among others. Hattie and Timperley (2007) further re-emphasized that even though formative assessments help an educator to understand the status of understanding of students, it also forms a base where innovative teaching approaches are applied. As an example, an instructor can adapt his or her teaching regime on the fly in response to student responses, and hence be more responsive to student needs. The teachers develop proficiency in using student data to differentiate learning, diagnose learning gaps and edit instructions by applying PD on formative assessment practices. Therefore, formative assessment has become a significant element in the establishment of the environment where student needs shape and orient the innovation in the field of teaching. Formative assessment consists of the continual data collection of student learning to feed the process of giving a form of feedback that can enhance the learning of students (Black & Wiliam, 1998). It is particularly a component of the new teaching methods as it enables the teachers to constantly remodel the student level of knowledge and to adapt instruction accordingly. The educators who have been taught the practice of formative assessment can more easily plan the activities that accommodate students individually as well as increase the levels of engagement and improved academic performance (Ahmad, Noorani & Sewani, 2025). In professional development, teachers are taught how to use formative assessment strategies to include quizzes, peer evaluations, and reflective journals. Such diagnostic tools allow the teacher to have real-time information about student learning and hence the teacher can modify his teaching method to suit the needs of the student in this age. The information obtained through formative assessment not only assists the students to learn better but also gives confidence to teachers to be creative in their teaching methodologies by experimenting and using the methodology based on the outcome of the assessment. Consequently, formative assessment is an effective tool of professional development that helps to increase the efficiency of innovative teaching strategies (Berisha et al., 2024).

Collaborative Learning

Teacher collaboration and collaborative learning are the key elements of TPD, which favor the willingness to use innovative teaching methods. Professional Learning Communities (PLCs) have become a point of interest as a means of encouraging teacher cooperation and creativity. PLCs are seen as a medium through which teachers can exchange the best practices, think about their own teaching, and work together to solve

educational issues (Vescio et al., 2008). Educators that experience collaborative learning during PD sessions are better positioned to explore innovative approaches to teaching because they can learn with and encourage each other and obtain support in learning new methods. This has been supported by recent research that indicates that teachers who engage in PLCs or collaborative professional networks are most likely to report that they are confident to experiment on ways of teaching. Educators in these environments are prone to try out new pedagogical understandings like team teaching, interdisciplinary work, and cross-curricular education, which have the likelihood of captivating students and promoting meaningful learning. Through these shared learning platforms, teachers do not only enhance the innovative aspects of their practices but also establish a wider culture of innovation in their schools.

Another crucial component of TPD is collaborative learning, which stimulates the development of new teaching methods. When teachers belong to a supportive peer network then they have a better chance of practicing new innovative practices. The learning environment, which encourages collaboration e.g. Professional Learning Communities (PLCs) also provide teachers with possible ways to teach through sharing of ideas and resources/strategies, which can promote innovation in teacher practices (Vescio & Adams, 2015). Teachers are also able to enhance their prowess through collaborative learning, in addition to bringing a culture of continuous improvement in their schools. Teachers in collaborative environments are able to observe each other, co-teach, and plan lessons jointly, which helps them develop a skill to employ novel practice. An example is that teachers can study the application of technology in their classrooms more efficiently or discover the new methods of applying formative assessment in the group. Because students and teachers are collaborating with one another, they can press each other intellectually, each can encourage the other in their advancement, and they can investigate all sorts of new practice that can help the students together (Hord, 2004).

Material and Methods

The research is a qualitative phenomenological study that explores the issue of the professional development of teachers and its effect on innovative teaching strategies in secondary schools in Karachi, Pakistan. The study employed qualitative data, such as individual semi-structured interviews, and applied efficient research methods (Creswell, 2014). An interview protocol was developed according to the structure of open-ended questions and prompts aimed to learn about the impact of teacher's professional development on their innovative teaching methods at the secondary level. The study conducted interviews with 10 teachers out of which 02 were used in pilot study and 08 in the final research; they were selected through convenience sampling. Fraenkel et al. (2012) refer to 1-20 participants per qualitative research. 20-30 minutes interviews were recorded and transcriptions verified to participants to ensure accuracy. To guarantee reliability, the authors worked with knowledgeable judges in undertaking inter-coder testing, which attained a level of agreement over 80 percent (Creswell & Creswell, 2017; Patton, 1990). The interview transcripts were analyzed by inserting them into the emergent themes and using data triangulation to increase the reliability of the findings. It was the application of this approach that enabled the researchers to create and appreciate the relationship between the professional development of teachers and the development of their innovative teaching strategies.

Results and Discussion

Pedagogical Knowledge in Innovative Teaching Strategies

To examine the teacher's perspective about professional development and innovative teaching strategies, the first question of the interview was about how has professional development influenced your approach to teaching? They responded to this query by saying:

Participant No. 5:

"Professional development has not only expanded my horizon considerably in how to get students more engaged, it has also made me more open-minded about the entire process. Prior to the workshops related to inquiry-based learning, I was inclined to use lectures and conventional note making. Since the training, I began including more project-based tasks and Socratic seminars in my classes. An illustration is a research project I created about the civil rights movement in which students were required to work together and give a presentation as though they were historical consultants. This has seen an improvement in the participatory involvement of students which has made the classroom livelier".

Participant No. 3:

"The professional development has assisted in my shift to a teacher-centred approach and more towards a student-centred approach. I used more hands-on activities after I attended a professional development group concerning active learning strategies. As an example, during our unit on ecosystems I introduced a live experiment in which students were able to assemble terrariums and monitor plant growth. This transformation created more interested students and I could tell that they were more inquisitive and interested in what they were studying."

Classroom Management

When asked about "How has professional development improved your classroom management? Can you provide an example of how it impacted student engagement?

Participant No. 2:

"Prior to professional development to regard on classroom management, I had difficulties in getting my students to be attentive, particularly during lectures. The post-workshop steps included incorporating various new strategies such as the use of the so-called Think-Pair-Share and the establishment of clear and consistent routines. As an example, I have switched to a small introductory discussion question at the beginning of each lesson on the theme. It enables students to participate immediately, and it establishes a collaborative mood. These developments have enhanced my classroom dynamics and attention on my students".

Participant No. 7:

"The most influential learning that has affected my teaching styles is the PD I attended regarding differing instruction. I once applied the same teaching methods to the entire classroom but I am more conscious of the existing learning styles in my classroom. As in case of reading comprehension, I provide visual support along with a narration to the story and discussions among the learners in the group to target the auditory and visual learners. This has enabled me to learn my students on their levels and has improved the keenness of the students in lessons".

Formative Assessment and Innovation

When asked *"how have professional development programs helped you use formative assessments? Can you describe an instance where it changed your teaching? They replied in following:*

Participant No. 1:

"The experiences that I have been through in attending a PD workshop on formative assessment strategies have been influencing my pedagogy in a very significant way. I previously used periodic quizzing and tests, but now, including the training, I began to use quick exit tickets and mini-quizzes to assess comprehension during the lesson. As in the case of introducing new concepts in algebra, I use a short exit ticket to assess whether they are keeping up. This has enabled me to correct my lessons during the course and correct student misunderstandings immediately. These students feel more supported, and I can observe their confidence is evolving".

Participant No. 6:

"Professional development has actually transformed the way l design lessons. I have participated in a technology-in-the-classroom workshop. One such tool is a peer review on the internet done when the student has writing assignments. A rubric helps students to analyze each other essays and this will not only provide students with an opportunity to practice critical thinking, but also become more responsible of what they do. Student responses have been supportive--students like the interactive quality of such activities".

Collaborative Learning

When asked about the *"Has professional development helped you implement collaborative learning? What impact has it had on student outcomes? They replied in following:*

Participant No. 8:

"My teaching has been affected by professional development in collaborative learning strategies significantly. My practice was centered on personal tasks, and I began to teach group work and collaboration with peers due to the PD. An example of this is when I assigned my students a unit on persuasive writing where students then split into groups to essentially develop presentations to argue a certain side of a social issue. They could exchange ideas, argue, and work on each other's work. This strategy made the classroom more dynamic and students appeared to be more enthusiastic to explore the material".

Participant No. 4:

"The impact was great on my teaching approach after attending the professional development about collaborative learning strategies. Previously, I focused mainly on individual tasks; however, following the training, I started to commemorate more team activities and constructive interactions between the students. As an example, I would cover a unit on persuasive writing, and in that unit I would organize students into teams to design persuasive presentations in support of a particular position on a social issue. This enabled them to share ideas, debate and perfect one another work. It increased the collaboration learning style into the classroom making the environment more interactive and dynamic, and I observed with an augmented level of motivation and involvement in the students because they felt they were in charge of their learning process".

Discussion

The results of the current research highlight the crucial part of professional development (PD) in planning and improving innovative approaches to teaching and learning among teachers. The effects cut across major areas of pedagogy, classroom management, formative assessment, and collaborative learning, which influence student participation and learning directly. The study found that teachers surveyed had experienced drastic changes to their teaching practices following the PD, and that teachers were beginning to rely on more active and student-centered systems of teaching and learning, including project-based learning and inquiry-based learning (Ali et al., 2023). The shift is consistent with the available contemporary literature that postulates that when the pedagogy development process is permanent, it will develop the capacity of a teacher to apply innovative approaches to improve critical thinking well-being and participation (Darling-Hammond et al., 2017; Akram, Ahmad & Sewani, 2024). The fact that participants used hands-on projects and flipped classroom-related experiences contributes to the idea predetermined by Bransford (2000) that these approaches may facilitate deeper learning. In addition, PD helps teachers to think deeply about their education, resulting in continuous improvement and innovation in the teaching process (Desimone & Garet, 2015; Dilshad, Shah & Ahmad, 2023).

No innovation in teaching can succeed without effective classroom management. According to the respondents, the PD workshops dedicated to management strategies significantly increased student attentiveness and activity. These involved active learning techniques such as the Think-Pair-Share technique and regular routine-setting. Moreover, culturally responsive and inclusive practices, such as differentiated instruction based on PD, has also been reported to play a crucial role in accounting learning styles and styles of learning as well as optional values in teaching and learning, supporting their emphasis and relevance (Gay, 2018; Haider, Ahmad & Ali, 2024).

Teachers recognized that PD provided the skills needed to be more effective in using formative assessments. Exit tickets and assignment based on peer review were mentioned to make real-time feedback and adjust-as-you-go teaching possible. According to Hattie and Timperley (2007), formative assessment has been proven to be an effective feedback system when properly applied strategically, in that it serves the purposes of informing teaching and facilitating individual learning (Jabeen, Ali & Ahmad, 2023).

PD also played an important role in embedding collaborative learning environment in classrooms. Participants reported that they functioned in an individual work model to a group projects model with peer discussion. Such practices not only lead to a better understanding of the content material but also develop social-emotional skills such as teamwork or communication skills as vital among 21st-century learners (Tohani & Aulia, 2022; Kolach et al., 2024). The use of shared learning strategies like debate, group presentations, team assignments and leadership practices proves to be an effective PD in fostering professional learning communities (Vescio et al., 2008; Thomas, Khan & Ahmad, 2022; Naeem, Ali, & Ahmed, 2022; Akram, Khan & Ahmad, 2022).

The results support the evidence that well-crafted PD programs lead to effective change in the practice of teaching. Educators being a part of context-specific PD experienced professional self-efficacy and noticed visible changes in student

engagement, motivation, and grades. These are the results in line with existing what seems to be emerging evidence that PD lasting in time and job-embedded has a higher chance of resulting in effective and sustainable instructional change (Darling-Hammond et al., 2017; Oad et al., 2024).

Furthermore, it is mentioned that the supportive leadership and a collaborative school culture were cited as empowering factors, which is also captured in the study by Pedder and Opfer (2019). Teachers feel freer to innovate when the school environments promote experimentation, dialogue, and constant development. This student-centered approach, in which reflective teaching practices, peer support, and strong PD infrastructure form a mutually beneficial environment, are particularly desirable, as noted in the current research.

Conclusion

This study demonstrates that professional development (PD) plays an important role in helping to improve the practice of educators, especially in teaching innovation. The research examines how PD affects these other areas of teaching, including pedagogical knowledge, classroom management, formative assessment and collaborative learning, which are essential parts in the establishment of a dynamic and competent teaching environment.

The results provide support not only in the view that PD programs enhance the pedagogical knowledge of teachers and enable them to engage in more student-focused and active learning activities but also the opinion that PD programs enable teachers to be more innovative by trying out modern learning methods such as project-based that includes project-based learning, inquiry-based learning and flipped classroom. Such new methods and new approaches create a more active and interactive learning environment where the critical thinking plays an important role, where the creativity of the students is encouraged, and where the student interaction and participation is enhanced. Teachers undergoing long-term PD have higher chances to embrace technology and innovative ways of delivering their practice, which positively affects the learning experiences and achievements of students.

In addition to this, classroom management PD programs assisted in enhancing the capacity of teachers to develop an effective learning environment. PD could increase student attention, decrease disruptive behavior, and encourage their overall engagement by providing educators with methods of enhancing their control over their classrooms, such as creating clear routines and integrating active engagement strategies. By mastering classroom management, teachers are in a position to establish an environment in which innovations are possible, and students are encouraged to approach the learning process.

The research study also unveils the transformative effects of PD on using formative assessments. Through identifying the transition away from the traditional summative assessments, participating in PD about the application of formative assessment strategies allows the teacher to give timely feedback, change their intervention approaches and ensure tailoring to the unique needs of students. Formative assessments, including exit tickets and peer reviews, allow teachers to track the level of student development in real-time and assess that the educational practices are responsive to the needs of learners.

The influence of PD on the process of collaborative learning is reflected in the fact that the usage of group activities, interactions between the peers and cooperative learning practices in the classroom started to be used more frequently. Educators participating in PD on collaborative learning strategies will prepare better to support students collaborating, communicating, and problem-solving. Not only does this improve the interpersonal skills possessed by students; it also creates a sense of community and belonging in the classroom, thus giving students the desire to be more active participants in the learning process.

The relevancy of PD programs to the needs of teachers, their persistence, and the influence of school leaders determine the program success at reshaping teaching practices. PD contributes to the acquisition of fundamental teaching competencies so that instructors can adjust to an ever-changing educational environment and introduce new strategies that lead to student achievement. The study highlights the significance of life-long professional growth in the effectiveness of teaching and eventual betterment of student learning results.

Recommendations

- According to the research article, the recommendations given below in improving teacher professional development (PD) to facilitate innovative teaching strategies are:
- PD programs must be tailored to the individual needs of individual teachers, considering their previous knowledge, teaching situation, and the particular challenges a teacher is experiencing within the classroom. Making PD specific to the needs and aims of the teachers will enhance both the relevance and effectiveness of the training
- PD should not be a series of one-off workshops. PD that is long-term in the form of coaching, mentoring, and learning communities allows teachers to incorporate new strategies more efficiently and also leads to the long-term progress in the area of teaching practices.
- PD could focus on pedagogical knowledge and methods of active learning. Flipped classrooms, project-based learning, and inquiry-based learning are all student-centered approaches that should be trained teaching staff at schools; they promote critical thinking, creativity, and active student involvement.
- The culture of collaboration among teachers is based on collaborative PD experiences, e.g., Professional Learning Communities (PLCs). Teachers will be able to communicate best practices, discuss their experiences, and assist each other in trying new teaching methods. Collaborative learning also increases confidence and readiness of teachers to embrace new methods.
- PD must incorporate the knowledge of utilizing digital tools to facilitate teaching and learning. Formative assessment strategies should also be taught to teachers to allow them to provide real-time feedback to inform future teaching instruction and keep students engaged in the process.
- The PD programs must be aimed at classroom management strategies, which encourage students in being engaged. By equipping the teachers with methods of ensuring a good classroom culture, the educators will be able to achieve a more innovative teaching methodology since they feel less intimidated by language students who feel safe in their classroom environment.

References

Ahmad, N., Noorani, Z. & Sewani, R. (2025). Exploring Feedback and Assessment Practices: Perspectives from Prospective Teachers. *The Critical Review of Social Sciences Studies, 3*(1), 953–966. https://doi.org/10.59075/c39z2h90

Ahmad, N., Rashid, S., & Ali, Z. (2023). Investigating primary school teachers' perceptions about professional development and its impact on students achievement. *Journal of Social Sciences Review, 3* (1), 809–823. https://doi.org/10.54183/jssr.v3i1.234

Ahmed, A., Batool, S., & Haq, A. U. (2025). To Measure the Effects of Omnichannel Management Capabilities on Positive WOM Engagement and Equity. *Wah Academia Journal of Social Sciences*, *4*(1), 1265-1285.

Akram, M., Ahmad, N., & Sewani, R. (2024). Comparing Special Education Teachers' Psychological Wellbeing Based on their Demographics. *International Journal of Social Science Archives, 7*(3), 23-32.

Akram, M., Khan, A. Y., & Ahmad, N. (2022). Exploring Influence of Learning Management System On Management Functions Of E-Leadership. *Webology*, *19*(2), 9550–9575.

Ali, Z., Shah, R., & Ahmad, N. (2023). Determining The Science, Technology, Engineering, And Mathematics Teaching Capabilities Of Educators In Karachi, Pakistan. *Journal of Positive School Psychology*, *7*(4), 11–28.

Ali, Z., Younis, S., Ahmad, N., Saba, F., & Ullah, N. (2023). Teachers' Perspective of Technology Integration Effects on Students Learning At University Level. *GRADIVA*, *62*(5), 29–38.

Andersson, C., & Palm, T. (2018). Reasons for teachers' successful development of a formative assessment practice through professional development–a motivation perspective. *Assessment in Education: Principles, Policy & Practice*, *25*(6), 576-597.

Aslam, R., Iqbal, S., & Ahmed, N. (2022). Impact of Entrepreneurship Education on Students' entrepreneurial Inclination: A Case of Public Sector Universities. *Pakistan Journal of Educational Research*, *5*(1), 51–65.

Aydın, D. G., & Karabay, Ş. O. (2020). Improvement of classroom management skills of teachers leads to creating positive classroom climate. *International Journal of Educational Research Review*, *5*(1), 10-25.

Berisha, F., Vula, E., Gisewhite, R., & McDuffie, H. (2024). The effectiveness and challenges implementing a formative assessment professional development program. *Teacher Development*, *28*(1), 19-43.

Black, P., & Wiliam, D. (1998). Assessment and classroom learning. *Assessment in Education: principles, policy & practice*, *5*(1), 7-74.

Bransford, J. (2000). Brain, mind, experience, and school. *How people learn*. National Academy Press.

Chohan, A. H., & Haq, A. U. (2025). Corporate Governance and Audit Quality in Islamic Banks in Emerging Asian Economies: A Literature Review. *Journal of Development and Social Sciences*, *6*(2), 450-465.

Creswell, J. W. & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications

Creswell, J. W. (2014). *Research Design Qualitative, Quantitative, and Mixed Methods Approaches*. (4th ed.). Thousand Oaks, CA: Sage.

Danish, F., Akhtar, N., & Imran, M. (2025). AI-Driven Personalization in Educational Marketing: A Framework for Enhancing Student Recruitment and Retention. Journal of Political Stability Archive, 3(2), 559-590.

Darling-Hammond, L., Wei, R. C., Andree, A., Richardson, N., & Orphanos, S. (2009). *Professional learning in the learning profession: A status report on teacher development in the United States and abroad*. National Staff Development Council.

Desimone, L. M. (2009). *Improving impact studies of teachers' professional development: Toward better conceptualizations and measures. Educational Researcher, 38*(3), 181-199.

Desimone, L. M., & Garet, M. S. (2015). Best practices in teachers' professional development in the United States. *Psychology, Society and Education, 7*(3), 252-263.

Dilshad, S. A., Shah, R., & Ahmad, N. (2023). Implementation of Single National Curriculum at Primary Level: Problems And Practices In District Khushab. *Journal of Positive School Psychology*, *7*(4), 465–476.

Emmer, E. T., & Sabornie, E. J. (2015). *Handbook of classroom management* (2nd ed.). Routledge.

Falloon, G. (2020). From digital literacy to digital competence: the teacher digital competency (TDC) framework. *Educational technology research and development*, *68*(5), 2449-2472.

Fraenkel, J. R. & Wallen, N. E. Hyun, H. H. (2012). *How to Design and Evaluate Research in Education* (8th ed.). New York, United States of America. McGraw-Hill

Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of educational research*, *74*(1), 59-109.

Gay, G. (2018). *Culturally responsive teaching: Theory, research, and practice*. teachers college press.

Guskey, T. R. (2000). *Evaluating professional development*. Corwin Press.

Hafeez, A., Yaseen, G., & Imran, M. (2019). Management Paradigm Change in Pak¬-Turk (International Schools & Colleges) After a Failed Military Coup in Turkey: A Case Study.

Haider, K., Ahmad, N., & Ali, Z. (2024). Problems and challenges faced by non-Muslim students in achieving higher education at universities of Pakistan: An evaluative study. *Spry Contemporary Educational Practices*, *3*(1), 265–290.

Hattie, J., & Timperley, H. (2007). The power of feedback. *Review of educational research*, *77*(1), 81-112.

Hord, S. M. (Ed.). (2004). *Learning together, leading together: Changing schools through professional learning communities*. Teachers College Press.

Hussain, A., Jat, Z. G., Hassan, M., Hafeez, A., Iqbal, S., & Imran, M. (2022). Curriculum Reforms in School Education Sector in Sindh; What Has Changed? *Journal of Positive School Psychology, 6(9),* 2675-2687.

Jabeen, M., Ali, Z., & Ahmad, N. (2023). Factor Effecting on Quality Teaching Learning at Public Sector Schools in Karachi Pakistan. *Journal of Educational Research and Social Sciences Review (JERSSR)*, *3*(1), 92–98.

Jacob, F. I. L. G. O. N. A., John, S. A. K. I. Y. O., & Gwany, D. M. (2020). Teachers' pedagogical content knowledge and students' academic achievement: A theoretical overview. *Journal of Global Research in Education and Social Science*, *14*(2), 14-44.

Johnson, D. W., & Johnson, R. T. (2009). An educational psychology success story: Social interdependence theory and cooperative learning. *Educational researcher*, *38*(5), 365-379.

Khoso, F. J., Oad, L., & Ahmad, N. (2023). Exploring Teachers' Perspectives on Effective Leadership Styles at Secondary Level in Karachi, Pakistan. *Voyage Journal of Educational Studies*, *3*(4), 209–226. https://doi.org/10.58622/vjes.v3i4.104

Kolachi, I. A., Shah, S. G. M., Ahmed, I., Ali, Z. & Ahmad, N. (2024). Factors Affecting English Language Teachers' Participation in Professional Development at Private Universities in Karachi, Pakistan. *Journal of Policy Research. 10(*2), 697–705. DOI:

Malik, M., Muzaffar, B., & Haq, A. U. (2025). Bridging Risk, ESG, and Digitalization: A Literature Review on Internal Audit's Strategic Role in Corporate Governance. *Pakistan Social Sciences Review*, *9*(2), 626-640.

Mankash, M. A., Ahmed, S. T., Shabbir, N., & Imran, M. (2025). Second Language Learning in the Digital Age: How Technology Shapes Language Acquisition at Universities in Karachi, Pakistan. Liberal Journal of Language & Literature Review, 3(1), 182-199.

Marzano, R. J., & Marzano, J. S. (2003). *Classroom management that works: Research-based strategies for every teacher*. Ascd.

Naeem, S., Ali, Z., & Ahmed, N. (2022). Evaluation of the Causes of Interest Decline in the Subject of Chemistry amongst Secondary and Higher Secondary School Students in Karachi Pakistan. *International Journal of Social Science & Entrepreneurship*, *2*(2), 175–184

Oad, L., Shah, R., Sewani, R., Ahmad, N., Akhtar, N., & Imran, M. (2024). Empowerment of Artificial Intelligence in Learning Optimisation Student Perceptions in Karachi, Pakistan. *International Journal Of Educational Sciences, 47*(2), 34-44.

Oad, L., Shah, R., Sewani, R., Ahmad, N., Akhtar, N., & Imran, M. (2024). Empowerment of Artificial Intelligence in Learning Optimisation Student Perceptions in Karachi, Pakistan. *International Journal of Educational Sciences*, *47*(2), 34-44.

Patton, M. Q. (1990). *Qualitative evaluation and research methods*. Newbury Park, CA: Sage.

Pedder, D., & Opfer, V. D. (2019). School orientation to teacher learning and the cultivation of ecologies for innovation: A national study of teachers in England. *Innovations in Educational Change: Cultivating Ecologies for Schools*, 147-179.

Postholm, M. B. (2012). Teachers' professional development: A theoretical review. *Educational research*, *54*(4), 405-429.

Prince, M. (2004). Does active learning work? A review of the research. *Journal of engineering education*, *93*(3), 223-231.

Qazi, A. H., Khan, A. R., Haq, A. U., & Talat, M. (2025). Board Gender Diversity In Corporate Governance Of Public Listed Companies: A Literature Review. *Journal of Business and Management Research*, *4*(2), 786-800.

Shah, S. G. M., Ali, Z., & Ahmad, N. (2024). Analytical study of Awareness of Metacognitive Reading Strategies and Reading Comprehension among College Students. *Voyage Journal of Educational Studies*, *4*(1), 34–46.

Shah, S. M. A., Ahmed, N., Haq, A. U., & Saba, S. (2025). Leadership for Innovation: Fostering the Culture of Creativity in Organization: A Systematic Literature Review. *Journal of Asian Development Studies*, *14*(2), 945-957.

Shulman, L. S. (1987). *Knowledge and teaching: Foundations of the new reform. Harvard Educational Review, 57*(1), 1-22.

Simonsen, B., Fairbanks, S., Briesch, A., Myers, D., & Sugai, G. (2008). Evidence-based practices in classroom management: Considerations for research to practice. *Education and treatment of children*, *31*(3), 351-380.

Thomas, M., Khan, A. H., & Ahmad, N. (2022). Way forward for post pandemic online teaching: A case of higher education in Pakistan. *Journal of Humanities, Social and Management Sciences (JHSMS)*, *3*(1), 1–15. https://doi.org/10.47264/idea.jhsms/3.1.1

Tohani, E., & Aulia, I. (2022). Effects of 21st century learning on the development of critical thinking, creativity, communication, and collaboration skills. *Journal of Nonformal Education*, *8*(1), 46-53.

Vescio, V., & Adams, A. (2015). Learning in a professional learning community: The challenge evolves. *The Sage handbook of learning*, 274-284.

Vescio, V., Ross, D., & Adams, A. (2008). A review of research on the impact of professional learning communities on teaching practice and student learning. *Teaching and teacher education*, *24*(1), 80-91.

Wong, H. K., & Wong, R. T. (1991). *The first days of school*. Sunnyvale, CA: Harry K. Wong Publications.