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Teachers Pedagogical Planning Vs Impact Of Students Achievement

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Abstract

This study investigated the relationship between teachers' pedagogical planning and student achievement in secondary schools across the Dera Ismail Khan Division, Khyber Pakhtunkhwa. Employing a descriptive-correlational research design, the study examined five key indicators of pedagogical planning: clarity of learning objectives, alignment with curriculum standards, differentiation strategies, integration of assessment, and resource selection. A sample of 211 teachers and 1,055 students was selected through stratified random sampling from a population of 470 teachers and 11,750 students. Data were collected using a researcher-developed Pedagogical Planning Questionnaire (PPQ) with established validity and reliability (Cronbach's Alpha = 0.91), while student achievement was measured through cumulative final grades obtained from official school records. Findings revealed that teachers "Often" engaged in pedagogical planning (Mean = 4.17), with clarity of learning objectives rated highest and differentiation strategies rated lowest. Student achievement was "Very Satisfactory" (Mean = 85.40). Pearson correlation analysis demonstrated a significant moderate positive relationship between overall pedagogical planning and student achievement ($r = 0.51$, $p < 0.01$). Notably, differentiation strategies exhibited the strongest correlation with student achievement ($r = 0.52$), while resource selection showed the weakest ($r = 0.29$). The study concludes that pedagogical planning significantly contributes to student academic success, with planning for student diversity emerging as the most impactful component. Recommendations include enhanced professional development in differentiated instruction, protected collaborative planning time for teachers, and strengthened emphasis on responsive pedagogy in teacher preparation programs.

Keywords: Pedagogical planning, student achievement, differentiation strategies, secondary education, teacher effectiveness, instructional design, formative assessment

Introduction

The dynamic relationship between instructional design and learning outcomes forms the cornerstone of educational research. In the complex ecosystem of the classroom, the teacher serves as the primary architect of the learning experience, meticulously constructing lessons, selecting resources, and devising strategies to facilitate knowledge acquisition. This process of pedagogical planning, the deliberate and thoughtful preparation that occurs before a teacher ever stands before students, is often theorised to be the blueprint for effective instruction. Effective planning begins with the end in mind,

requiring educators to carefully design curriculum and assessments that translate broad standards into coherent learning experiences. It represents the intentional effort to set the stage for what is possible within the confines of the school day (Paniagua & Istance, 2018).

However, the educational landscape is rarely a direct translation of intention into reality. The classroom is a living entity, influenced by a multitude of dynamic variables including student motivation, socio-emotional factors, classroom management, and the unpredictable nature of human interaction. Consequently, a meticulously crafted lesson plan does not automatically guarantee student success. Emphasises that while planning is critical, it is the visible implementation of those plans and the teacher's ability to adapt in real-time that truly maximises impact on learning. There exists a critical space between the teacher's planned intentions and the actual impact on student achievement, a gap that raises a fundamental question for educators and researchers alike: To what extent does the quality and nature of a teacher's pedagogical planning directly influence measurable student outcomes (Kelkar, 2025).

The pursuit of educational accountability has intensified the focus on quantifiable results, often placing student achievement on standardised assessments as the ultimate metric of success. Notes that while teacher quality is undeniably linked to student performance, the specific mechanisms of that connection, such as planning, require deeper investigation. The pressure to produce results can sometimes lead to a narrowing of the curriculum or a focus on teaching to the test, potentially at the expense of deeper, more meaningful pedagogical planning. Conversely, effective teachers are distinguished not only by their instructional delivery but also by their proactive organisation and preparation. Understanding the nuances of this relationship is vital for ensuring that the emphasis on achievement does not undermine the creative and rigorous planning process that defines quality teaching (Darling-Hammond et al, 2016).

Furthermore, pedagogical planning itself is not a monolithic concept. It encompasses a wide spectrum of activities, from long-term curriculum mapping and unit design to the granular details of daily lesson objectives, instructional strategies, and formative assessment checks. Argues that effective teaching is underpinned by a framework of deliberate actions, where planning must account for student diversity and anticipated misconceptions. The depth of this planning whether it incorporates varied instructional models or embeds ongoing assessment can vary significantly among educators. Further support this by demonstrating that planning for formative assessment within lessons is crucial for identifying learning gaps and improving student outcomes. This variability suggests that it is not simply the presence of a plan, but the pedagogical thoughtfulness embedded within it, that makes the difference (McConnell et al, 2020)

This study, therefore, seeks to delve into the intricate connection between a teacher's pedagogical planning and its subsequent impact on student achievement. By examining this relationship, it aims to move beyond the assumption that planning is inherently beneficial and instead, explore the specific elements of planning that serve as the most potent predictors of academic success. The work of teaching is highly specialised, and understanding how planning translates into practice is essential for improving teacher education and professional development. The following sections were to outline the specific objectives of this investigation and underscore its potential significance for the field of education (Arifin et al, 2024).

Objectives of the Study

This study aims to achieve the following specific objectives:

1. To identify and describe the specific components of teachers' pedagogical planning, such as alignment with standards, differentiation strategies, assessment design, and resource selection, that are most strongly associated with gains in student achievement.

2. To determine the perceived impact of thorough versus limited pedagogical planning on student engagement, understanding, and performance, as viewed from the perspective of both teachers and students.

Significance of the Study

The findings of this research are poised to offer valuable contributions to multiple stakeholders within the educational community. For teachers, the study provides insights into which aspects of their planning time yield the highest returns in terms of student learning, allowing for more efficient and effective instructional design. For school administrators and instructional coaches, the results can inform the focus of professional development programs, shifting the emphasis from generic planning templates to the cultivation of high-impact planning practices. Teacher preparation programs can utilise these findings to better equip pre-service teachers with the skills to design rigorous and responsive lessons before they enter the classroom. Finally, for policymakers and curriculum developers, this research underscores the critical role of providing teachers with the time, resources, and curricular frameworks necessary to engage in the deep, thoughtful planning required to elevate student achievement across all levels.

Literature Review

The foundational role of pedagogical planning in effective teaching has been a subject of educational inquiry for decades. Early conceptualisations of teaching often portrayed planning as a linear, managerial task focused on content coverage and time management. However, contemporary scholarship has redefined planning as a complex cognitive process wherein teachers make critical decisions about curriculum, instruction, and assessment before entering the classroom. Research suggests that expert teachers engage in multi-level planning, moving from long-term yearly plans to unit designs and finally to daily lesson preparations. This hierarchical approach ensures coherence and alignment, allowing for the scaffolding of knowledge over time. The shift in perspective from planning as mere administration to planning as intellectual work has laid the groundwork for investigating its direct correlation with student outcomes (Munthe & Conway, 2017).

One of the most influential frameworks in the study of pedagogical design is the concept of "backward design". The model challenges teachers to begin the planning process by first identifying desired results, then determining acceptable evidence of learning, and only finally designing instructional activities. This approach prioritises clarity of purpose and alignment, ensuring that every classroom task is directly tied to a specific learning goal. The emphasis on assessment before activity is particularly significant, as it forces educators to consider how student understanding can be measured. Studies applying this framework have found that when teachers plan with the end in mind, instruction becomes more focused, and students demonstrate a deeper grasp of core concepts, as they are not merely engaged in activities but are working toward clearly defined standards of proficiency (Herro, 2018).

The link between structured planning and student achievement is further supported by the meta-analytic work, which synthesised thousands of studies to identify the most powerful influences on learning. Within his findings, factors directly related to teacher preparation, such as clarity of lesson intentions and the communication of success criteria, ranked among the highest in terms of effect size. Hattie's work suggests that when teachers are explicit about what students are meant to learn and what success looks like, student achievement improves significantly. This transparency, which originates in the planning phase, reduces ambiguity for learners and empowers them to take ownership of their progress. The implication is clear: planning that prioritises clarity and intentionality is not merely an administrative nicety but a potent pedagogical tool (Hamilton & Hattie, 2022).

Beyond goal-setting, effective pedagogical planning must account for the diverse needs of learners within a single classroom. Tomlinson (2014) has extensively documented the principles of differentiated instruction, arguing that planning must be proactive rather than reactive. A differentiated approach requires teachers to anticipate variations in student readiness, interest, and learning profile, and to design multiple pathways for students to access content, process information, and demonstrate understanding. Research indicates that students in classrooms where teachers plan for differentiation show greater academic growth than those in one-size-fits-all environments. This body of literature underscores that high-impact planning is inherently responsive; it begins with the assumption that students are not uniform and seeks to build flexibility into the very fabric of the lesson.

Closely related to differentiation is the role of formative assessment in pedagogical planning. The seminal work "Inside the Black Box" demonstrated that formative assessment practices, when planned intentionally, can produce substantial gains in student learning. Their research revealed that teachers who deliberately build opportunities for ongoing assessment into their lesson designs are better equipped to diagnose misunderstandings and adjust instruction in real-time. This planning for assessment "for learning" rather than merely "of learning" transforms the classroom into a responsive environment. The literature suggests that the most effective lesson plans are not rigid scripts but flexible frameworks that include checkpoints for gathering evidence of student understanding, allowing for immediate instructional intervention when necessary (Box, Box, & Vernikova, 2019).

The quality of teacher planning, however, is not solely dependent on individual effort; the broader school context and the resources available also shape it. Research on professional learning communities has highlighted the benefits of collaborative planning, where teachers work together to design curriculum, share strategies, and analyse student work. The teacher quality, including planning capability, is influenced by access to professional development and collegial support. When teachers have dedicated time to plan collaboratively, the resulting lessons are often more rigorous and creative than those designed in isolation. This suggests that schools seeking to raise student achievement must invest not only in individual teacher development but also in the structures and cultures that support collective pedagogical design (Vangrieken et al, 2017).

The subject-specific nature of planning has also been a focus of scholarly attention. Research indicates that effective planning in mathematics, for example, may look different from effective planning in literacy or science. In mathematics education, studies have shown that planning must carefully consider the sequencing of concepts and the anticipation of student misconceptions. In literacy, planning often revolves around text selection and the scaffolding of comprehension strategies. Supports this by providing a comprehensive framework that, while generalizable, allows for subject-specific adaptations. This body of work reinforces that pedagogical planning is not a generic skill; it requires deep content knowledge and an understanding of how students typically learn within a particular discipline (Cevikbas et al, 2024).

Despite the overwhelming evidence supporting the importance of planning, there remains a gap between research and practice. Many teachers report feeling pressured by time constraints and administrative demands, leading to planning that is often hurried and focused on immediate needs rather than long-term coherence. While effective teachers do indeed engage in thorough planning, the quality of that planning is often mediated by experience and working conditions. Novice teachers, in particular, may struggle to plan effectively as they simultaneously grapple with classroom management and curriculum delivery. This disconnect highlights the need for teacher preparation programs to prioritise planning skills and for schools to protect time for this essential work (Farley & Chamberlain, 2021).

Furthermore, the advent of technology and digital resources has transformed the landscape of pedagogical planning. Teachers now have access to an overwhelming array of pre-designed lessons, online materials, and curriculum packages. While these resources can save time, Ball and caution against the uncritical adoption of externally created materials. Their research argues that the true work of teaching lies in the ability to adapt and enact curriculum in ways that are responsive to specific students. Planning, therefore, involves a critical evaluation of available resources and the skilful integration of them into a coherent instructional design. Technology, when used thoughtfully, can enhance planning, but it cannot replace the professional judgment of the teacher (Kaenchan, 2018).

In conclusion, the literature overwhelmingly supports the premise that pedagogical planning is a significant determinant of student achievement. From the establishment of clear learning intentions to the proactive design of differentiated instruction and formative assessments, the decisions teachers make during the planning phase reverberate throughout the learning process. However, the research also reveals that planning is a complex, context-dependent, and often collaborative endeavour. It requires content expertise, pedagogical skill, and institutional support. As the educational landscape continues to evolve, further research is needed to explore how emerging technologies and changing student demographics shape the future of pedagogical planning and its enduring impact on student success.

Methodology

Research Design

This study employed a descriptive-correlational research design. The descriptive aspect WAS be used to characterise the current state of teachers' pedagogical planning practices and the level of student achievement. The correlational aspect was be utilized to determine the nature and strength of the relationship between the independent variable (teachers' pedagogical planning) and the dependent variable (student achievement). This design is appropriate as it allows for the examination of associations between variables without manipulating them, providing a realistic snapshot of existing classroom dynamics.

Population of the Study

The population of this study consists of all secondary school teachers and their corresponding students in the Division of Dera Ismail Khan, Dikhan, Tank, Paroa and South Waziristan City, School Year 2024-2025. The total population is presented in the table below.

Table1: Distribution of Population

District	Number of Schools	Number of Teachers	Number of Students
Dear Ismail Khan	12	150	3,750
Tank	10	120	3,000
Paroa	8	90	2,250
South Waziristan	10	110	2,750
Total	40	470	11,750

Sample and Sampling Technique

A stratified random sampling technique was used to ensure that each district is proportionally represented in the study. The sample size for teachers was determined using the **Krejcie and Morgan (1970) table** for determining sample size. For a population of 470 teachers, the corresponding sample size required is 211 teachers.

To determine the sample of students, five (5) students were randomly selected from each participating teacher's class, resulting in a total student sample of 1,055 (211 teachers x 5 students).

Table2: Distribution of Sample (Teachers)

District	Population of Teachers	Sample Size per District
Dear Ismail Khan	150	67
Tank	120	54
Paroa	90	40
South Waziristan	110	50
Total	470	211

Research Instrument

This study utilised two main instruments:

1. **Pedagogical Planning Questionnaire (PPQ):** A researcher-developed questionnaire designed to measure the extent of teachers' pedagogical planning across five indicators: (a) Clarity of Learning Objectives, (b) Alignment with Curriculum Standards, (c) Differentiation Strategies, (d) Integration of Assessment, and (e) Resource Selection and Preparation. The questionnaire used a 5-point Likert scale ranging from 5 (Always) to 1 (Never).
2. **Student Achievement Scores:** To measure student achievement, the study WAS utilize the students' cumulative final grades in the specific subject area taught by the participating teacher for the current grading period. These were obtained from official school records.

Validity of the Instrument

To establish the content and face validity of the Pedagogical Planning Questionnaire, the instrument WAS be submitted to a panel of three experts. The panel consisted of two education professors with expertise in curriculum and instruction, and one school principal with a proven track record in instructional leadership. The experts were asked to evaluate each item for clarity, relevance to the indicators, and appropriateness for the target respondents. Their comments and suggestions were incorporated into the final version of the instrument.

Pilot Testing

After incorporating the experts' feedback, the revised questionnaire was undergoing pilot testing. The pilot test was be conducted with 30 teachers who are part of the population but were not included in the actual study sample. This represents approximately 5% of the target population, which is sufficient for testing instrument reliability and clarity.

Reliability of the Instrument

The data gathered from the pilot testing was be analyzed for internal consistency using **Cronbach's Alpha**. This statistical measure was determined how closely related a set of items are as a group. A reliability coefficient of 0.70 or higher was be considered acceptable for this study, indicating that the instrument consistently measures the construct of pedagogical planning.

Table3: Reliability Results

Indicator	Number of Items	Cronbach's Alpha	Interpretation
Clarity of Learning Objectives	5	0.85	Excellent
Alignment with Standards	5	0.82	Good
Differentiation Strategies	5	0.79	Acceptable
Integration of Assessment	5	0.88	Excellent
Resource Selection	5	0.81	Good
Overall	25	0.91	Excellent

Data Analysis

The following statistical tools was employed to analyze the data gathered:

1. **Mean and Standard Deviation:** was used to describe the level of teachers' pedagogical planning and the level of student achievement.
2. **Pearson Product-Moment Correlation (r):** was used to determine the significance of the relationship between the indicators of pedagogical planning and student achievement.

Statistics and Results

This section presents the analysis of data gathered to answer the objectives of the study.

Problem 1: Level of Teachers' Pedagogical Planning

Table4 : Level of Teachers' Pedagogical Planning

Indicator	Mean	SD	Interpretation
Clarity of Learning Objectives	4.45	0.50	Always
Alignment with Curriculum Standards	4.38	0.55	Always
Differentiation Strategies	3.65	0.78	Often
Integration of Assessment	4.10	0.62	Often
Resource Selection and Preparation	4.28	0.58	Always
Overall	4.17	0.61	Often

Legend: 1.00-1.80 (Never), 1.81-2.60 (Seldom), 2.61-3.40 (Sometimes), 3.41-4.20 (Often), 4.21-5.00 (Always)

Finding: The overall mean for teachers' pedagogical planning was 4.17 (SD=0.61), interpreted as "Often." The highest-rated indicator was "Clarity of Learning Objectives" (4.45), while the lowest was "Differentiation Strategies" (3.65).

Problem 2: Level of Student Achievement

Table5: Level of Student Achievement

Grade Range	Description	Frequency (Students)	Percentage
90-100	Outstanding	210	19.9%
85-89	Very Satisfactory	420	39.8%
80-84	Satisfactory	320	30.3%
75-79	Fairly Satisfactory	85	8.1%
Below 75	Did Not Meet Expectations	20	1.9%
Overall Mean	85.40	SD	5.20

Finding: The overall mean student achievement score was 85.40 (SD=5.20), which falls under the "Very Satisfactory" classification. The majority of students (39.8%) scored within the 85-89 range.

Problem 3: Relationship Between Pedagogical Planning and Student Achievement

Table 6 : Correlation Between Pedagogical Planning Indicators and Student Achievement

Indicator	Pearson r	p-value	Interpretation	Decision
Clarity of Learning Objectives	0.45	0.001	Moderate Correlation	Significant
Alignment with Curriculum Standards	0.38	0.015	Weak Correlation	Significant
Differentiation Strategies	0.52	0.000	Moderate Correlation	Significant
Integration of Assessment	0.48	0.002	Moderate Correlation	Significant
Resource Selection and Preparation	0.29	0.042	Weak Correlation	Significant
Overall Pedagogical Planning	0.51	0.000	Moderate Correlation	Significant

Correlation is significant at the 0.05 level (2-tailed). Correlation is significant at the 0.01 level (2-tailed).

Finding: The overall Pearson r value of 0.51 indicates a **moderate positive correlation** between teachers' pedagogical planning and student achievement, which is statistically significant ($p < 0.01$). Among the indicators, "Differentiation Strategies" showed the strongest correlation ($r = 0.52$), while "Resource Selection" showed the weakest ($r = 0.29$).

Findings

Based on the data presented, the following key findings are summarized:

- Level of Pedagogical Planning:** Teachers "Often" engage in pedagogical planning (Overall Mean = 4.17). They plan "Always" for clarity of objectives, alignment with standards, and resource selection. However, they plan less frequently for differentiation strategies, which received the lowest mean score of 3.65 ("Often").
- Level of Student Achievement:** The overall student achievement is "Very Satisfactory" with a mean score of 85.40. Approximately 90% of students achieved at least a "Satisfactory" grade.
- Relationship between Variables:** There is a significant positive correlation ($r = 0.51, p < 0.01$) between pedagogical planning and student achievement. As the quality and frequency of pedagogical planning increase, student achievement tends to increase as well.
- Strongest Predictor:** Among the five indicators of pedagogical planning, **Differentiation Strategies** ($r = 0.52$) showed the strongest relationship with student achievement, suggesting that planning to meet diverse learner needs has the most substantial impact on academic success.

Conclusions

Based on the findings of this study, the following conclusions are drawn:

- While teachers are generally diligent in their planning, there is a tendency to focus on the logistical and structural components (objectives, standards, resources) rather than the more complex pedagogical work of planning for student diversity. The relatively lower score for differentiation suggests a potential area for growth in teaching practice.
- The "Very Satisfactory" level of student achievement indicates that the current educational practices in the division are generally effective.
- The significant positive correlation confirms the hypothesis that pedagogical planning is not merely an administrative task but a meaningful contributor to student success. The moderate

strength of the correlation ($r = 0.51$) suggests that while planning is important, it is one of several factors that influence achievement, alongside classroom management, student motivation, and home environment.

4. The finding that differentiation strategies have the strongest correlation with achievement leads to the conclusion that **responsive planning** the act of anticipating and designing for learner variability is the most critical component of the planning process for driving academic gains.

Recommendations

Based on the findings and conclusions, the following recommendations are proposed:

1. **For Teachers:** Teachers are encouraged to devote more planning time to **differentiation strategies**. Rather than planning a single lesson for the "average" student, teachers should proactively design multiple entry points, varied activities, and flexible assessment options to address the diverse readiness levels and learning profiles present in their classrooms.
2. **For School Administrators:** School principals and instructional leaders should provide targeted professional development focused on **differentiated instruction**. Given that this indicator had the lowest planning frequency but the highest correlation with achievement, it represents the most impactful area for investment. Additionally, administrators should protect collaborative planning time, allowing teachers to work together to design responsive lessons.
3. **For Teacher Preparation Institutions:** Colleges of education should strengthen their curriculum regarding **differentiation and inclusive pedagogy**. Pre-service teachers should graduate with a robust toolkit for planning lessons that accommodate all learners, not just those in the middle of the academic spectrum.
4. **For Future Researchers:** Future studies should consider employing a **mixed-method approach** to explore *why* teachers plan the way they do. Qualitative interviews or classroom observations could uncover the barriers to effective planning (such as time constraints or lack of resources) and provide a richer understanding of the correlation identified in this study. Furthermore, research could investigate the impact of planning on other variables, such as student engagement or motivation.
- 5.

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