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ANALYZING THE ROLE OF TEACHING PRACTICUM IN THE DEVELOPMENT OF PEDAGOGICAL CONTENT KNOWLEDGE AMONG PROSPECTIVE TEACHERS

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ABSTRACT

Pedagogical Content Knowledge (PCK) represents a critical dimension of teacher education, as it profoundly shapes instructional effectiveness and classroom practice. This study aimed to examine the application of PCK among prospective teachers during their teaching practicum. The population included students enrolled in B.Ed. (Hons.) programs at public universities in Lahore, Pakistan. Using a convenient sampling technique, a sample of 30 prospective teachers was selected. Data were collected through an open-ended observational checklist administered during classroom observations of teaching practicum sessions. The findings revealed that a considerable number of prospective teachers effectively demonstrated elements of PCK in their instructional practices. The study underscores the importance of integrating PCK-focused training within teacher education curricula to strengthen pedagogical competence and improve teaching and learning outcomes. Future research is recommended to compare the application of PCK among prospective teachers in public and private universities to identify institutional variations and best practices.

Keywords: *Pedagogical Content Knowledge (PCK); Prospective Teachers; Teaching Practicum; Teacher Education; Instructional Practice.*

INTRODUCTION

Pedagogical Content Knowledge and the teaching practice of prospective teachers have been widely studied in recent years. Pedagogical Content Knowledge refers to the understanding of how to teach a specific subject matter effectively. Pedagogical Content Knowledge is an important component of effective teaching, and it is an essential component of teacher education programs (Hashweh, 2015; Shulman, 1986). Teachers with well-developed PCK are better equipped to understand the needs of their students and to create instructional activities that support their learning. This can lead to more effective teaching, as students are more likely to engage with the material and develop a deeper understanding of the subject matter (Driel et al.2018). PCK is a crucial part of a teacher's professional knowledge base and has a big impact on how well students are taught and how well they learn. Strong PCK enables prospective teachers to design and implement efficient teaching strategies, accommodate various student requirements and learning preferences, and foster a happy learning environment (Ruan & Chen, 2021).

PCK is important in promoting the professional development of teachers. According to a study by Ko and Sung (2021), instructors who continually grow their PCK through professional development activities and reflection on their practice are better able to comprehend the connection between their topic

knowledge and their pedagogical knowledge. As a result, instruction becomes more effective, and student learning outcomes are enhanced. PCK is crucial for advancing social justice and equity in education. Teachers who have a strong PCK are better equipped to recognize the various needs of their students and design inclusive, culturally sensitive lessons (van Driel et al., 2018).

Teachers with well-developed PCK are better equipped to understand the needs of their students and create instructional activities that support their learning. This leads to more effective teaching, as students are more likely to engage with the material and develop a deeper understanding of the subject matter. The development of PCK is a lifelong process that is continually shaped by a teacher's own experiences and the experiences of their students (Hashweh, 2015). In all of the important subject areas the teacher teaches, teachers must be aware of both the typical and substitute perceptions of their pupils. This is highlighted by Shulman's concept of PCK. It's vital to quickly go through the formation, qualities, and function of different perceptions, as well as their impact on student learning, to better grasp the necessity for this knowledge (LANE,2013). Research has demonstrated that training programs and the beginning of a teacher's career make learning by prospective instructors more productive (Brownlee, 2003). With a specific set of instructional and learning-related beliefs, they enter prospective teacher education programs. Engagement with the academic staff during the prospective teacher education program gives the students the chance to challenge, reevaluate, 3 reconstruct, reconsider, and modify their preconceived ideas and pedagogical and educational beliefs (Khan, Batool &Deeba, 2021). As a result, teacher educators' primary responsibility is to teach them to develop their teaching abilities, strengthen their content knowledge, and alter their philosophical and epistemological perspectives. Because changing instructors' attitudes have a stronger impact on their instructional practices, current research on teacher education is more focused on doing so. Therefore, it is crucial to look into teachers' approaches and concepts (Goncalvest, Azeved, & Alves, 2013). The concept of Pedagogical content knowledge defines PCK as the knowledge of the teaching process which is used by teachers (Kind, 2009). PCK is made up of knowledge of content which means conceptual and procedural knowledge of any topic, the knowledge of content teaching which is about the presentation of a lesson to the student and the knowledge of the student which leads to understanding the needs of students, making strategies to fulfill the needs (Muhtarom et al.,2019). The concept of Pedagogical content knowledge was established by Shulman (1986). According to him, PCK was a missing paradigm in research that was conducted on teacher education. The subject matter of prospective teachers' training and evaluation was ignored. He focused attention on the importance of knowledge of the subject matter. To comprehend how certain topics, concerns, or problems are organized, represented, and tailored to the wide range of interests and learning styles of learners, PCK symbolizes the mixing of content and pedagogy (Shulman,1986). The study may help to monitor Prospective teachers' teaching practices to bridge the knowledge-application gap. The finding of the study may help prospective teachers to enhance their pedagogical content knowledge in their future teaching practices. This study may be helpful to teachers to improve their students' teaching practice. The objective of the study was to explore the application of pedagogical content knowledge of prospective teachers in their teaching practicum practices.

Review of relative literature

Pedagogical content knowledge was introduced 36 years ago by Shulman (1986) who stated that a teacher was only deemed effective a century ago if they were more knowledgeable about the material, they were teaching the students. To better grasp how specific topics, concerns, or problems are arranged, presented, and tailored to learners' particular interests and range of skills, PCK integrates content and pedagogy (Shulman, 1987). To lessen teachers' misconceptions, Shulman (1987) proposed PCK. PCK is a merging of content and pedagogy to improve comprehension of how certain topics, concerns, or problems are arranged, portrayed, and tailored to the wide range of

interests and skills of learners. According to Shulman's research, teachers "uniquely the domain of teachers, their specific type of professional understanding" have a unique body of knowledge that combines pedagogy and content (Shulman, 1987). This combination was referred to as pedagogical content knowledge by Shulman, who defined it as subject-specific information for teaching a certain subject.

PCK is an awareness of how certain topics, problems, or issues are arranged, portrayed, and suited to the different interests and skills of learners and delivered for instruction, according to Shulman (1987). The category most likely to separate the understanding of the subject experts from that of the pedagogue is pedagogical content knowledge. Later, Shulman and his associates improved their framework to take into account the significance of a third knowledge dimension in the development of PCK. Pedagogical methods help instructors become more creative, inventive, and able to create better and more lasting changes. Pedagogical practices make teachers more effective and efficient, creative, and skilled to make developing productive and successful improvements (Gopang, 2016). The teacher's aptitude for fostering a variety of learning environments is known as pedagogic expertise (Nurfuadi, 2012). Pedagogical expertise is a skill in managing pupils while adhering to the applied curriculum (Sagala, 2009). One of the abilities held by the potential teacher is pedagogical understanding. Teaching in this scenario is observed through engagement and communication with students. Meanwhile, content knowledge refers to a candidate's familiarity with the subject matter, which in this instance might be understood as from the student's mental activity (Zayyadi, M., Nusantara, et al,2020). In Malaysia, studies are conducted on PCK, our PCK of prospective teachers. A study was conducted in Malaysia. There is a strong connection between a teacher's knowledge, how she acquired it, and the things she can achieve when delivering instruction. The development of future teachers' subject matter and instructional knowledge falls largely under the purview of mathematics teacher educators, who also have a significant impact on their perspectives on mathematics teaching and learning as well as their awareness of their students' propensities for mathematics (Kathirveloo, Puteh & Matematik, 2014).

Research Methodology

The study employed a qualitative approach, using phenomenological research. The population consisted of prospective teachers enrolled in the four-year B.Ed. (Hons.) teacher education program at public universities in Lahore. This group included approximately 1,500 students who were in the process of completing their teacher training. A convenient sampling technique was used to select male and female students from the Department of Education at two public universities in Lahore. The researchers observed 30 prospective teachers during their teaching practicum in the classroom.

Research Instrumentation

The research instrument used for data collection in this study included observational checklists. The observational checklist also included four dimensions: classroom management (7 items), instructional strategies (7 items), content knowledge (8 items), and lesson planning (8 items). Some items on the checklist required a simple yes or no response, while others required a more detailed explanation.

Data Analysis

The researchers observe the prospective teachers in their teaching practice to check how much they practice PCK in classrooms. This is a qualitative method of data collection and analysis that involves observing and documenting the behavior of the participants in their natural environment.

Data Analysis and Interpretation

Observational Analysis

The researchers observed 30 prospective teachers, 25 of whom were female and the rest of whom were male. The component of PCK (Pedagogical Content Knowledge) being studied was classroom management, which contains seven statements related to the effective management of the classroom environment.

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Table 1
Classroom Management

Statements	Male		Female	
	Yes	No	Yes	No
Prospective teachers don't send a student to the principal's office for misbehavior	0	5	2	23
Prospective teacher scolded improper behavior in a loud voice in the spot.	0	5	6	19
Prospective teacher confidently manages the classroom.	5	0	1	24
Prospective teacher observes the student's behavior in the classroom.	5	0	2	1
Prospective teacher utilizes various seating arrangements (group, etc.) in the classroom.	5	0	25	0
i. Regular	1	0	21	0
ii. U-shaped	2	0	4	0
iii. Round shape	3	0	0	0
Prospective teacher uses reinforcement techniques.	5	0	24	0
i. Positive	5	0	16	0
ii. Negative	0	5	9	0

The first statement in this component was about the managing inappropriate behaviour of students in the classroom and the actions taken by male and female prospective teachers. The statement notes that 96% (28) of the prospective teachers did not send students to the principal's office for misbehaviour. This suggests that the majority of these teachers were able to effectively manage misbehaviour within the classroom environment, without resorting to more drastic measures such as sending students to the principal's office.

Interestingly, the statement also notes that only 4% (2) of female prospective teachers sent students to the principal's office for misbehaviour, while none of the male prospective teachers did so. This finding suggests that there may be differences in the approaches to classroom management between male and female teachers. Effective management of inappropriate behaviour in the classroom is a critical aspect of teaching, as it can have a significant impact on student engagement, learning, and overall classroom dynamics. Teachers must be able to create a positive and supportive classroom environment that promotes respect, responsibility, and collaboration among students.

The next statement that was observed in the study related to the management of improper behaviour of students by prospective teachers. Specifically, the study examined whether teachers used a loud voice or scolded students to control improper behaviour. The statement

notes that 81% (24) of prospective teachers did not use a loud voice or scold students in the classroom while teaching and conducting activities. This suggests that these teachers were able to manage improper behaviour without resorting to negative or punitive measures. However, the statement also notes that 19% (6) of prospective teachers found it difficult to manage improper behaviour and did resort to using a loud voice or scolding students in the classroom. Notably, all of these teachers were female. One of the female prospective teachers was observed using inappropriate techniques to manage improper behaviour. Specifically, this teacher discouraged students who found it difficult to answer questions by calling them losers and encouraging other students to bully them while the school teacher was present in the classroom. This behaviour is unacceptable and can have a detrimental impact on the academic and emotional well-being of students being bullied. Effective classroom management strategies can include setting clear expectations and rules, using positive reinforcement to encourage good behaviour, and providing consequences for improper behaviour that are appropriate and consistent. It is important for teachers to prioritize creating a safe and supportive learning environment for all students, and to seek support and guidance when they encounter challenges in managing improper behaviour.

The next statement that was observed in the study relates to the behaviour of students in the classroom, and how prospective teachers responded to it. It was found that 97% (29) of male and female prospective teachers observed the behaviour of students, engaged them in the lesson and activity, and resolved their issues. This suggests that most teachers were attentive and responsive to their students' needs and behaviours. However, the statement also notes that 3% (1) of female teachers were inattentive in the classroom. Specifically, the prospective teacher in class was busy completing her planners while the students were unattended, wandering in the classroom, and leaving without permission. The teacher only wrote the name of the lesson on the whiteboard, indicating a lack of engagement with the students. The findings of observation show the importance of effective classroom management and teacher attentiveness in promoting positive learning. Teachers who are confident, engaged, and attentive are better able to manage student behaviour, promote student engagement and learning, and support the academic and emotional well-being of their students.

In the fourth statement of the study, the researchers observed the learning behaviour of students and how prospective teachers responded to it. The results showed that 95% (29) of prospective teachers observed their students and engaged them in learning activities. These teachers were attentive to their students' needs and adapted their teaching methods to suit individual students. Specifically, the researchers noted that these teachers helped students who found reading difficult. They read for them and repeated difficult words, again and again, to help them better understand. This approach not only helps struggling students improve their reading skills but also helps to promote a positive and supportive learning environment. However, the statement also notes that 3% (1) of prospective teachers taught all students in the same way, which resulted in confusion and disengagement among the students. This approach is not effective as students have different learning styles and abilities, and need individualized support to achieve their full potential. Teachers need to observe their students and adapt their teaching methods to suit individual learning styles and abilities. Teachers who provide individualized support and attention can help struggling students improve their skills and build confidence in their abilities. This approach can also promote a positive and supportive learning environment, where all students feel valued and engaged in the learning process. Overall, the study highlights the importance of effective teaching strategies that are adapted to suit individual students. Teachers who are attentive and responsive to their students' needs can help to promote a positive learning environment and support student success.

In the fifth statement, the researchers observe the seating arrangement of the students while prospective teachers were teaching and conducting activities. 70% (21) of the prospective teachers use regular seating

arrangements for teaching Regular seating arrangements typically involve rows of desks facing the teacher. This type of seating arrangement is suitable for lectures and individual work. While 5% (4) of prospective teachers use U-shaped seating arrangements in the classroom. The U-shaped arrangement involves desks arranged in a U shape with the teacher standing or sitting in the center. This type of arrangement is suitable for group discussions and interactive learning activities. This seating arrangement was to present the model which was prepared by the prospective teacher about pollution.

The other 25% (3) of the prospective which were males used e round table shape setting arrangement in the classroom. Round table seating arrangement involves desks arranged in a circular or semi-circular shape. This type of arrangement is also suitable for group discussions and interactive learning activities. The teacher was teaching the class nursery. The teacher set between the students and engages all the students in the learning activity. The teachers make sure every student participates. Explain concepts like storytelling, and speak politely to the students. The last statement about classroom management is about the reinforcement techniques which are used by the prospective teacher. Prospective teachers use both positive and negative enforcement in the classroom. The male teachers give candies to the students who respond to the teachers, speak politely to the students, and encourage them with good words like well done, you are doing great and clap for students. On the other hand, 70% (21) of the prospective teachers use positive words like very good and excellent, sometimes teacher stand beside the student, recalls the rules and regulation to the students, took the view of the student about their behaviour, engage the students in activities, called the shy students to the whiteboard to write and encourage them. Prospective teachers build a communication bridge with students, listen to the problems of students, and resolve them. On the other hand, 30% (9) of prospective teachers used negative reinforcement. The teacher threatens the student to punish them physically, and the teacher gets the students out of the classroom and stood up the students in the classroom.

Overall, the researchers observed the classroom management practices of prospective teachers and found varying levels of effectiveness and appropriateness. While some teachers used positive reinforcement and engaged students effectively, others resorted to negative reinforcement and even bullying. Some displayed effective techniques such as positive reinforcement and engagement with students, while others struggled with managing improper behaviour and were inattentive in the classroom. The findings highlight the importance of proper training for prospective teachers in classroom management techniques to ensure a safe, positive, and effective learning environment for students.

The second component of Pedagogical Content Knowledge (PCK) is instructional planning and strategies with six statements. This component refers to the ability of teachers to plan and implement effective teaching strategies that cater to the needs and abilities of their students. The statement provided discusses the findings related to this component in a research study.

Table 2
Instructional Planning and Strategies

Statements	Male		Female	
	Yes	No	Yes	No
Prospective teacher modified the instruction according to the need to facilitate student learning	1	0	22	3
Prospective teacher ensures the active participation of students in classroom activities.	5	0	17	8
Prospective teacher encourages the students to ask questions.	5	0	22	3
Prospective teachers use different teaching methodologies for a better understanding of students.	5	0	22	3

prospective teacher chose a problem that was relevant to real-life events and let the kids solve it.	1	4	10	15
Prospective teacher encourages the students to contribute knowledge and their point of view.	5	0	18	7

According to the statement, the first finding related to instructional planning and strategies was that prospective teachers modified their instruction according to the needs of their students. Specifically, 88% (26) of prospective teachers in the study modified their teaching strategies to facilitate student learning.

This suggests that these teachers were aware of the importance of adapting their teaching approaches to meet the diverse learning needs of their students. Some of the strategies that these teachers used included slowing down the pace of the lesson, repeating concepts multiple times, and pronouncing difficult words for their students. These strategies can be effective in helping students understand complex concepts and develop mastery over the subject matter. However, the remaining 12% (6) of teachers in the study did not modify their instruction to meet the needs of their students. Instead, they focused on completing the lesson and relied on students who found difficulty in the lesson to ask their classmates for help. This approach may not be effective in ensuring that all students have an equal opportunity to learn and succeed in the classroom.

The second statement is about the importance of active student participation in classroom activities, and how it affects the teaching-learning process. It suggests that prospective teachers should take steps to ensure that students are actively engaged in the classroom, rather than just passively receiving information. The statement further explains that 75% (22) of the teachers are actively engaging their students in the lesson by asking questions, encouraging participation, and making the students active participants in the learning process. This approach helps to keep students engaged, motivate, and interested in the lesson. In addition, the statement also highlights that some teachers do not actively engage their students in the lessons instead, they simply control the students and complete the lesson. In such cases, students are not allowed to speak and may not feel confident enough to ask questions or participate in class discussions. In summary, the second statement emphasizes the importance of active student participation in the classroom and highlights the negative impact of passive teaching methods.

The third statement in the observational checklist indicates that the perspective teacher encourages students to ask questions. This means that the teacher is creating a learning environment where students feel comfortable asking questions and seeking clarification on any doubts or confusion they may have. According to the finding, the teacher is described as having 90% (27) male and female perspective teachers which implies that the teacher is open-minded and considers the diverse perspectives of all students. The teacher ensures that every student participates in classroom discussions, especially those who are shy or hesitant to speak up.

For instance, during a lesson on colours, the teacher encourages all students to observe their surroundings and identify colourful things. This activity not only helps students to develop their observation skills but also helps them to engage in the lesson actively. The teacher further motivates students by drawing a star on the hands of those who answer or ask questions. This positive reinforcement encourages students to participate actively and helps to build their confidence. In contrast, the rest of the teachers in this scenario are described as snubbing students and scolding them for speaking without permission. This kind of behaviour can create fear and anxiety among students, leading them to become disengaged and less motivated to learn. In summary, the perspective teacher in this scenario is creating a positive learning environment where students are encouraged to ask questions, participate actively, and feel valued. This approach is more effective in promoting learning and fostering a love of learning among students.

The fourth statement of instructional planning and strategies highlights the importance of using different teaching methodologies to enhance

students' understanding. The statement implies that prospective teachers are knowledgeable and skilled in using various teaching methods to ensure that their lessons are engaging, effective, and tailored to meet the needs of all students. The statement mentions several teaching methodologies, including the lecture method, inquiry-based learning, discussion method, and gamified learning. Each of these methods has its strengths and weaknesses, and it is up to the teacher to select the best method that aligns with the learning objectives, the subject matter, and the needs of the students. Moreover, the statement indicates that 90% (27) of teachers modified their methodology of teaching. This implies that teachers are flexible and willing to adapt their teaching methods to suit their students' diverse learning styles and abilities. This adaptability helps to create a more inclusive learning environment that caters to the needs of all students, including those with special needs.

However, it was only 10% (3) of teachers use the lecture method. The lecture method is a traditional teaching method where the teacher presents information to students through a lecture or presentation. While this method can be useful in certain situations, it can be less engaging and less effective in promoting active learning and critical thinking. In conclusion, the fourth statement emphasizes the importance of using different teaching methodologies to promote better student understanding. It highlights the importance of teacher adaptability and flexibility in selecting teaching methods that align with the learning objectives, subject matter, and students' needs. By using a variety of teaching methods, prospective teachers can create a more inclusive and engaging learning environment that supports student learning and success.

The fifth statement in the observation checklist highlights the importance of choosing real-life problems that are relevant to student's experiences and interests. It indicates that prospective teachers should choose a problem that is relevant to real-life events and let the students solve it. This approach is effective in engaging students, promoting critical thinking, and fostering a sense of ownership and responsibility among students.

The statement indicates that 40% (11) of prospective teachers relate their lessons to real-life events. This implies that these teachers are intentional in selecting problems that are connected to students' daily lives, experiences, and interests. For example, when teaching about pollution, the teacher presented a model and then asked the students to participate in a discussion and indicate the causes of pollution that they observe in their surroundings. By connecting the lesson to real-life activities, the teacher makes the lesson more engaging and relevant to students.

However, 60% (16)of the teachers in this scenario did not choose real-life problems. Instead, they simply presented their planned lessons to the students without connecting them to real-life events. This approach may result in a less engaging and less effective learning experience for students. In conclusion, the statement emphasizes the importance of choosing real-life problems that are relevant to student's experiences and interests. By connecting the lesson to real-life events, prospective teachers can make their lessons more engaging, meaningful, and effective in promoting critical thinking and problem-solving skills.

The last statement in the observation checklist highlights the importance of encouraging students to contribute their knowledge and point of view during class discussions. The statement indicates that 75% (23) of prospective teachers encourage students to participate in class discussions and appreciate them for their contributions. These teachers listen to their students carefully and give them opportunities to share their points of view. By doing so, these teachers create a more inclusive and engaging learning environment where students feel valued and respected. The teachers who encourage student participation often motivate students to share their ideas, ask questions, and contribute to the discussion. They may also provide positive feedback, such as clapping or praising the students, to show their appreciation for their contributions. This approach helps to build students' confidence and encourages them to become more actively engaged in the learning process. However, 25% (7) of teachers in this scenario did not encourage students to share their points of view. Instead, they taught the

students more traditionally without providing opportunities for discussion and student participation. This approach can lead to a less engaging and less effective learning experience for students. It can also discourage students from actively participating in the learning process and limit their opportunities to develop critical thinking and communication skills.

The third component of Pedagogical Content Knowledge (PCK) is content knowledge, which includes seven statements in the observational checklist.

Table 3

Content knowledge

Statements	Male		Female	
	Yes	No	Yes	No
Prospective teachers have a command of pedagogical knowledge.	5	0	22	3
prospective teacher is prepared with content knowledge and cleared her/his concept.	5	0	23	2
Prospective teacher is competent in her/his subject area.	5	0	22	3
Prospective teachers' content knowledge is up to date.	5	0	25	0
Prospective teachers understand the key principles of the subjects she/he teach.	5	0	22	3

The first statement in this component highlights the importance of prospective teachers having a command of pedagogical knowledge. The statement suggests that 85% (22) of male and female prospective teachers have a command of pedagogical knowledge. These teachers are capable of modifying their teaching methodologies and strategies to meet the needs of their students and the lessons they teach. By having a strong understanding of pedagogical knowledge, these teachers can create effective and engaging learning experiences for their students.

On the other hand, the statement indicates that 15% (3) of prospective teachers who were female lack pedagogical knowledge. This suggests that these teachers may not be as effective in modifying their teaching methodologies and strategies to meet the needs of their students and lessons. Without a strong command of pedagogical knowledge, these teachers may struggle to create engaging and effective learning experiences for their students. In conclusion, having a command of pedagogical knowledge is an important aspect of content knowledge in PCK. Prospective teachers who possess this knowledge can modify their teaching methodologies and strategies to create effective and engaging learning experiences for their students. While some teachers may lack pedagogical knowledge, developing this knowledge is essential for effective teaching and student learning outcomes.

The second statement in the content knowledge component of the observational checklist highlights the importance of prospective teachers being prepared with content knowledge and have a clear understanding of the subject matter they are teaching. According to the statement, all prospective teachers in the observed group demonstrated that they had a solid understanding of the content they were teaching. This suggests that they had taken the necessary steps to ensure that they were well-prepared before entering the classroom. When a teacher has a strong grasp of the content, they are better equipped to present the material to their students clearly and concisely.

The statement in the content knowledge component of the observational checklist is about the presentation of content. This statement indicates that 90% (23) of the prospective teachers were concerned about ensuring that their students understood the lesson they were teaching. These teachers used a variety of methods to help students understand the material, such as repeating concepts multiple times, using real-life examples, and asking questions to check for understanding. However, the statement also suggests that 10%(2) of the prospective teachers simply read the lesson without providing adequate explanation or context. This can make it difficult for students to understand the material and engage with the

lesson. For example, the observation of the prospective teacher teaching Urdu poems to class 6th shows that simply reading a poem without providing an explanation and context may not be effective in helping students understand and engage with the material.

The third statement is about the prospective teacher's competence in their subject area. This means that the teacher candidates have a strong understanding of the content they will be teaching to their students. To be competent in a subject area, prospective teachers must have a deep understanding of the concepts, theories, and principles that form the foundation of the subject. They must also have a comprehensive knowledge of the curriculum and standards for that subject area, as well as an understanding of how to teach that content effectively to their students. The prospective teachers were able to answer questions related to the subject area confidently, demonstrate an ability to apply the concepts in real-life situations and articulate complex ideas in a way that students can understand.90%(22)of prospective had proper knowledge of the subject area while 10%(3) of the female prospective teachers weren't competent in their subject area, and need more preparation before coming into the classroom.

The next statement of the observational checklist was prospective teachers' content knowledge is up to date. This means that the teacher candidates have not only acquired a deep understanding of their subject area, but they also keep themselves informed of the latest knowledge. When prospective teachers' content knowledge is up to date, they are better equipped to teach their subject matter effectively and inspire their students to become lifelong learners. Up-to-date content knowledge also enhances a teacher's credibility and professionalism, making them more effective in the classroom and helping to build positive relationships with students, parents, and colleagues. All the prospective teachers came with up-to-date knowledge.

The last statement of content knowledge is prospective teachers understand the key principles of the subjects she/he teach. It refers to prospective teachers should have a deep understanding of the key principles and concepts of the subject that they will be teaching. This means that they should have a thorough knowledge of the subject matter, including its key concepts, theories, and methodologies. A total of 90% (27) of prospective teachers understand the key principle of the subject she/ teaches, while 10% (3) of the prospective teachers had to pay attention to conceptual understanding of the subject matter.

The fourth component of PCK which is included in the observational checklist is lesson planning. It consists of eight statements.

Table 4

Lesson Planning

Statements	Male		Female	
	Yes	No	Yes	No
Prospective teacher plan lessons before going to class	5	0	19	6
Prospective teacher makes lesson plans by considering different learning styles	4	1	20	5
Prospective teacher checks the previous knowledge of the students	3	2	15	10
Prospective teachers organize activities into logical stages to fulfil the objectives of the lesson.	5	0	22	3
Prospective teachers monitor every student's work	4	1	23	2
Prospective teachers encourage students to think critically.	5	0	20	5
Prospective teachers monitor every student's work.	4	1	23	2
Prospective teachers encourage students to think critically.	5	0	20	5

The first statement is about prospective teachers planning the lesson before going to the class. The researchers checked the lesson plan of the prospective teachers. 85% (24) of the

prospective teachers planned their lessons before teaching the students. Objectives of the lesson, methodology of teaching the students, teaching aids, and method of assessment. This is a positive outcome as it shows that most teachers are taking the time to prepare and organize their lessons before entering the classroom. By planning their lessons, teachers can ensure that they cover the necessary material, engage their students in the learning process, and evaluate their students' understanding of the material effectively. While 25% (6) of the female prospective teacher didn't plan the lesson. Their lesson plans were incomplete.

The second statement refers to the importance of planning lessons while considering different learning styles. It suggests that 80% (24) of prospective teachers take into account the various ways in which students learn when preparing their lessons. This means that these teachers are aware that students have different preferences, abilities, and strengths when it comes to learning and is taking steps to cater to these differences in their teaching approach.

The statement further indicates that 20% (6) of prospective teachers do not consider the needs of their students when planning their lessons. This means that they might be using a one-size-fits-all approach to teaching, which can be challenging for students with different learning styles. The consequence of such an approach is that students may find it difficult to understand concepts, even those who can read properly. When teachers plan their lessons while considering different learning styles, they use a variety of instructional strategies to help their students learn. For example, some students might prefer visual aids like diagrams, charts, or pictures, while others might prefer to learn through hands-on activities or group work. Teachers who cater to these preferences are more likely to engage their students and help them learn more effectively. In summary, the statement emphasizes the importance of planning lessons while considering different learning styles. Teachers who do so are more likely to create an inclusive learning environment that caters to the diverse needs of their students. On the other hand, teachers who do not consider the needs of their students might struggle to engage their students and help them learn effectively

The third statement of lesson planning emphasizes the importance of checking students' previous knowledge before starting a new chapter or moving on to a new topic. It suggests that 60% (18) of prospective teachers are aware of this and check their student's prior knowledge before teaching new material. These teachers use different methods to assess their student's understanding of the previous topic. Some of them ask questions related to the previous topic, while others might ask for their students' opinions or perspectives on the topic. By checking previous knowledge, teachers can identify any gaps in their students' understanding and tailor their instruction accordingly. They can also build on their students' prior knowledge and link it to new concepts to help students understand the material better. This approach can improve students' comprehension, retention, and overall performance in the classroom.

However, the statement also indicates that 40% (12) of prospective teachers do not check their students' previous knowledge before teaching new material. This means that these teachers might assume that their students have a certain level of understanding or might overlook some essential concepts. As a result, their instruction might not be effective, and their students might struggle to understand the material.

In summary, the third statement highlights the importance of checking students' previous knowledge before teaching new material. Teachers who do so can tailor their instruction to meet their students' needs, build on their prior knowledge, and improve their comprehension and retention of new material. Conversely, teachers who do not check their students' previous knowledge might struggle to engage their students and help them learn effectively.

The fourth statement of lesson planning emphasizes the importance of planning activities according to the learning level of students. It suggests that 90% (27) of prospective teachers are aware of this and plan activities that cater to the needs of the lesson and the level of learning of their students. These teachers use a variety of instructional materials like models, flashcards, charts, and other manipulatives to conduct

activities that reinforce the concepts taught in the lesson. They also ensure that every student participates in these activities, which helps to create an engaging and interactive learning environment. However, the statement also indicates that 10% (3) of prospective teachers do not plan any activities in their classrooms. This means that these teachers might rely solely on lectures or demonstrations, which can be less engaging and interactive for students. As a result, students might not have enough opportunities to practice and apply what they have learned, which can hinder their learning and overall performance.

In summary, the fourth statement highlights the importance of planning activities according to the learning level of students. Teachers who do so can provide appropriate challenges, offer additional support, and create an engaging and interactive learning environment that promotes student learning and achievement. Conversely, teachers who do not plan any activities might struggle to engage their students and provide adequate opportunities for practice and application of concepts.

The fifth statement of the observational checklist is prospective teachers organize activities into the logical stage to fulfil the objective of the lesson. logical stages refer to a sequence of related activities that build on each other to create a cohesive and effective learning experience. This might involve beginning with an engaging introduction to capture students' attention and generate interest in the topic, followed by a series of activities that gradually increase in complexity and challenge. The activities should be designed to help students develop new skills, knowledge, and understanding, and should be tailored to the needs and abilities of the students. For example, if the objective of a lesson is for students to learn how to write a persuasive essay, the activities should be designed to help students develop the skills and knowledge necessary to achieve this goal, such as analysing persuasive writing techniques, brainstorming ideas, and drafting and revising their essays. 90%(27) of the prospective teachers organize the activities into logical stages to fulfil the objectives of the lesson.

Teaching aids refer to any materials or tools that are used by teachers to support their teaching and help students to learn. These may include things like flashcards, chart papers, models, whiteboards, videos, and other multimedia resources. When choosing teaching aids, teachers need to consider the specific needs of their students, the learning objectives of the lesson, and the overall goals of the curriculum.

The sixth statement of lesson planning emphasizes the importance of using appropriate teaching aids in the classroom. Teachers need to choose teaching aids that are relevant to the topic being taught, and that will help students to understand and retain the information more effectively. According to the statement,83% (25) of prospective teachers use teaching aids that are appropriate to the lesson. This is a positive sign, as it suggests that most teachers are aware of the importance of using teaching aids and are making an effort to choose the right ones. Some of the most common teaching aids used by these teachers include flash cards, chart papers, models, and whiteboards. However, the statement also notes that 17% (5) of prospective teachers did not use any teaching aid except the teaching book. This is a concern, as it suggests that some teachers may not be fully utilizing the resources available to them to support their students' learning. It may be worth exploring why these teachers chose not to use teaching aids, and whether they require additional training or support in this area.

The seventh statement of lesson planning highlights the importance of monitoring the work of every student in the classroom. This involves observing and assessing the progress of each student, providing guidance and feedback, and helping them with their class work as needed. According to the statement, 90% (27) of the prospective teachers monitor and guide every student, and assist with their class work. This is a positive finding, as it suggests that the majority of these teachers are aware of the importance of individual attention and are actively working to support their students' learning. However, the statement also notes that some prospective teachers (3) do not actively monitor and guide every student in their classroom. Instead, they simply teach the students and allow them to seek help from their classmates. This approach may not be effective

for all students, as some may require more individualized attention and support to fully understand and engage with the material. In addition to monitoring, teachers may also provide individualized support to students who require extra help with their classwork. This may involve working one-on-one with students, providing additional resources or materials, or offering alternative learning strategies to help students who may be struggling with the material.

The final statement of lesson planning emphasizes the importance of encouraging students to think critically. Critical thinking is the ability to analyse, evaluate, and make decisions based on evidence and reasoning. It is a valuable skill that can help students to become more engaged and active learners, as well as prepare them for success in academic and professional settings. According to the statement, 83% (25) of prospective teachers encourage their students to think critically. This is a positive finding, as it suggests that the majority of these teachers recognize the importance of critical thinking and are actively working to promote this skill among their students. Encouraging critical thinking in the classroom can take many forms. Teachers may ask open-ended questions, encourage students to challenge assumptions and provide opportunities for students to analyse and evaluate information to draw their conclusions. They may also encourage students to share their ideas and perspectives and to engage in respectful debate and discussion with their peers.

However, the statement also notes that 30% (5) of prospective teachers do not actively encourage their students to think critically. This is a concern, as it suggests that these teachers may not be fully aware of the importance of this skill or how to promote it effectively.

Discussion

Based on the findings presented it appears that the extent to which prospective teachers exhibit pedagogical content knowledge during their teaching practicum practices is variable, with some teachers exhibiting strong PCK in certain areas and others needing further training and support. These results are consistent with earlier studies in the area of teacher education, which also emphasized the significance of PCK inefficient instruction (Shulman, 2011). The finding that classroom management is a critical component of PCK is supported by previous research, which has emphasized the importance of effective classroom management for student learning and teacher efficacy (Akbari, 2014; Emmer & Stough, 2015). Classroom management is a critical component of PCK, and some prospective teachers may need further training and support. Most prospective teachers modify instruction to facilitate student learning, are willing to practice new instructional technology, encourage student questioning, use different teaching methodologies, and align their instructional strategies with their objectives.

Previous research has also recognized the significance of classroom management in PCK, with some studies proposing that teacher preparation programs should emphasize the significance of rule-making and reinforcement approaches in controlling and involving pupils (Evertson & Weinstein, 2012). The discovery that some prospective teachers lack confidence in classroom management is also consistent with other research that revealed teacher candidates frequently struggle with controlling student behaviour (Friedrichsen et al., 2016). A significant proportion of prospective teachers believe that they use their subject matter knowledge effectively in their teaching practices, but a small percentage does not. The majority of prospective teachers exhibit strong PCK in prioritizing lesson planning, checking students' previous knowledge, planning activities based on the student's learning level, using appropriate teaching aids, monitoring every student's work, providing proper time to every student, and encouraging critical thinking. However, there is still a small portion of teachers who do not exhibit this PCK.

The result that most prospective teachers are eager to use new instructional technology and alter instruction to better support student learning is also consistent with earlier research that has highlighted the significance of modifying education to meet the requirements of various learners (Darling-Hammond et al., 2017). The fact that only a tiny proportion of

teachers use reinforcement strategies or involve students in creating rules, however, emphasizes the need for teacher training programs to offer more assistance in these areas. The findings that most prospective teachers have strong PCK in prioritizing lesson planning, checking students' prior knowledge, planning activities based on the student's learning level, using appropriate teaching aids, monitoring every student's work, giving adequate time to every student, and promoting critical thinking are in line with earlier research that has identified these as crucial elements of effective teaching (Mishra & Koehler, 2012, Hattie, 2009; Stronge, 2018).

Conclusion

In conclusion, the study has provided insights into the pedagogical content knowledge (PCK) exhibited by prospective teachers during their teaching practicum practices. The findings revealed that the extent to which prospective teachers exhibit PCK varies and classroom management is a critical component of PCK. The majority of prospective teachers exhibit strong PCK in prioritizing lesson planning, checking students' previous knowledge, planning activities based on the student's learning level, and using appropriate teaching aids. However, there is still a need for teacher training programs to emphasize the importance of some practices, such as engaging students in rule-making and using reinforcement techniques to manage and engage them. The study found no significant differences in the PCK exhibited by male and female prospective teachers. Still, there may be slight differences in specific practices related to classroom management and student engagement. The findings also revealed that female prospective teachers were more likely to send students to the principal's office for misbehaviour and use a loud voice or scold students in the classroom to manage improper behaviour compared to male prospective teachers. Overall, the study provides valuable information for teacher training programs to help develop PCK among prospective teachers and promote effective teaching practices.

Recommendations

Provide further training and support for prospective teachers in the area of classroom management, as it is a critical component of PCK, and some teachers may lack confidence in this area.

Address the confidence gap among some prospective teachers regarding classroom management by providing them with additional support and training.

Encourage the positive trend towards developing PCK by supporting and encouraging prospective teachers who modify instruction to facilitate student learning, practice new instructional technology, encourage student questioning, use different teaching methodologies, and align their instructional strategies with their objectives.

Provide additional support and training for the small percentage of prospective teachers who lack confidence in their ability to use various teaching methods and strategies.

Encouraging all prospective teachers to continue developing their understanding of effective lesson planning, including consideration of different learning styles, previous knowledge of students, appropriate activities, and use of teaching aids.

Providing support and training to all prospective teachers in the area of classroom management, including techniques for engaging students in rule-making and the use of reinforcement techniques to manage and engage students.

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