A Study of Disposition of Pedagogical Knowledge and Skills at College Level Teachers

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Abstract

In education, the effectiveness of college-level teaching relies on teachers' pedagogical knowledge and skills. Pedagogical knowledge consists of a deep understanding of educational principles and theories, while pedagogical skills involve the practical application of this knowledge in the classroom environment. College teachers, as essential figures in molding the academic journey of students, play a significant role in promoting a conducive learning environment. This research paper was designed to know college teachers' pedagogical knowledge and skills. For data collection, a pedagogical skills diagnostic scale was used; the scale consisted of 24 items about pedagogical knowledge and skills teachers' perceptions of pedagogical knowledge. The scale consisted of 24 items with three factors: (a) Pedagogical Knowledge, (b) Pedagogical Skills, and (c) Teachers' Perception. The sample was selected using a simple random sampling technique. Krejcie and Morgan's (1970) table followed in choosing the minimum sample; this way, 148 respondents were selected as samples for research work from seven boys' government colleges of District Jhang. Collected data were analyzed using descriptive and inferential statistical techniques. The objectives of the study were (a) to identify the current level of pedagogical knowledge among college-level educators, (b) to identify the current level of pedagogical skills among college-level educators, (c) to identify the perceptions of college-level educators regarding the effectiveness of current Pedagogical knowledge and skills. It was concluded that college-level teachers'

current pedagogical knowledge and skills were very low. It was concluded that the perceptions of college-level educators regarding the effectiveness of current Pedagogical knowledge and skills were positive. It is recommended that Pedagogical knowledge and skill-based training should be conducted in colleges for teachers because approximately teachers lack pedagogical knowledge and skills.
Keywords: College-Level Teaching; Pedagogical knowledge; pedagogical skills; Teachers Training.

Introduction

In recent years, it has become increasingly important to improve the quality of the teaching staff in order to meet the necessity of improving student outcomes. Over the past several years, however, a number of OECD nations have recognized that it has become increasingly difficult to attract and keep qualified educators (See et al., 2020). Some nations are experiencing significant rates of attrition among new teachers, as well as a scarcity of quality instructors in high-demand subject areas and institutions that are disadvantaged. This is in addition to the fact that the teaching staff is getting older (Hussain et al., 2023). Additionally, there is a worry regarding the reduction of qualifying standards for the certification and licensing of new teachers, as well as the matter of recruiting individuals who are highly motivated and have high levels of achievement into teacher education programs (Amir et al., 2022).

It is important to note that problems of this nature have an effect on the quality of the teaching staff that is ultimately responsible for enhancing the outcomes for students (Hussain et al., 2022). An illustration of this would be the fact that the teacher workforce is getting older, which results in the retirement of more experienced instructors. High attrition rates among new teachers are costly for the system and may prompt education authorities to fill teacher shortages by lowering qualification requirements for the certification of new teachers or by assigning teachers to teach subjects or grades for which they were not trained. Both of these strategies are intended to address the issue of teacher shortages. Both of these strategies are costly for the system. Under these circumstances, there is a detrimental impact on the quality of the teaching personnel (Zaman et al., 2023).

Even after taking into consideration past student learning and the features of the family background, research has shown that the quality of the instructor is a significant influence in influencing the amount of progress that students make in their academic performance (Umar et al., 2023). Predictors of teacher quality have traditionally included elements such as the number of students in a class, certification, the type of qualification, the number of years of experience, and certified teachers (Graham & Flamini, 2023). The pedagogical expertise of instructors is yet another indication of teacher quality, but one that has received less research. The term "pedagogical knowledge" refers to the specific information that instructors possess in order to create learning and teaching environments for all of their pupils effectively and efficiently. As the key goals of this research, the pedagogical knowledge base of teachers and the knowledge dynamics within the teaching profession are the primary areas of concentration. The objective of this project is to conduct research on the implications that these knowledge dynamics have for the process of instruction and to develop recommendations for educational policy and practice that are supported by evidence.

On the basis of the manner in which teachers relate their pedagogical knowledge (that is, what they know about teaching) to their subject matter knowledge, there is a type of

knowledge that is unique to teachers and is founded on the fact that teachers are the only ones who possess it. Pedagogical content knowledge is the name given to this particular category of knowledge (what they know about what they teach). Pedagogical content knowledge is the integration or synthesis of the pedagogical information that teachers possess and the subject matter knowledge that they possess. This is what defines pedagogical content knowledge (Santos & Castro, 2021).

Pedagogical content knowledge, also known as PCK, is a construct that is widely acknowledged in the field of educational research. It is an essential notion that pertains to the ability of instructors to transmit their knowledge of a particular subject to their pupils (Jacob et al., 2020). Up to this point, a number of investigations on PCK have been carried out across a wide range of fields, particularly in the fields of science (for example, van Driel, 2021) and mathematics (e.g., Han et al., 2021). In contrast, research on the professional competence of language instructors is still lacking (Liu, 2013). Because language is not only the subject matter that is being taught but also the medium through which it is being taught, the professional content knowledge (PCK) of language instructors is relatively distinct from that of teachers who work in other fields. PCK, which is a crucial component in effective English language instruction (Wu & Yu, 2017), needs to receive greater attention since English is becoming an increasingly important language in worldwide communication.

It is possible that the policy requirement for the teaching and acquisition of 21st-century skills, such as problem-solving, cooperation, communication, and creativity, will necessitate a re-skilling of the current teacher workforce in addition to an upgrade of the knowledge base of the teaching profession. This is because the policy in question requires that students learn these skills. The knowledge that instructors should possess is knowledge that is relevant to the teaching of skills that are relevant to the 21st century (Tohani & Aulia, 2022).

The research that has been done on the topic reveals a number of qualities that are unique to instructors who are considered to be experts. Extensive knowledge of pedagogical content, improved problem-solving strategies, improved adaptation for diverse learners, improved decision-making, improved perception of classroom events, increased sensitivity to context, and increased respect for students are some of the characteristics that are included in this category (Tseng et al., 2022).

There are a number of studies that demonstrate the significance of the information that teachers possess. These studies emphasize the fact that in addition to assimilating academic knowledge, student instructors also need to assimilate the knowledge that is obtained from actual and practical encounters in the classroom (Hussain et al., 2023). Research also reveals that disparities in student accomplishment are connected to variances in the "opportunities to learn" that are included in the process of being prepared to become a teacher. With a propensity to have more possibilities to study subjects, pedagogical content, and general pedagogy, teachers from countries who score particularly well on the PISA and TIMSS examinations are more likely to take advantage of these opportunities (Blomeke, 2021).

Despite the fact that it is true that the knowledge of teachers is an essential component of professionalism, it is crucial to keep in mind that professional competence covers more than just academic knowledge. There are a variety of aspects that contribute to achieving mastery in teaching and learning. These components include abilities, attitudes, and variables that motivate. Cognitive abilities and affective-motivational qualities are the two key components

of teachers' professional competence, according to the model that was offered by Blomeke and Delaney (2012). These are the two primary components (see Figure 1).

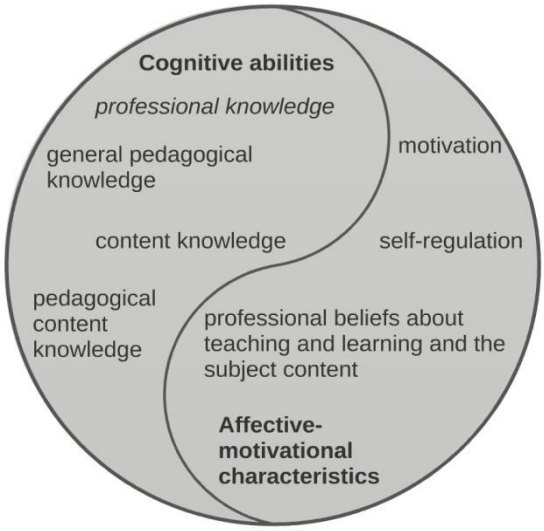

Figure 1: Professional competence of teachers

Conceptual Framework

The issue of the effect of teacher expertise on the learning outcomes of students has been the subject of a limited amount of scientific investigation. The research that has been carried out has focused on either pedagogical content knowledge or content knowledge as its primary focus. There is a growing body of evidence that suggests the following implications:

	Implications	**Study**
Increased content knowledge among educators	Improvements in the academic performance of teachers	Mathematics teachers
A deeper understanding of the educational content	Improvements in the academic performance of teachers	Mathematics teachers
The knowledge of pedagogical material has a greater influence on the accomplishment of students than the knowledge of the content itself.		
It would appear that the only factor that has an effect on the quality of education is pedagogical content understanding.		
An increased level of general pedagogical and psychological intelligence	According to the students' perceptions, a higher level of education (e.g., Higher cognitive activation, better instructional pacing, better student-teacher relationships)	A single study on mathematics educators was conducted.

Based on Hill, Rowan and Ball (2005), Baumert et al. (2010), and Voss, Kunter and Baumert (2011).

In spite of the fact that there has been a long history of discussion and argument over the relationship between teacher knowledge and effective teaching, there is a dearth of empirical research that tests this theory or even connects knowledge to student learning. This occurs in spite of the fact that there is a great deal of information that can be accessed. The research that has been conducted up until this point is beginning to show that teachers' general pedagogical knowledge is relevant to understanding quality teaching as understood by its impact on student learning outcomes. This is the conclusion that can be drawn from the studies that were examined, despite the fact that a significant amount of research is still required to fully support this relationship and to test a cross-cultural conceptualization of general pedagogical knowledge (Konig et al., 2020).

Problem Statement

For an effective teaching-learning process and quality education, the teacher's pedagogical knowledge and skill are essential in this context. The student's output and performance are highly related to teachers' teaching skills. Teachers' pedagogical knowledge and skills are impacted greatly, so there is a need to evaluate teachers' current state of pedagogical knowledge and skills and then give essential remedies to overcome the deficiencies. It is also important that teachers should also realize the truth that pedagogical knowledge and skill make teaching easy and increase students' performance. So, teachers should have a great perception towards pedagogical knowledge and skill.

Justification of the Study

Several studies were conducted on the importance of college teachers' pedagogical knowledge and skills, and researchers recommended the teacher's training as a remedy, but no one gave a strategic mechanism, a pedagogical plan, or a skill plan. The current study diagnosed the college teachers' perception of pedagogical knowledge and skill and gave a detailed pedagogical and skill strategic mechanism plan.

Objectives of the Study

The following were the basic objectives of the study;

1. To know the teacher's perception towards pedagogical knowledge and skills.
2. To know teachers' current state of pedagogical knowledge and skill.
3. To give a mechanism plan to follow for increments of pedagogical knowledge and skill.

Research Questions

The following were the research questions of the study;

1. Do college teachers realize and perceive the importance of pedagogical knowledge and skill?
2. What is the current state of teachers' pedagogical knowledge and skills?

Research Methodology

The study was a quantitative and cross-sectional survey; the aim of the study was to know the perception of college teachers about pedagogical knowledge and skill towards student

performance and quality education, then check the current level of teachers' pedagogical knowledge and skill and then give a mechanism plan to follow and increase pedagogical knowledge and skill. The researcher conducted this research in district Jhang and selected 7 boys in government colleges, then 148 college teachers with all categories of academic professional qualification and experience. Data were collected with a 5-point Likert scale consisting of 40 questions; the questions were about college teachers' perception of pedagogical knowledge and skill, their current state knowledge about pedagogy and skill, and some recommendations were also confirmed with this scale; after data collection data analyzed through different statistical tools like mean, standard deviation and one sample t-test. Research makes a pedagogical mechanism plan to follow it as a whole for recommendations.

Table 1 Sample of The Study

In the first phase, 7 boys government colleges were selected.		
Government Colleges	7 Colleges	Teachers
In the second phase, college teachers were selected using all personal categories.		
Colleges Teachers	148	
Total Sample		148

Through a simple random sampling technique, 148 college teachers were selected according to Krejcie and Morgan's (1970) social science survey research sampling technique.

Development of Tool

A five-point Likert scale consisting of 40 questions was developed; the questions asked for responses to different factors like teachers' pedagogical perception, teachers' pedagogical knowledge and skill rate, and some recommendation confirmations.

Reliability And Validity of Tool

Tools were developed before expert panels, and suggestions followed according to the context of college teachers' pedagogical perception towards its effectiveness and current level of teachers' knowledge and skill. The tool pilot was tested on 20 teachers, who were then excluded from the sample selection. The reliability of the tool was .91, which was excellent.

Findings of The Study

Table 2 Factorial Data Analysis

Factors	*f*	μ	σ	t	α
Teachers Perception	148	3.9279	.66841	71.491	.000
Pedagogical Knowledge	148	3.3266	.91388	44.283	.000
Pedagogical Skill	148	3.3176	.73600	54.837	.000
Recommendations Verification	148	4.2477	.71283	72.495	.000

Table 2 describes the data analysis of factors; it was found that the mean of factor teachers' perception towards pedagogical knowledge and skill was (3.9279), the standard deviation was (.66841), the t-test was (71.491), $p< 0.05$. It was explored that the mean of factor teachers' pedagogical knowledge was (3.3266), the standard deviation was (.91388), the t-

test was (44.283), p< 0.05. It was observed that the mean of factor teachers' pedagogical skill was (3.3176), the standard deviation was (.73600), t test was (54.837), p< 0.05. It was explored that the mean of factor some recommendations about pedagogical knowledge and skill was (4.2477), the standard deviation was (.71283), the t-test was (72.495), p< 0.05.

Conclusions

It was found that college teachers had a positive perception towards the effectiveness of pedagogical knowledge and skill because pedagogical knowledge and skill positively affect students' performance. It was explored that college teachers had high knowledge and fewer skills, but overall, it was low because the mean value did not exceed (4). It was observed that college teachers had a positive attitude towards pedagogical mechanism plans and framework suggestions through training.

Recommendations

The following recommendations were made according to the conclusions;

1. It is recommended that Pedagogical knowledge and skill-based training should be conducted in colleges for teachers because approximately teachers lack pedagogical knowledge and skills.

2. It is recommended that following pedagogical knowledge and skill mechanism plan should be followed by college teachers;

Pedagogical Knowledge and Skills Mechanism Plan

Pedagogical components	
Knowledge of classroom management	Utilizing the maximum amount of time available for instruction, managing classroom activities, instructing at a consistent pace, and ensuring that lessons are delivered with a clear direction;
Knowledge of teaching methods	Having command of a variety of instructional approaches, as well as being aware of when and how to implement each approach;
Knowledge of classroom assessment	Understanding of the many forms and goals of formative and summative assessments, as well as awareness of the ways in which different frames of reference (such as social, individual, and criterion-based) influence the motivation of students;
Structure	The organization of learning objectives and the process of teaching, as well as the planning and assessment of instruction
Adaptivity	Addressing the challenges of managing diverse learning groups in the classroom
Psychological components	
Knowledge of learning processes	The ability to support and nurture individual learning development by having knowledge about a variety of cognitive and motivational learning processes (such as

	learning, strategies, the impact of past knowledge, the effects and qualitative aspects of praise, etc.);
Knowledge of individual student characteristics	Having an understanding of the factors that contribute to the cognitive, motivational, and emotional differences among students

Based on Voss, Kunter and Baumert (2011) and König et al. (2011).

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