

RELATIONSHIP OF CONTENT KNOWLEDGE, PEDAGOGICAL SKILLS AND WITH PEDAGOGICAL DESIGN CAPACITY IN HIGHER EDUCATION OF NALANDA DISTRICT IN BIHAR

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Abstract

Pedagogical content knowledge is a type of knowledge held by teachers that not only explains how to effectively teach content (knowledge of pedagogy), but also unravels the teachers' understanding of the content.

The goal of this study was to see if there was a link between teachers' pedagogical content knowledge and pedagogical skills and their pedagogical design capacity. There were Selected 200 teachers' from the different secondary schools of Nalanda District. The purposive sampling technique was used in the study. Data was collected via a questionnaire, and data was analyzed Pearson's correlation. The findings demonstrated a modest and substantial link between teachers' pedagogical skills and content knowledge and pedagogical design capacity. It was found that there was a significant and moderate relationship between secondary school teachers' pedagogical skills and their content knowledge, as well as a positive relationship between secondary school teachers content knowledge, and pedagogical design and positive relationship between pedagogical skills and pedagogical design capacity.

Key Words: Pedagogical Skills, Content Knowledge, Pedagogical Design Capacity



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Introduction

The ability to design, initiate, leads, and develop education and teaching with a starting point in both general and subject-specific knowledge of student learning constitutes pedagogical skills. Pedagogical abilities also include the ability to link classroom instruction to relevant research. The ability of a teacher to instruct pupils and manage their classroom is referred to as pedagogical abilities. Teachers must master the material, comprehend their students, connect with parents, collaborate with coworkers, and establish

their own fair and consistent norms. Many teachers improve their pedagogical skills through time in order to better connect with students and teach information. Content knowledge refers to the body of knowledge and information that teachers teach and that students should grasp in a particular topic or content area, such as English language arts, mathematics, science, or social studies. Pedagogical design is a collaborative method to course development that defines teaching tactics, activities, and evaluations in order to achieve certain learning objectives and pedagogical theories in order to achieve desired educational outcomes. To improve teaching and learning, we employ design principles to promote student involvement and can include the development of practices, structures, digital learning objects, and multimedia resources.

The research problem

The primary goal of this study is to determine the relationship between teachers' subject matter knowledge, content knowledge, skills in assessment and evaluation, teaching discipline, and pedagogical design capacity and their performance in the real classroom.

Objectives of the Study

1. To find out significant relationship between Pedagogical skills Knowledge and content knowledge of secondary school teachers of Nalanda district in Bihar
2. To find out the significant relationship between content knowledge and pedagogical design capacity of secondary school teachers of Nalanda district in Bihar
3. To find out the significant relationship between pedagogical skills and pedagogical design capacity of secondary school teachers of Nalanda district in Bihar

Null Hypothesis

1. There is no significant relationship between Pedagogical skills and content knowledge of secondary school teachers of Nalanda district in Bihar
2. There is no significant relationship between content knowledge and pedagogical design capacity of secondary school teachers of Nalanda district in Bihar
3. There is no significant relationship between pedagogical skills and pedagogical design capacity of secondary school teachers of Nalanda district in Bihar

Significance of the Study

This research is important for teacher to recognize their challenges in the classroom, which are anchored in their topic knowledge. This study also had a significant impact on teachers' ability to use their pedagogical content knowledge in the classroom. It may also benefit teachers by allowing them to use the study's results, which included techniques to

handle classroom management and discipline in order to create a conducive learning environment. Because it was the first attempt to detect pedagogical skills, content knowledge and pedagogical design in a single study, the findings of this study would be invaluable in the present literature. The findings of the study might be used to improve or change teacher education programs by focusing on topic knowledge and teacher abilities in connection to pedagogical practices.

Method and Procedures of the Study

Research design

The research was descriptive in nature and a survey method was conducted for data collection.

The Population of the Study

The accessible population of this study consist secondary school teachers of Nalanda district

Sample of the Study

The sample was selected through purposive sampling technique and selected secondary school teachers (200) as research sample for taking their opinion regarding teachers' pedagogical skills, content knowledge, and pedagogical design.

Research Instrumentation

To collect data one self-developed questionnaire was used on five-point Likert scale (i.e. strongly disagree, disagree, neutral, agree, strongly agree) for taking opinion about teachers' content knowledge and pedagogical skills, and teachers' pedagogical design.

Data Collection

Data were collected through personal visits to sample secondary schools of Nalanda District teachers.

Data Analysis

Null hypothesis 01

To find out significant relationship between Pedagogical skills Knowledge and content knowledge of secondary school teachers of Nalanda district in Bihar

Table No. -01

Correlation between pedagogical skills and content knowledge

S.No.	Pedagogical skills		Content knowledge		XY	Critical value	Table value	Remark
Gender	X	X ²	Y	Y ²				
Gender	4588	108410	4583	108201	104584	-0.17	0.13	S

(NS= Not significant, S= Significant)

The intention was to look at the connection between teachers' content knowledge and pedagogical skills. Table 1 displays the outcomes of the data analysis utilizing product moment correlation. The correlation coefficient between teachers' content knowledge and pedagogical skills is -0.17, which is significant at the 0.05 level and shows that there was a strong association between the two. This is evident from table 1 above. Because of this, it is thought that there is a significant relationship between teachers' content knowledge and pedagogical skills

Null Hypothesis-02

To find out the significant relationship between content knowledge and pedagogical design capacity of secondary school teachers of Nalanda district in Bihar

Table No. -02

Relationship between content knowledge and pedagogical design capacity

S.No.	Content knowledge		Pedagogical design capacity		XY	Critical value	Table value	Remarks
Gender	X	X ²	Y	Y ²	104326	-0.18	0.13	S
	4583	10820	4580	10830				

(NS= Not significant, S= Significant)

The intention was to look at the connection between content knowledge and their pedagogical design capacity. Table 2 displays the outcomes of the data analysis utilizing product moment correlation. The correlation between content knowledge and pedagogical design capacity is -0.18, which is significant at the 0.05 level and can be seen in table 2 above. It shows that there is a strong association between content knowledge and pedagogical design capacity. The capacity for pedagogical design capacity is therefore thought to have a meaningful relationship with content knowledge.

Null Hypothesis-03

To find out the significant relationship between pedagogical skills and pedagogical design capacity of secondary school teachers of Nalanda district in Bihar

Table No. -03

Relationship between pedagogical skills and pedagogical design capacity

S.No.	Pedagogical skills		Pedagogical design capacity		XY	Critical value	Table value	Remarks
Gender	X	X ²	Y	Y ²	106324	0.38	0.13	S
	4588	10841	4580	10830				

(NS= Not significant, S= Significant)

The intention was to look at the connection between teachers' pedagogical skills and their pedagogical design capacity. Table 3 displays the outcomes of the data analysis utilizing product moment correlation. The correlation coefficient between pedagogical skills and pedagogical design capacity is 0.38, which is evident from table 3 above. This correlation is significant at the 0.05 level and shows that there is a strong relationship between pedagogical skills and pedagogical design capacity. As a result, it is thought that the pedagogical design capacity and pedagogical skills have a relevant link.

Findings

It was a substantial link between teacher ' Pedagogical content knowledge and Pedagogical design capacity, with a p value of Furthermore, the Pearson $r = 0.13$ estimation revealed a significant and positive relationship. Content knowledge and Pedagogical design capacity have a moderate correlation. There was a significant association between pedagogical skills and pedagogical design capacity according to the findings.

Discussion

Primary goal was to see how Teacher ' Pedagogical skills correlated with content knowledge. It was also hoped to see if there was a link between Teacher ' Content knowledge and Pedagogical skills of Nalanda District in Bihar. Sibuyi (2012) used a case study method to analyze the Pedagogical content knowledge of effective teachers and collected qualitative data through classroom observations, course plan analysis, and interviews in a study on pedagogical content knowledge. The study's findings, which indicated that teacher's possessed adequate content knowledge, appeared to be in line with the current study's findings. Teachers who had a solid comprehension of the subject, according to Mishra and Koehler (2006), would create a new manner to explain it. In terms of instructional outcomes, Westwood performed research (2004). Despite the fact that excellent teachers have a variety of practical teaching styles, he claims that they all apply teaching tactics to maximize student learning. Participate in learning tasks and set aside time for learning. They also urged pupils to take an active role in class. The lecture hall they also made sure that students knew what they needed to do. They also assign assignments and make decisions. To ensure high success rates, do activities at the appropriate level. According to Cockburn (2008), while content knowledge is important, teaching strategies had an equally vital influence in the efficacy of educators in pedagogy if any learning had to be put into practice.

Reference

- Abell, S. K. (2007). *Research on science teacher knowledge*. In S. K. Abell & N. G. Lederman (Eds.), *Handbook of research on science education* (pp.1105-1151). New Jersey: Lawrence Erlbaum- um Associates.
- Abuseji, F. A. (2007). *Student and teacher-related variables as determinants of secondary school students' academic achievement in chemistry*. *Journal Pendidikan*, 32, 3–18.
- Brown, M. (2009). *The teacher-tool relationship: Theorizing the design and use of curriculum materials*. In J. Chick, H.L., Pham, T. & Baker, M.K. (2006). *Probing teachers' pedagogical content knowledge: lessons from the case of the subtraction algorithm*. In P. Grootenboer, R. Zevenbergen, & M. Chinnappan (Eds). *Identities, Cultures and learning spaces (Proceedings of the 29th annual conference of the Mathematics Education Research Group of Australia)*, (pp. 139-146). Sydney: Merga.
- Chou, Y. C. (2008). *Exploring the reflection of teachers' beliefs about reading theories and strategies on their classroom practices*. *Feng Chia Journal of Humanities and Social Sciences*, 16, 183-216.
- Cockburn, A.D. (2008). *How can research be used to inform and improve mathematics teaching practice?* *Journal of Mathematics Teacher Education*, 11, 343-347.
- Davis, E. A., Beyer, C., Forbes, C. T., & Stevens, S. (2007). *Promoting pedagogical design capacity through teachers' narratives*. Paper presented at the National Association for Research in Science Teaching, New Orleans.
- De Jong, O., van Driel, J., & Verloop, N. (2005). *Preservice teachers' pedagogical content knowledge of using particle models in teaching chemistry*. *Journal of Research in Science Teaching*, 42, 947-964.
- De Jong, O., van Driel, J., & Verloop, N. (2005). *Preservice teachers' pedagogical content knowledge of using particle models in teaching chemistry*. *Journal of Research in Science Teaching*, 42, 947-964.
- Land, T. J. (2011). *Pedagogical design capacity for teaching elementary mathematics: A cross-case analysis of four teachers*. Retrieved from <http://lib.dr.iastate.edu/cgi/viewcontent.cgi?article=3062&context=etd>
- Loughran, J., Mulhall, P., & Berry, A. (2008). *Exploring pedagogical content knowledge in science teacher*
- Madeira, M. C. (2010). *The Development of Pedagogical Content Knowledge in Science Teachers: New Opportunities through Technology-Mediated Reflection and Peer-Exchange (Doctoral Dissertation)*. University of Toronto