

# Relationship Between Reflectiveness and Pedagogical Knowledge of B.Ed. Students in Dindigul District

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**Abstract**—This paper examined the relationship between reflectiveness and pedagogical knowledge of B.Ed. students in Dindigul district. The pedagogical ‘knowledge base’ of teachers includes all the required cognitive knowledge for creating effective teaching and learning environments. Research suggests that this knowledge can be studied. Identifying the content of this knowledge base, however, is a complex issue. Most studies use the distinction between declarative (‘knowing that’) and procedural knowledge (‘knowing how’) from cognitive psychology as a theoretical basis. This approach is relevant as it focuses on understanding how knowledge is related to behavior, or in other words, the quality of teaching performance. Reflectiveness is an adjective that describes a person who thinks carefully on the things he/she is about to do. It means the capability of quiet thought or contemplation. The thoughtfulness of a person is called as reflectiveness. To be very simple it refers to the trait of a person that is thinking carefully before acting. For prospective teachers it connects the academic knowledge to practical application and allows them to clearly explain the subject matter that they have learned. The research was conducted as a descriptive survey, utilizing simple random sampling with a sample size of 300 student teachers from Dindigul district. The investigator adopted the Pedagogical knowledge Tool developed from M. Kavin (2018) and Reflectiveness Tool adopted from Nickolas Jegan (2018). A personal data sheet was prepared by the investigator, and data interpretation was performed using statistical methods, including percentage analysis, mean, standard deviation, and ‘t’-test.

**Index Terms**—Pedagogical Knowledge, Reflectiveness and Student Teachers

## I. INTRODUCTION

Knowledge about educational aims and contexts, students, learning and evaluation, as well as knowledge about principles and strategies of

classroom management and organization. It’s the specialized knowledge of teachers in creating and facilitating effective teaching and learning environments for all students, independent of subject matter. Improving student outcomes depends on improving the quality of the teaching workforce and the quality of teaching. Pedagogical knowledge refers to the specialized knowledge of teachers for creating effective teaching and learning environments for all students. Pedagogy can be defined as the art of teaching. Pedagogy involves being able to convey knowledge and skills in ways that students can understand, remember and apply. Pedagogical skills can generally be divided into classroom management skills and content-related skills. Pedagogical knowledge (PK) is a term used for knowledge of how to teach that is applicable across a range of teaching areas. Reflection means careful or serious thought or consideration. It is the process of deriving meaning from experience; also called meaning-making. It engages people in conscious, intentional, critical thinking for the examining or evaluating of their experiences. It is most effective when it is done before, during and after all the activities (Agyei and Voogt, 2012).

## II. SIGNIFICANCE OF THE STUDY

It is extremely important to comprehend how reflectiveness and pedagogical knowledge relate to B.Ed. students in Dindigul District for a number of important reasons. First of all, it can help to increase teaching effectiveness by giving student instructors the opportunity to pinpoint areas in which they need to improve and modify their pedagogical strategies accordingly, which will ultimately result in more interesting and memorable lessons for their future

pupils. Second, investigating this relationship is critical to supporting educators' continuous professional growth. Gained knowledge can be used to improve the curriculum and instructional methodologies of B.Ed. programs, which will help student teachers build reflective practices and grow into lifelong learners dedicated to continual development. Furthermore, research on reflectiveness and instructional expertise can influence student learning results directly. Reflective educators are better able to modify their lesson plans to effectively address the varied requirements of their students, which may boost student engagement, comprehension, and academic success. Furthermore, taking into account the distinct sociocultural, economic, and educational setting of Dindigul District offers insightful information suited to the requirements and difficulties encountered by B.Ed. students and teachers in the area. All things considered, the results of this study could have a big impact on professional growth, teacher training, and the standard of instruction given to students in the Dindigul District.

### III. REVIEW OF RELATED STUDIES

Konig., Bremerich-Vos., Buchholtz, and Glutsch, (2020) made a study on General pedagogical knowledge, pedagogical adaptivity in written lesson plans, and instructional practice among pre-service teachers. Lesson planning of teachers as a research field has received little attention in terms of modelling and measuring relevant competences. As an innovative measurement approach, we developed a standardized method for analyzing written plans of demonstration lessons. Our focus is on the demand of pedagogical adaptivity, i.e., the ways in which lesson assignments fit with the cognitive level of learners so that they are guided into their zone of proximal development. This conceptualization is operationalized by using several indicators (content analysis criteria) to reconstruct and quantify situation-specific planning perception, interpretation, and decision-making. We use the data from 172 pre-service teachers in Germany with their first demonstration lesson during induction. Findings show their declarative general pedagogical knowledge of adaptivity (assessed via a standardized test) is a significant predictor for the situation-specific skill of pedagogical adaptivity in written lesson plans, and the

latter effects pre-service teachers' self-reported instructional practice of teaching that lesson. Findings are discussed towards their implication for the design of teacher education.

Erdogan (2020) conducted a study on the relationship between prospective middle school mathematics teachers' critical thinking skills and reflective thinking skills. The findings of the study were: a) reflective thinking skills of the prospective teachers were significantly different in terms of gender level; b) there was a positive, significant and moderate relationship between critical thinking skills and reflective thinking skills of the prospective teachers; and c) the prospective teachers' critical thinking skills were the significant predictors of their reflective thinking skills.

### IV. TITLE OF THE STUDY

The present study entitled as "Relationship Between Reflectiveness and Pedagogical Knowledge of B.Ed. Students in Dindigul District".

Operational Definitions

Pedagogical Knowledge

The investigator refers that pedagogical knowledge refers to the comprehensive understanding and application of teaching principles, strategies and techniques acquired through formal education, practical experiences and continuous professional development, enabling B.Ed. student teachers to effectively plan, deliver and assess instruction tailored to diverse learners' needs, fostering meaningful learning outcomes.

Reflectiveness

Reflectiveness involves the continuous process of examining one's beliefs, assumptions, strengths, weaknesses, successes, and challenges in teaching and learning contexts. It encompasses the ability to identify areas for improvement, make informed adjustments, and integrate new insights into future teaching endeavors, ultimately enhancing instructional effectiveness and fostering lifelong learning.

The investigator means that the capacity and propensity of student teachers to engage in critical self-awareness, thoughtful analysis and deliberate evaluation of their own teaching practices,

pedagogical decisions and professional growth experiences.

#### V. OBJECTIVES

1. To find out the level of Pedagogical knowledge of B.Ed., Students.
2. To find out the level of Reflectiveness among B.Ed., Students.
3. To find out the significant difference between male and female students in their Pedagogical knowledge of B.Ed., Students.
4. To find out the significant difference between rural and urban students in their Pedagogical knowledge of B.Ed., Students.
5. To find out the significant difference between male and female students in their Reflectiveness of B.Ed., Students.
6. To find out the significant difference between rural and urban students in their Reflectiveness of B.Ed., Students.

#### VI. NULL HYPOTHESES

- Ho1: There is no significant difference between male and female students in their Pedagogical knowledge of B.Ed., Students.
- Ho2: There is no significant difference between rural and urban students in their Pedagogical knowledge of B.Ed., Students.
- Ho3: There is no significant difference between male and female students in their Reflectiveness of B.Ed., Students.
- Ho4: There is no significant difference between rural and urban students in their Reflectiveness of B.Ed., Students.

#### VII. DELIMITATION OF THE STUDY

1. The study has been limited to only Dindigul district".
2. Sample for the study is limited to 300 B.Ed., student teachers only.

#### VIII. METHODOLOGY USED

In this study, the survey method was employed by the investigator to assess "Relationship between

Reflectiveness and Pedagogical Knowledge of B.Ed. Students in Dindigul district."

#### IX. POPULATION AND SAMPLE

The population under study comprises student teachers studying in B.Ed., colleges within the district of Dindigul in Tamil Nadu. The investigator employed a simple random sampling technique to select a sample from this population, consisting of 300 student teachers.

#### X. TOOLS USED

This study seeks to assess "Pedagogical Knowledge Scale and Reflectiveness Scale." For this purpose, the investigator adopted and validated the above said tools.

##### Pedagogical Knowledge Scale

##### Establishing Validity for Pedagogical Knowledge

For the present study, the investigator used the standardized tool Pedagogical knowledge Tool developed by Dr. M. Kavin (2018). The investigator has given the tool to some experts in psychology. They have expressed that the tool has face validity.

##### Establishing Reliability for Pedagogical Knowledge

Reliability is the degree of accuracy and consistency. The prepared tool was subjected to test-retest method. The tools were administered to a set of 30 B.Ed., Trainees at M.V.M. Chellamunthu Alagurathinam College of Education, Dindigul. Again, the same tool was administered to the same set of students after 15 days. The responses of the students were scored and correlated co-efficient was found to be 0.76. The reliability was established.

##### Scoring Procedure for Pedagogical Knowledge

The scoring procedure for the Pedagogical knowledge scale is simple. The items are scored in the direction to the scoring stencil. The questionnaire can be obtained by scoring response two-point scale the given responses namely, Correct answer-1marks, wrong answer-0 marks

##### Reflectiveness Scale

##### Establishing the Reliability

As per Sharma (2004), "Reliability pertains to the internal consistency of a test, i.e., the consistency of scores obtained when the test is administered once, or

how accurately the test measures at a particular time." In this study, the investigator utilized the test-retest method to establish the reliability of the tool.

Test-Retest Method

To assess the reliability of the Reflectiveness tool using the test-retest method, it was initially administered to 50 student teachers in the Dindigul district. Subsequently, the same set of student teachers was re-administering the tool after a 15-day interval. The two sets of scores were then correlated using the Pearson product-moment correlation, resulting in a substantial correlation coefficient of 0.81. Consequently, the tool is deemed to exhibit high reliability. Additionally, as the 'γ' value for each variable exceeds 0.80, it further confirms the high reliability of the tool.

Establishing Validity for Reflectiveness

For the present study, the investigator used the standardized tool Reflectiveness Tool developed by Dr S. Shanthi (2018). The investigator has given the tool to five experts in psychology. They have expressed that the tool has face validity.

Scoring Procedure

The scoring procedure for the Reflectiveness scale is simple. The scoring was done with the key prepared by the investigator. The Reflectiveness Scale is a five-point scale such as agree, agree undecided, disagree and strongly disagree. The respondents were asked to respond to the extent of agreement or disagreement of the context. The scoring key for RFS is given in the table 3.1.

Table 1.1  
Scoring Key for the Reflectiveness Scale

Sl. No.	Response	Score Value
1	Strongly Agree	5
2	Agree	4
3	Undecided	3
4	Disagree	2
5	Strongly Disagree	1

XI. STATISTICS TECHNIQUES USED

For this study, the following statistical techniques were utilized: mean, standard deviation (SD), and 't'-test.

XII. ANALYSIS OF DATA

Table 1.2

To find out the level of Pedagogical Knowledge of B.Ed., Students.

Variable	Pedagogical Knowledge					
	Low		Moderate		High	
	N	%	N	%	N	%
Pedagogical Knowledge	42	14.0	222	74.0	36	12.0

2. To find out the level of Reflectiveness among B.Ed., Students.

Table 1.3

Level of Reflectiveness among B.Ed., Students

Variable	Pedagogical Knowledge					
	Low		Moderate		High	
	N	%	N	%	N	%
Reflectiveness	76	25.33	176	58.66	48	16.0

3. To find out the significant difference between male and female B.Ed., Students in their Pedagogical knowledge.

Table 1.4  
Difference between Male and Female Students in them  
Pedagogical Knowledge of B.Ed., Students

Background variables	Categories	N	Mean	Std. Deviation	't' Value	remarks
Gender	Male	150	75.4933	9.22918	0.351	NS
	Female	150	73.1067	8.84521		

(At 5% level of significance the table value of 't' is (1.96)

4. To find out the significant difference between male and female B.Ed., Students in their Reflectiveness.

Table 1.5  
Difference between Male and Female Students in them  
Reflectiveness among B.Ed., Students

Background variables	Categories	N	Mean	Std. Deviation	't' Value	remarks
Gender	Male	150	56.4333	9.17278	2.170	S
	Female	150	54.2533	8.14550		

(At 5% level of significance the table value of 't' is (1.96)

5. To find out the significant difference between rural and urban B.Ed., Students in their Reflectiveness.

1.6 Difference between Rural and Urban B.Ed., Students in their Reflectiveness

Background variable	Categories	N	Mean	Std. Deviation	't' Value	Remarks
Locality of college	Rural	240	74.9583	9.93779	1.243	NS
	Urban	60	76.6667	7.59274		

(At 5% level of significance the table value of 't' is(1.96)

6. To find out the significant difference between rural and urban B.Ed., Students in their Reflectiveness.

1.7 Difference between Rural and Urban B.Ed., Students in their Reflectiveness

Background variable	Categories	N	Mean	Std. Deviation	't' Value	Remarks
Locality of college	Rural	240	55.8875	9.34910	1.733	NS
	Urban	60	58.1667	8.09094		

(At 5% level of significance the table value of 't' is (1.96)

### XIII. RESULTS AND DISCUSSION

- Table 1 inferred that 14.0% of them have low, 74.0% of them have moderate and 12.0% of them have high level of Pedagogical knowledge of B.Ed., Students.
- The table 2 reveals that 25.33% of them have low, 58.66% of them have moderate and 16.0% of

them have high level of Reflectiveness of B.Ed., Students.

- The table 3 reveals that the table value lesser than the calculated 't' value at 5% level of significant. Hence, the null hypothesis is accepted. It is concluded that there is no significant difference between male and female students in their Pedagogical knowledge of B.Ed., Students.

- The table 4 reveals that the table value greater than the calculated the 't' value at 5% level of significant. Hence, the null hypothesis is rejected. It is concluded that there is significant difference between male and female students in their Reflectiveness among B.Ed., Students. While comparing their mean scores the male B.Ed., students (M=56.4333) and female B.Ed., students (M=54.2533). The male students are better in their Reflectiveness than their counterparts. This may be due to the fact that Boys may be exposed to various activities such as games, sports, swimming, etc. They spent a lot of time in entertainment purpose, such as plans of outside. Therefore they may have high motivation. This may be due to the fact that male students are very eager to know about Reflectiveness and they are getting opportunity to utilize this reflective process properly. This finding is supported by Erdogan (2020) where there was a significant difference between male and female students in their Reflectiveness. It was noticed that female were better in their counterparts.
- The table 5 reveals that the calculated the 't' value at 5% level of significant. Hence, the null hypothesis is accepted. It is concluded that there is no significant difference between rural and urban students in their Pedagogical knowledge of B.Ed., Students.
- The table 6 reveals that the calculated the 't' value at 5% level of significant. Hence, the null hypothesis is accepted. It is concluded that there is no significant difference between rural and urban students in their reflectiveness among B.Ed., students.
- Encourage B.Ed. students to keep reflective journals where they can record their thoughts, observations, and reflections on their teaching experiences, lesson plans, classroom management strategies, and interactions with students. Regularly reviewing and discussing these journals can deepen their reflective skills.
- Provide structured reflection prompts or questions to guide B.Ed. students in their reflective practice. These prompts can focus on different aspects of teaching, such as lesson planning, student engagement, assessment strategies, classroom environment, and personal teaching philosophy.
- Arrange opportunities for B.Ed. students to observe their peers' teaching sessions and provide constructive feedback. Encourage them to reflect on what they observed, identifying effective teaching practices and areas for improvement.
- Assign action research projects where B.Ed. students can investigate specific teaching and learning issues within their own classrooms or educational contexts. Through the research process, they can engage in reflective inquiry, critically analyze data, and make evidence-based decisions to improve their teaching practices.
- Provide B.Ed. students with opportunities for hands-on teaching experiences in diverse educational settings, including schools, community centers, and informal learning environments. Encourage them to apply theoretical concepts in real-world teaching scenarios and reflect on their experiences.
- Assign experienced educators as mentors to B.Ed. students, providing guidance, feedback, and support throughout their teaching practicum or internship. Encourage regular meetings between mentors and students to discuss teaching experiences, challenges, and strategies for improvement.

#### XIV. RECOMMENDATIONS

The result shows that the male student teachers are better in their counterparts. The female student teachers need to be achieved through a combination of educational, experiential and character-building approaches. Here are some strategies to consider:

- As educators, it's important to model reflective practices ourselves. Demonstrating how to reflect on teaching experiences, challenges, and successes sets an example for B.Ed. students to follow.

#### Implications for Student teachers

Developing pedagogical knowledge and reflectiveness among student teachers carries several significant implications for their professional growth and effectiveness in the classroom. Firstly, by acquiring a deep understanding of various pedagogical approaches, instructional strategies, and assessment techniques, student teachers are better equipped to design and deliver effective lessons that cater to the

diverse needs of their students. This pedagogical knowledge serves as the foundation upon which they can build their teaching practice.

Furthermore, cultivating reflectiveness enables student teachers to critically evaluate their teaching experiences, identify areas for improvement, and make informed decisions to enhance their practice. Through regular reflection, they can refine their instructional methods, address challenges, and adapt their approach to better meet the evolving needs of their students. This reflective mindset fosters a continuous cycle of growth and improvement throughout their teaching careers. Moreover, the development of pedagogical knowledge and reflectiveness empowers student teachers to take on leadership roles within the education field. Armed with a solid understanding of effective teaching practices and the ability to critically analyze their own practice, they are well-positioned to mentor and support their peers, contribute to curriculum development initiatives, and advocate for positive change in educational policies and practices.

#### XV. CONCLUSION

Developing pedagogical knowledge and reflectiveness among student teachers is essential for their professional growth, effectiveness in the classroom, and potential for leadership within the education field. By investing in these areas, teacher education programs can prepare student teachers to become skilled, reflective practitioners who are committed to lifelong learning and dedicated to fostering the academic success and holistic development of their students.

#### REFERENCES

- [1] Konig, J.A., Bremerich-Vos, A., Buchholtz, C., & Glutsch, N. (2020). General pedagogical knowledge, pedagogical adaptivity in written lesson plans, and instructional practice among pre-service teachers. *Journal of Curriculum Studies*, 52, 800 - 822.
- [2] Erdogan, F. (2013). The Relationship between Prospective Middle School Mathematics Teachers' Critical Thinking Skills and Reflective Thinking Skills. *Participatory Educational Research (PER)*, 7(1), 220-241.
- [3] Aggarwal. Y. P. (2000). *Statistical Method*. Sterling Publishers private limited. New Delhi.
- [4] Agyei, D. D., & Voogt, J. (2012). Developing technological pedagogical content knowledge in pre-service mathematics teachers through collaborative design. *Australasian Journal of Educational Technology*, 28(4), 547-564.
- [5] Antony, B. & Annaraja (2007). Awareness of Information and communication technology and pedagogical knowledge of secondary teacher education students. M.Phil., dissertation, submitted to St. Xavier's college of Education (Autonomous) Palayamkottai, Tamil Nadu.