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Study Of The Perception Of D.El.Ed. Trainees, School Teachers And Teacher Educators On Inquiry Based Teaching And Learning Approach In Doe Schools (DBSE) Of District-East, Delhi

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Abstract
This study tries to understand the impact of inquiry-based teaching and learning (IBL) as implemented in Delhi Board of School Education (DBSE) schools of District-East, Delhi. The research focused on three key stakeholders—D.El.Ed. trainees, in-service school teachers, and teacher educators—who play central roles in executing and observing IBL in classrooms. Using an exploratory sequential mixed-method design, qualitative data were collected through focus group discussions and semi-structured interviews, followed by quantitative data collection using perception scales. The total sample comprised 87 participants: 55 D.El.Ed. trainees, 24 school teachers, and 8 teacher educators.
Findings reveal that D.El.Ed. trainees held a ***neutral perception*** *(aggregate mean = 3.33), reflecting challenges with insufficient infrastructure, delayed distribution of study materials, language barriers, and lack of clarity in assessment. However, they strongly agreed on the need for demonstration classes, extended training, and simulated teaching before entering their School Experience Programme (SEP). Teacher educators expressed a* ***fairly positive perception*** *(aggregate mean = 3.94), strongly agreeing that better coordination between DIET and DoE was required for SEP planning, and emphasizing the need for transdisciplinary lesson planning. School teachers also held a* ***fairly positive perception*** *(aggregate mean = 3.90), strongly agreeing that IBL enhances experimental process skills, encourages critical thinking, and improves classroom engagement, though they cited challenges of heavy workload, large class sizes, and inadequate resources.*
The study concludes that while teachers and educators recognize the pedagogical value of IBL, its practical implementation is hindered by infrastructural, linguistic, and planning gaps. Suggestions include the development of bilingual resources, strengthening of infrastructure, alignment of pedagogy and assessment, and extended pre-service and in-service training. This research provides practical insights into bridging the gap between NEP 2020's vision for inquiry-based learning and its classroom-level execution in DBSE schools.

INTRODUCTION

Over the last few decades, Inquiry-based learning (IBL) due to its child-centric nature, effectiveness and pedagogical methods is gaining popularity. In India, inquiry based learning and pedagogical approach were emphasised in the recently implemented New Education Policy (NEP) 2020, its document proposed that education should be inquiry-driven and discovery-oriented. Inquiry based learning is an approach which encourages and gives multiple opportunities of problem-solving and actively involved students participating in the learning process. It places the learner at centre, which makes it an effective and meaningful approach to learning. However, research data shows successful implementation of this approach by teachers in the classroom presents several significant challenges (Quigley et al., 2011). This study attempts to explore these challenges confronted by Pre-Service Teachers, In-service Teachers and complications as well faced by Teacher Educators in context of execution of IBL approach in schools of DoE (DBSE) of District-East, Delhi.

STATEMENT OF PROBLEM

This research project addresses the "Perception of D.El.Ed. Trainees, School Teachers and Teacher Educators on Inquiry Based Teaching and Learning Approach in DoE Schools (DBSE) of District-East, Delhi"

RESEARCH QUESTIONS

The aim of the following study is to analyse the pedagogical material and nature of DBSE's Pedagogic Companion for school teachers and gain insight into the challenges teachers face in the execution of IBL in their classrooms. It is also designed at studying Pre and In-service Teachers',

Teacher Educators reflections, prospects, and strategies on transaction of inquiry based teaching and learning approach during classroom teaching and observation of D.El.Ed. trainees during school experience programme (SEP). Hence, the following research questions were designed to addressed in the present research study:

1. What type of content and presentation is included in DBSE's Pedagogic Companion for School Teachers?
2. What were the challenges faced by the;

a) D.El.Ed. trainees during SEP in the transaction of unit plan in school of DBSE?
b) School teachers during the transaction of the unit plan in the school of DBSE?
c) Teacher Educators during the observation of their D.El.Ed. trainees in SEP?

3. What type of strategies were used to deal with the challenges faced by;

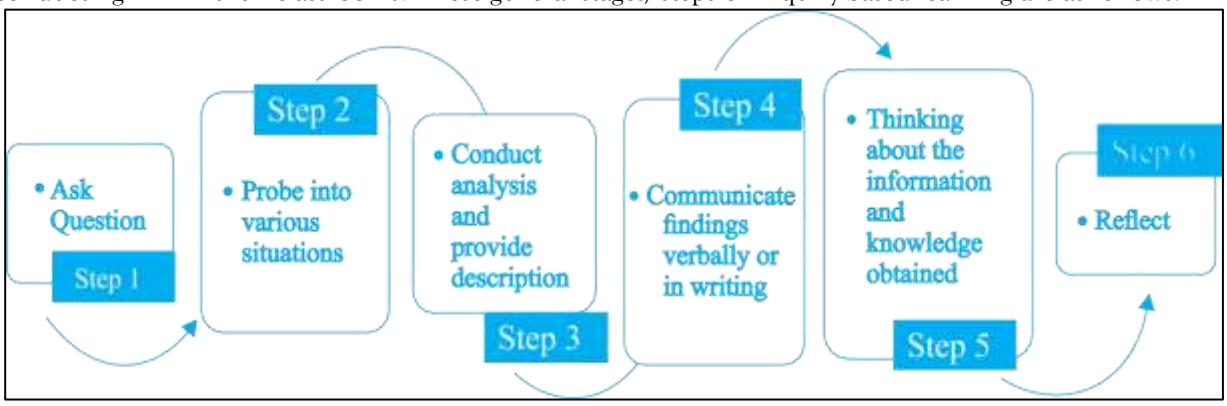
a) D.El.Ed. trainees in transacting the Unit plan on inquiry-based teaching and learning approach during SEP?
b) School teachers during the transaction of Unit plan on inquiry-based teaching and learning approach.
c) Teacher Educators during the observation of their D.El.Ed. trainees in the transaction of Unit plan on inquiry-based teaching and learning approach during SEP?

CONTEXT BACKGROUND OF THE STUDY

Inquiry based learning is a broad pedagogical approach which has been globally appreciated and supported by educators and education systems over the past decade. Hence, it has become a 21st century learning trend.

"Inquiry-based learning is an educational strategy in which students follow methods and practices similar to those of professional scientists in order to construct knowledge." As defined, this pedagogical method encourages student participation and activeness in the learning process, as according to this method argues, when children participate in the learning process, they are more likely to construct and retain the information they receive and integrate it with other subjects. While the teacher's role may guide the inquiry and facilitate the learning process. Therefore, Inquiry-based learning (IBL) is a student-centered instructional approach. Alfieri et al. (2011) refer to the benefits of IBL in the classroom by explaining that, "allowing students to interact with materials, models, manipulate variables, explore phenomena, and attempt to apply principles affords them with opportunities to notice patterns, discover their underlying casualties, and learn in ways that are seemingly more robust" (p. 3). Hence, IBL engages students in the learning process and maximises learning.

There are many models that we can find on inquiry-based learning for example; NSW HSIE K-6 (1998), Hoepper and McDonald (2004), Interactive Inquiry- Kershaw (2007), 5E Model . However, a careful review of these models reveals that they all share some basic similarities and steps that are followed in the process of inquiry-based learning. Inquiry based learning is conducted step by step. These processes assist professionals in conducting IBL in their classrooms. These general stages/steps of Inquiry-based learning are as follows.



SIGNIFICANCE OF THE STUDY

The role of a teacher is the most important in the learning process as they impart invaluable knowledge and wisdom to the children. The responsibility of teachers is vital in helping and guiding students to achieve their goals and transform the nation. The chances of success of policies and reforms in the nation are possible only because of the people facilitating it at the grass-root level. Hence, teachers play an essential role in implementing it properly at the grassroot level and creating the required impact. A policy can be successful only when it is

implemented properly at the ground level. In the context of education, teachers give real shape to the policies at ground level. For the same, teacher education programmes and school experience programmes (SEP) play crucial roles.

The School Experience Program (SEP) is an indispensable and important component in a D.El.Ed. pre-service teacher training programme. It offers training, development of teaching skills and experience to day-to-day school life before actually becoming a student-teacher entering the teaching profession. This year 10 sarvodya school of DoE District-East, Delhi (DBSE) have been selected for SEP of D.El.Ed. trainees for the studies. The approach used by DBSE board is quite distinctive from the current CBSE board. This research study aims to finding out in these schools how teachers and D.El.Ed. trainees perceive IBL approach and what challenges they faced in classroom while implementing IBL approach in classroom.

In DBSE schools implementation of IBL (Inquiry based teaching and learning) approach is used through pedagogic companions (unit plan, rubrics, formative and summative assessment etc.) and it should be used by teachers. These Unit plans are based on IBL. In this context, this present research study is designed to investigate teachers' experience, opinions and identifying hindering factors and challenges confronted by D.El.Ed. trainees and school teachers while implementing inquiry-based learning and teaching approaches in DBSE board schools, analyse their perspectives on DBSE curriculum and assessment framework. This study also focuses on views of teacher-educators during the observation of their D.El.Ed. trainees in transaction of Unit plan on inquiry- based teaching and learning approach during SEP.

Teacher Educators played the role of mentor for D.El.Ed. trainees during their SEP. During these training sessions s/he not only evaluates them as a teacher but also supports and nurtures them. Mentor teachers work closely with D.El.Ed. trainees in their classroom experience, observe them, provide them with critical feedback and encourage their growth as teachers, recognizing and supporting them and praises. They help trainees on their challenging days, analyse and present ideas. Teacher-educators also gain insight from this process and become aware and succinct about the reality of school life.

Analysing all these elements helps in providing a comprehensive understanding of the effectiveness of the IBL and will help in identifying the challenges in its operation.

REVIEW OF RELATED LITERATURE

There are insufficient research works available on this emerging topic of concern in educational context. Although, limited relevant research work gives us a better understanding or establishes the research gaps and concerns impact and effect teachers while implementing IBL pedagogical methods in their classrooms. Diverse research efforts reflect that teachers often fail or find it difficult to implement inquiry-based learning in their classrooms effectively (Crawford 1999).

Inquiry based learning is based on the assumption that humans have a distinctive urge to discover their own knowledge. Hence, this method of teaching and learning offers the opportunity for learners to construct their own knowledge on the basis of curiosity and exploration. This method helps students to relate new information to existing learning and develop thinking and research skills by providing questions and seeking answers based on inquisitiveness (Pedaste et al., 2015).

In implementing Inquiry-based learning in the classroom role of teachers is quite essential, various research noted that, in inquiry-based learning teachers' responsibility only as a facilitator and mediator, which allow students to learn and use the skills of their process to develop knowledge. Learners' zest to observe, presume, and conclude through group tasks and activities. Hence, conclusive research evidence indicating that inquiry-based learning methods that execute authentic pedagogy and assessment, reliable intellectual engagement, and interactive instruction dramatically improve educational achievement (Marshall & Horton,2009).

RESEARCH METHODOLOGY

Methodology:

In this study, a mixed method approach is employed to study the problem at hand. In this method, both quantitative and qualitative data are collected and analysed leading to final results. This method utilises the advantages of both qualitative and quantitative approaches.

Research Design:

In this study, Exploratory Sequential Mixed Method design is employed. In this research design, qualitative data is first collected and analysed, followed by quantitative data collection and analysis.

Sample size	Qualitative phase	Quantitative phase	
		(Proposed)	(Final)
Teacher educators	5	10	8
School teachers	7	50	24
D.El.Ed. trainees	10	50	55

Sample:
The final sample size consisted of 8 teacher educators, 24 school teachers and 55 D.El.Ed. trainees. Only those teacher educators were selected as samples who acted as supervisors in DBSE affiliated schools during SEP. The sample size for school teachers remained relatively smaller than the proposed sample size due to poor participation despite several requests and reminders. Since the data was collected online through Google forms, it was closed as the data from the required number of participants was collected.

Tools and techniques:
Since mixed method research studies employ both quantitative and qualitative tools, therefore, both quantitative and qualitative tools and techniques were used in the study.

Qualitative tools and techniques:
For conducting research in the qualitative phase of the study, FGD and interviews were conducted. Since the demographic population in government schools is unique from those in previous research studies, a qualitative approach was necessary to study the problems, challenges and strategies faced during teaching learning by Inquiry based method.
For this, FGDs were conducted with teacher educators at DIET Karkardooma, Delhi of District-East, who acted as supervisors during SEP, conducted in schools implementing DBSE curriculum. Similarly FGDs were conducted with D.El. Ed. trainees who completed SEP in schools implementing DBSE curriculum. Telephonic interviews (semi structured) were conducted with school teachers. The duration of each interview was between 30-45 min.
Open ended questions were asked regarding the problems, challenges and strategies faced during teaching learning by Inquiry based method.
The transcripts were then analysed through open coding. Themes were identified and generated. Based on these themes the Quantitative tool (Perception Scale) was developed.

Quantitative tools:
Themes were identified based on analysis of qualitative data. Based on the themes, three Perception Scales containing Likert items were constructed for Teacher Educators, School Teachers and D.El.Ed. trainees.

DATA ANALYSIS AND ITS INTERPRETATION

Qualitative data and its analysis
As stated in the previous chapter, qualitative data was collected through FGD and telephonic interviews. The analysis of the transcripts was done using open coding. The codes were then clubbed and analysed for emerging themes. The following themes are discussed and described in the following sections.

Findings from FGD of D.El.Ed. Trainees:

(i) Problems faced by D.El.Ed. trainees

D.El.Ed. trainees expressed the challenges faced by them during SEP and also shared the strategies that they adopted to overcome the same.

High student teacher ratio- Most trainees found a large class strength as a hindrance in teaching through Inquiry based learning, conducting activities etc.

Lack of adequate digital and physical infrastructure- D.El.Ed. trainees expressed lack of digital infrastructure like SMART boards, rooms with projectors etc. to play videos and conduct activities. Some trainees also shared that the access to the playground was denied due to pre board exams. Materials for conducting

experiments/activities were not accessible, answers to worksheets were also not provided.

Unavailability of study materials(unit plans, pedagogical and student companions) on time- D.El.Ed. trainees shared that they received the materials quite late. Some trainees also shared that the school teachers asked them to follow NCERT curriculum due to unavailability of resources.

Language barriers- According to D.El.Ed. trainees the language of the texts in Hindi, English were not age appropriate and a little difficult. The videos were available mostly in English which was difficult for students to understand. Even the ones available in hindi were not age appropriate or used in daily life.

Activities- Most D.El.Ed. trainees expressed that there were many activities to be conducted given the time. Some also shared that the school teachers refused the use of TLM and asked to focus on activities. There was also a pressure to complete the syllabus from school teachers. One trainee observed that there was no sequence in the content or the activities so that students can actively participate in it. She further added,there should be more scientific knowledge than moral values.

Assessments- D.El.Ed. trainees expressed that there were no clear guidelines regarding assessment. Some trainees stressed that more emphasis was on summative assessments. They considered formative assessments to be equally important.

Strategies- Some of the strategies suggested by them included using daily use objects to explain concepts due to in accessibility of equipments for experiments, conducting demo activity than showing videos, relating concept with daily life, conducting activities in short time, taking extra classes, teaching in bilingual medium,teaching grammar topics separately(as wasn't a part of curriculum), integrating subjects with HPE to increase mobility of students, provided worksheets and video links that are easily accessible.

Findings from FGD of Teacher Educators:

(i) Problems faced by D.El.Ed. Trainees

The teacher educators observed D.El.Ed. trainees during SEP. Each teacher educator also acted as a supervisor for a group of 4-6 D.El.Ed. trainees. Therefore trainees also shared the problems and challenges with the teacher educators.

Some of the problems faced by D.El.Ed. trainees according to teacher educators included a lack of planning from DIET regarding SEP in DBSE affiliated schools. There was also a lack of study material like books, student and pedagogical companions etc. and the curriculum was not available within the time, so there was difficulty in planning for lesson plans. Since the DBSE curriculum follows a theme based approach, trainees faced difficulty in bifurcating the syllabus. Trainees also found that the transdisciplinary approach was different and difficult from what they learnt in pedagogical classes. The link between curriculum and assessment was not very clear. The training period for inquiry based learning was insufficient and unsatisfactory for trainees.

Trainees also shared that the school teachers instructed them to teach from the CBSE curriculum in case the study materials were not available. The school did not provide them with a time table. Since the school teachers were attending DBSE training during that time, trainees were given substitution classes. Thus trainees were not provided with appropriate classes to practise teaching. They were also therefore not guided properly for classroom transactions by school teachers as they were attending training.

The teacher educators shared that D.El.Ed. I year trainees faced more difficulty than D.El.Ed. II year trainees.

(ii) Training strategies

The teacher educators unanimously agreed that no changes in the present D.El.Ed. curriculum is required w.r.t to inquiry based learning pedagogy. More emphasis needs to be laid on the transdisciplinary approach during theory and pedagogy classes. Guidance and training/workshops for an adequate time period should be organised for teaching DBSE curriculum. Observation of school teachers in their classroom devren SEP is suggested.

Findings from Interview of School teachers:

To study the challenges faced by school teachers with regard to DBSE curriculum, ten teachers were interviewed by telephonic means. Some of the challenges highlighted by them included -

High student teacher ratio- Most teachers found a large class strength as a hindrance in teaching through Inquiry based learning, conducting activities etc.

Lack of readiness in learning through IBL- Most teachers observed a learning gap in students across all grades due to the pandemic. They cited this as a reason for lack of readiness among students to learn

from this approach despite the content being very good, student centric,activity based. One teacher shared that got more time as the syllabus was less and focused on a limited number of concepts.

Inadequate physical and digital infrastructure- School teachers shared that for conducting activities they had inadequate/ limited physical and digital infrastructure in school for conducting activities, showing content videos etc. The library also does not have enough study material for self study by students.

The teachers also expressed that since the students in government schools come from weak socio-economic backgrounds, there is also a lack of such digital and physical resources at their home. Parents usually have a single digital device (a mobile phone) with a limited data pack. Therefore, children are not able to learn using online resources as suggested in the curriculum.

Videos in foreign languages- Teachers expressed that the online resources, especially the videos are not in vernacular languages. Therefore, students find a disconnect in learning and difficulty in understanding English in a foreign accent.

Increase in workload- Teachers expressed an increase in workload as the curriculum included lots of activities. Since the class strength was large and there were limited physical and digital resources, the teachers conducted the activities in small groups which was time consuming. Since learning from online resources was not complemented at home, it had to be done at school by the teacher. While some were involved in co-creation of units for subjects, others attended training regarding DBSE. The co creation of syllabus of a particular unit was immediately followed by its delivery. Therefore, there was no printed material available for all teachers at the time of Inquiry based learning of that unit. Also, the absence of physical books was found inconvenient. The curriculum also included many field trips, which was thought to be difficult in implementation, if all were to be conducted in one academic year.

Primary classes - There were certain problems shared by teachers of primary classes which were unique to them. Teachers shared that there existed a learning gap in reading, writing and spelling skills due to the pandemic. Writing was introduced in grade III according to the new curriculum. There were no notebooks and textbooks or other reference materials for students. It was difficult for students to study in such a situation. Also, the students found it difficult to understand that they were learning only through activities, no written work. The flipped roles in IBL also surprised the students. It was also difficult to communicate the syllabus to the parents.

Assessment -Teachers from primary grade shared the same concern with TGTs regarding assessment. The new curriculum included a grading system, whereas parents specifically wanted the results in percentage to understand the progress of their wards. Also in the primary section, assessment required written answers even for grades where writing had not been introduced. Teachers observed a disconnect between formal assessment and pedagogy. Students were also surprised with the change in pattern of assessments.

Suggestions- School teachers have given the following suggestions to improve the Inquiry based learning experience. These included development of videos in vernacular language, introducing the curriculum from primary stage, provision of printed material at the beginning of academic sessions, provision of adequate physical and digital infrastructure.

All school teachers interviewed mentioned that the issues faced by them during implementation of IBL, is constantly addressed in meetings held for DBSE curriculum implementation in schools and measures for the same have been discussed and adopted.

Quantitative data and its analysis

Three perception scales were developed on the basis of themes identified by qualitative data analysis. These tools were administered through Google Forms to D.El.Ed. Trainees, Teacher Educators and School Teachers.

The analysis and interpretation of each perception scale is discussed below.

For each perception scale item, the result is calculated (i) percentage wise and

(i) Interpretation through guidelines in table

S.No.	Score	Description	Mean Range	Interpretation
1	1	Strongly Disagree	SD (1.00-1.80)	Highly negative perception
2	2	Disagree	D(1.81-2.60)	Fairly negative perception
3	3	Undecided	UD(2.61-3.40)	Neutral

4	4	Agree	A(3.41-4.20)	Fairly positive perception
5	5	Strongly Agree	SA(4.21-5.00)	Highly positive perception

Guidelines for interpretation of Perception Scale Items

Perception of D.El.Ed trainees towards Inquiry Based Learning (IBL) Approach

Based on the qualitative data collected through FGD of D.El.Ed. trainees, a perception scale was developed. Table shows the summary of data collected.

Perception of D.El.Ed Trainees towards Inquiry Based Learning (IBL) Approach

S. No	STATUS OF CURRICULUM AND ITS TRANSACTION	SD No. (%)	D No. (%)	UD No. (%)	A No. (%)	SA No. (%)	M	σ	Decision
1.	The content of the curriculum is better than CBSE.	8 (14.5)	10 (18.2)	15 (27.3)	12 (21.8)	10 (18.2)	3.10	1.31	UD
2.	Non availability of textbooks is very helpful in the teaching- learning process.	20 (36.4)	18 (32.7)	12 (21.8)	2 (3.6)	3 (5.5)	2.09	1.11	D
3.	The pedagogy in Inquiry based(IB) learning is child centric.	2 (3.6)	4 (7.3)	11 (20)	18 (32.7)	20 (36.4)	3.90	1.09	A
4.	There are fewer burdens on teachers in teaching through this approach.	7 (12.7)	14 (25.5)	14 (25.5)	12 (21.8)	8 (14.54)	3.5	0.70	A
5.	The student companion and pedagogical companion provide sufficient guidance for classroom transaction.	6 (10.9)	9 (16.4)	18 (32.7)	17 (30.9)	5 (9.1)	3.10	1.13	UD
6.	The audio-video resources provided are contextual and easily understood by children.	4 (7.3)	3 (5.5)	8 (14.5)	21 (38.2)	19 (34.5)	3.87	1.17	A
7.	The language of the videos is age appropriate and easily understood by children.	3 (5.5)	4 (7.3)	9 (16.4)	21 (38.2)	18 (32.7)	3.85	1.12	A
8.	Audio-visual resources are not available in bi-lingual/ multilingual languages.	6 (10.9)	5 (9.1)	15 (27.3)	20 (36.4)	9 (16.4)	3.38	1.19	UD
	Total						**3.34**	**1.10**	**UD**
	DIGITAL AND PHYSICAL INFRASTRUCTURE								

1.	The digital infrastructure (smart board, projector, Wi-Fi, etc.) at school was sufficient and complemented the needs of the IB approach.	22 (40)	9 (16.4)	7 (12.7)	6 (10.9)	11 (20)	2.54	1.589	D
2.	The digital infrastructure at home of the students was sufficient to fulfil the requirements of homework.	15 (27.3)	9 (16.4%)	17 (30.9)	8 (14.5)	6 (10.9)	2.65	1.32	UD
3.	The physical infrastructure (playground, classroom) at school was not sufficient to conduct activities related to the IB approach.	7 (12.7)	7 (12.7)	16 (29.1)	18 (32.7)	7 (12.7)	3.2	1.20	UD
4.	I was not allowed to use school resources (lab, TLM, etc.) in teaching-learning as a student-teacher for my class.	17 (30.9)	15 (27.3)	10 (18.2)	8 (14.5)	5 (9.1)	2.43	1.31	D
	Total						**2.70**	**1.35**	**UD**
	CLASSROOM TRANSACTION								
1.	I received sufficient training/ orientation for teaching with an IB approach.	9 (16.4)	13 (23.6)	9 (16.4)	17 (30.9)	7 (12.7)	3.0	1.31	UD
2.	I was confident about lesson planning in IB approach before starting SEP.	3 (5.5)	10 (18.2)	19 (34..5)	18 (32.7)	5 (9.1)	3.21	1.03	UD
3	I was confident about lesson planning in IB approach by the end of SEP.	3 (5.5)	3 (5.5)	10 (18.2)	21 (38.2)	18 (32.7)	3.87	1.10	A
4.	The student companions and pedagogical companions were provided to us well within time to prepare the lesson plans.	11 (20)	8 (14.5)	13 (23.6)	18 (32.7)	5 (9.1)	2.96	1.29	UD
5.	The SEP in cooperating schools was well organised and executed as planned.	5 (9.1)	10 (18.2)	13 (23.6)	17 (30.9)	10 (18.2)	3.30	1.23	UD
6.	The principal and school teachers cooperated and guided me during SEP.	5 (9.1)	7 (12.7)	8 (14.5)	18 (32.7)	17 (30.9)	3.63	1.29	A
7.	There were too many activities in each unit.	1 (1.8)	5 (9.1)	16 (29.9)	25 (45.5)	8 (14.5)	3.61	0.91	A
8.	There was not enough time to conduct all the activities.	12 (21.8)	12 (21.8)	12 (21.8)	13 (23.6)	6 (10.9)	2.8	1.32	UD
9.	The students participated actively in the activities.	3 (5.5)	7 (12.7)	12 (21.8)	19 (34.5)	14 (25.5)	3.61	1.16	A

10.	The low socio-economic background of students did not affect their learning through this approach.	10 (18.2)	6 (10.9)	14 (25.5)	13 (23.6)	12 (21.8)	3.2	1.39	UD
11.	There was no readiness in the students to learn through this approach.	2 (3.6)	8 (14.5)	16 (29.1)	22 (40)	7 (12.7)	3.43	1.0	A
12.	The size of class was a problem in conducting and organising activities for students.	6 (10.9)	9 (16.4)	9 (16.4)	14 (25.5)	17 (30.9)	3.49	1.37	A
13.	The pedagogical approach and assessment complement each other.	4 (7.3)	3 (5.5)	19 (34.5)	21 (38.2)	8 (14.5)	3.47	1.05	A
14.	I hardly faced any problem in planning the assessment.	7 (12.7)	17 (30.9)	17 (30.9)	7 (12.7)	7 (12.7)	2.81	1.20	UD
15.	I did not face any problem in conducting the assessments.	12 (21.8)	15 (27.3)	15 (27.3)	8 (14.5)	5 (9.1)	2.61	1.23	UD
16.	There was no problem in analysing the assessment results.	10 (18.2)	9 (16.4)	15 (27.3)	15 (27.3)	6 (10.9)	2.96	1.27	UD
	Total						**3.24**	**1.19**	**UD**
	TRAINING STRATEGIES								
1.	The specified training should be conducted for more time.(one week or more).	3 (5.5)	4 (7.3)	10 (18.2)	19 (34.5)	19 (34.5)	3.85	1.14	A
2.	Demonstration classes with this approach should be held for D.El.Ed. trainees before starting SEP.	3 (5.5)	1 (1.8)	5 (9.1)	14 (25.5)	32 (58.2)	4.29	1.08	SA
3.	Simulated teaching of IB learning should be done by D.El.Ed. trainees before SEP.	3 (5.5)	4 (7.3)	6 (10.9)	15 (27.3)	27 (49.1)	4.07	1.18	A
4.	The content curriculum should be both physically and digitally available.	4 (7.3%)	1 (1.8%)	4 (7.3%)	11 (20%)	35 (63.6%)	4.30	1.16	SA
5.	More emphasis should be laid on unit planning and trans disciplinary approach during theory classes or orientation for lesson planning.	4 (7.4)	1 (1.9)	9 (16.7)	23 (42.6)	17 (31.5)	3.88	1.1	A
	Total						**4.07**	**1.13**	**SA**

	Total Aggregate						**3.33**	**1.19**	**UD**

DISCUSSION:

D.El.Ed. trainees had a 'neutral perception' about the inquiry-based learning in DBSE schools, with a mean of 3.33. They are also neutral about the curriculum and its transaction, availability of physical and digital infrastructure, classroom transactions with means of 3.34, 2.70, 3.24 respectively. However, they had a 'highly positive perception' or strongly agreed with the suggested training strategies with a mean of 4.07.

D.El.Ed. trainees agreed that the pedagogy in Inquiry based (IB) learning is child centric, fewer burdens on teachers in teaching through this approach, audio- video resources provided are contextual and easily understood by children. They also agreed that they were confident about lesson planning in IB approach by the end of SEP, the principal and school teachers cooperating and guiding them during SEP. There were too many activities in each unit and the students participated actively in the activities. They were of the opinion that there was no readiness in the students to learn through this approach and the size of class was a problem in conducting and organizing activities.

They also had a fairly positive perception about the conduction of specified training for a longer time. (One week or more), simulated teaching of IB learning should be done by D.El.Ed. trainees before SEP and more emphasis should be laid on unit planning and trans disciplinary approach during theory classes or orientation for lesson planning.

D.El.Ed. trainees have a highly positive perception about demonstration classes with this approach being held for them before starting SEP and the content curriculum should be both physically and digitally available.

D.El.Ed. trainees disagreed that the non-availability of textbooks was very helpful in the teaching-learning process, allowed to use school resources (lab, TLM, etc.) in teaching-learning as a trainee for the class and the digital infrastructure (smart board, projector, Wi-Fi, etc.) at school was sufficient and complimented the needs of the IB approach.

They had a neutral perception that the content of the curriculum was better than CBSE, the student companion and pedagogical companion providing sufficient guidance for classroom transactions, audio-visual resources are not available in bi-lingual/multilingual languages. They were undecided about the amount of training being sufficient, SEP in schools being well planned and organized, the socio-economic background of students affecting their learning through this They were also neutral whether the digital and physical infrastructure at school and home was adequate, planning and conducting and analyzing assessments, provision of adequate time period for conducting activities.

SUMMARY OF FINDINGS AND SUGGESTIONS

The present research study was conducted to the Perception of D.El.Ed. Trainees, School Teachers and Teacher Educators on Inquiry Based Teaching and Learning Approach in DoE Schools (DBSE) of District-East, Delhi. The first chapter introduced the problem of the study and listing the research questions. The second chapter dealt with review of literature on the subject to deepen understanding of the same. The third chapter described the research methodology used in the study and details of the sample, tools techniques and data collection procedure. The fourth chapter dealt with the analysis and interpretation of qualitative and quantitative tools and techniques. The last chapter summarizes the findings and provides suggestions for the future.

THE FINDINGS ARE AS FOLLOWS:

The first research question aimed at studying the type of content and presentation included in DBSE's Pedagogic Companion for School Teachers. The investigators did not have access to the documents officially; therefore, this research question is left unanswered.

The second research question aimed at studying the challenges faced by D.El.Ed. trainees, School teachers and Teacher Educators during SEP in the transaction of unit plan in school of DBSE. The findings from qualitative and quantitative data reveal that D.El.Ed. trainees faced problems due to non-availability of textbooks, inadequate digital and physical infrastructure, guidance from teachers and principal of cooperating schools, too many activities to be conducted. There were discrepancies in quantitative and qualitative data in areas like increase in burden on teachers due to this approach, language of the videos being age appropriate and easily understood by children, allowed to use school

resources, pedagogical approaches and assessment complementing each other.
The school teachers faced problems in areas of student teacher ratio, readiness in learning through IBL, inadequacy of physical and digital infrastructure, language of videos, increased workload, inadequate assessment methods and certain problems exclusively about primary classes came to light.
The teacher educators highlighted problems in areas of availability of content material within the time period, planning and coordination between DoE schools and DIETs, insufficient training for SEP.
The third research explored the strategies used to deal with the challenges faced by D.El.Ed. trainees school teachers and teacher educators. These included explanation of videos in vernacular language, use of materials from everyday life for demonstration, conducting activities in a shorter time etc

SUGGESTIONS

D.El.Ed-trainees, school teachers and teacher educators have suggested the following for smoother transactions by IBL. These include:

- Increase in time period of training before SEP.
- Demonstration classes to be held before SEP for D.El.Ed. trainees.
- Simulated teaching of IBL by D.El.Ed. trainees.
- Availability of curriculum and guidelines well in time.
- Availability of adequate physical and digital infrastructure.
- Reduction in the number of activities to be conducted.
- Videos to be made in vernacular languages.

More emphasis on unit planning and trans disciplinary approach during theory classes.

CONCLUSION

The perception of D.El.Ed. trainees towards the Inquiry based learning was neutral. School teachers and teacher educators had a fairly positive perception about it. Previous studies also support that both school teachers and D.El.Ed. trainees do face hurdles initially while using IBL as an approach. This is due to lack of support, guidance, training, large classrooms and student's readiness and expectations. All these factors act as speed breakers to application of any new pedagogical approach. However, if suggestions are incorporated and acted upon, these can easily help in speeding up the learning through this approach.

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