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Challenges in the Implementation of Constructivist Teaching-Learning Practices at the Secondary School Level

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Abstract
Constructivist teaching-learning practices have gained significant importance in contemporary education as they promote active learning, critical thinking, problem-solving, collaboration, and learner-centered instruction. competency-based and experiential learning, making constructivist pedagogy highly relevant in secondary education. Despite its educational benefits, the effective implementation of constructivist teaching-learning practices remains a challenge due to various institutional, pedagogical, and infrastructural constraints. The present study aimed to investigate the challenges faced by secondary school teachers in implementing constructivist teaching-learning practices. A descriptive survey method with a quantitative research design was adopted for the study. A sample of 100 secondary school teachers was selected using simple random sampling. Data were collected through a structured questionnaire and analyzed using frequency, percentage, mean score, and standard deviation. The findings indicate that inadequate teacher training, large class sizes, examination-oriented education, insufficient instructional resources, time constraints, and limited administrative support are the major barriers to implementing constructivist practices effectively. The study highlights the need for continuous professional development programmes, curriculum reforms, improved classroom infrastructure, and institutional support to facilitate successful implementation of constructivist pedagogy. The findings provide useful insights for teachers, school administrators, curriculum developers, and policymakers in promoting learner-centered education and improving the quality of secondary education.

Keywords: Constructivism, Constructivist Teaching, Secondary School Education, Learner-Centered Learning, Teacher Challenges, Educational Practices.

1. Introduction

Education has gradually shifted from traditional teacher-centered instruction to learner-centered approaches that actively engage students in constructing knowledge through meaningful experiences. Constructivism has emerged as one of the most influential educational philosophies supporting this transformation. It views learning as an active process in which learners construct their own understanding by connecting new experiences with prior knowledge rather than passively receiving information from teachers. This approach encourages inquiry, collaboration,

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critical thinking, creativity, and problem-solving, thereby fostering deeper understanding and long-term retention of knowledge. The theoretical foundations of constructivism were established by educational psychologists such as Jean Piaget, Lev Vygotsky, Jerome Bruner, and John Dewey. Piaget emphasized cognitive development through active exploration, while Vygotsky highlighted the importance of social interaction and collaborative learning. Bruner advocated discovery learning, and Dewey promoted experiential learning through practical engagement. Together, these theories have significantly influenced modern educational practices and curriculum development worldwide.

Constructivist teaching-learning practices emphasize active participation, cooperative learning, project-based activities, inquiry-based instruction, problem-solving tasks, reflective thinking, and authentic assessment. In this approach, teachers act as facilitators who guide learners in exploring concepts, asking questions, solving problems, and developing independent thinking skills. Students become active participants in the learning process rather than passive recipients of information. experiential learning, multidisciplinary approaches, critical thinking, and holistic development, all of which are closely aligned with constructivist principles. Consequently, constructivist pedagogy has become increasingly important in Indian secondary schools. However, despite policy support, the implementation of constructivist teaching-learning practices remains inconsistent across schools.

2. Concept of Constructivist Teaching-Learning

Constructivism is a learner-centered educational philosophy that emphasizes the active construction of knowledge through experience, interaction, reflection, and inquiry. According to this approach, learning occurs when students actively engage with ideas, solve problems, collaborate with peers, and relate new knowledge to their existing understanding. Knowledge is therefore constructed rather than transmitted directly from teacher to learner.

Constructivist teaching transforms the role of the teacher from a transmitter of information to a facilitator, mentor, and guide. Instead of delivering lectures, teachers create learning environments that encourage questioning, investigation, experimentation, and discussion. Students participate actively in group work, projects, case studies, simulations, problem-solving activities, and reflective learning experiences.

The major characteristics of constructivist teaching-learning include:

- Learner-centered instruction
- Active participation of students
- Inquiry-based learning
- Collaborative and cooperative learning
- Problem-solving and critical thinking
- Experiential and project-based learning

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- Reflection and self-assessment
- Integration of prior knowledge with new experiences
- Authentic assessment techniques
- Teacher as facilitator rather than instructor

Constructivist teaching promotes meaningful learning by encouraging students to become independent learners capable of applying knowledge in real-life situations. It develops higher-order thinking skills, creativity, communication, collaboration, and lifelong learning competencies required in the twenty-first century.

3. Need for Constructivist Teaching-Learning Practices

The changing demands of modern society require education systems to develop learners who are creative, analytical, adaptable, and capable of solving complex problems. Traditional lecture-based instruction often emphasizes memorization rather than understanding and application. Constructivist teaching-learning practices address these limitations by actively involving students in meaningful learning experiences.

The need for constructivist teaching-learning practices is evident for several reasons:

1. It promotes active participation and learner engagement in classroom activities.
2. It develops critical thinking, analytical reasoning, and problem-solving abilities.
3. It encourages collaboration, communication, and teamwork among students.
4. It enhances creativity and innovation through experiential learning.
5. It enables students to connect classroom learning with real-life experiences.
6. It supports competency-based education
7. It improves conceptual understanding rather than rote memorization.
8. It encourages self-directed learning and lifelong learning habits.
9. It develops confidence, decision-making ability, and social responsibility.
10. It prepares students for higher education, employment, and responsible citizenship in a knowledge-based society.

Thus, constructivist teaching-learning practices contribute significantly to improving the quality, relevance, and effectiveness of secondary education.

4. Review of Literature

A review of related literature provides a theoretical foundation for understanding constructivist teaching-learning practices and the challenges associated with their implementation.

Piaget (1952) proposed that learners actively construct knowledge through interaction with their environment. His theory emphasized cognitive development through exploration, discovery, and problem-solving rather than passive reception of information.

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Vygotsky (1978) highlighted the social nature of learning and introduced the concept of the Zone of Proximal Development (ZPD). He emphasized that collaborative learning and teacher guidance play essential roles in students' cognitive development.

Bruner (1966) advocated discovery learning and argued that learners understand concepts more effectively when they actively explore and discover knowledge independently under teacher guidance.

Brooks and Brooks (1999) emphasized that constructivist classrooms promote inquiry, discussion, collaborative learning, and authentic assessment. Their study highlighted the importance of learner-centered teaching in improving conceptual understanding.

Richardson (2003) reported that constructivist pedagogy enhances students' motivation, higher-order thinking, and classroom participation. However, successful implementation depends largely on teacher competence and institutional support.

Kumar (2018) found that secondary school teachers recognized the educational value of constructivist teaching but faced challenges such as limited training, large class sizes, insufficient teaching materials, and examination pressures.

Patil and Deshmukh (2019) reported that inadequate infrastructure, lack of technological resources, heavy workloads, and rigid curriculum requirements limited teachers' ability to adopt constructivist teaching-learning practices effectively in secondary schools.

The review indicates that constructivist pedagogy has significant educational advantages, including improved conceptual understanding, critical thinking, collaboration, and learner engagement. However, its successful implementation requires adequate teacher preparation, supportive school environments, flexible curricula, and sufficient instructional resources. These findings justify the need for the present study, which examines the challenges of implementing constructivist teaching-learning practices at the secondary school level.

5. Objectives of the Study

The present study was conducted with the following objectives:

1. To study the extent of implementation of constructivist teaching-learning practices at the secondary school level.
2. To identify the major challenges faced by secondary school teachers in implementing constructivist teaching-learning practices.
3. To examine students' perceptions regarding constructivist teaching-learning practices in secondary schools.
4. To compare the perceptions of teachers and students regarding the challenges of implementing constructivist teaching-learning practices.
5. To suggest suitable measures for improving the effective implementation of constructivist teaching-learning practices at the secondary school level.

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6. Hypotheses of the Study

The following hypotheses were formulated for the study:

Null Hypothesis (H_0)

H_{01}: There is no significant difference between the perceptions of secondary school teachers and students regarding the challenges in the implementation of constructivist teaching-learning practices.

Alternative Hypothesis (H_1)

H_{11}: There is a significant difference between the perceptions of secondary school teachers and students regarding the challenges in the implementation of constructivist teaching-learning practices.

7. Significance of the Study

The present study is significant because constructivist teaching-learning practices are widely recognized as effective approaches for promoting active learning, critical thinking, collaboration, and problem-solving among secondary school students. Despite the educational benefits of constructivism, many schools continue to face difficulties in implementing learner-centered instructional strategies effectively.

The findings of this study will help teachers understand the major barriers that hinder the successful implementation of constructivist teaching-learning practices and encourage them to adopt appropriate classroom strategies. The study will also assist school administrators in planning teacher training programmes, improving instructional resources, and creating supportive learning environments that facilitate constructivist pedagogy.

The results will be useful for curriculum developers and policymakers in strengthening competency-based education and implementing the recommendations Furthermore, the study contributes to educational research by providing empirical evidence on the perceptions of both teachers and students regarding constructivist teaching-learning practices and offers practical recommendations for improving the quality of secondary education.

8. Research Methodology

Research methodology provides the scientific framework for conducting a systematic investigation and obtaining reliable findings. The present study adopted a quantitative approach to examine the challenges in implementing constructivist teaching-learning practices at the secondary school level. Data were collected from teachers and students through structured questionnaires and analyzed using appropriate statistical techniques.

Particular	Description
Research Method	The present study employed the **Descriptive Survey Method**, which is appropriate for collecting information about existing educational practices, opinions, and challenges. This method enabled the researcher to study the

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	perceptions of teachers and students regarding constructivist teaching-learning practices without manipulating any variables.
Research Design	The study followed a **Quantitative Research Design** to collect objective and measurable data. Quantitative analysis helped compare the perceptions of teachers and students and identify the major challenges affecting the implementation of constructivist teaching-learning practices in secondary schools.
Population	The population of the study consisted of all secondary school teachers and secondary school students studying in recognized secondary schools of the selected study area. Both teachers and students were included to obtain comprehensive information regarding constructivist teaching-learning practices.
Sample	A total sample of **100 respondents** was selected for the study, comprising **50 secondary school teachers and 50 secondary school students**. The sample provided equal representation of both stakeholder groups and ensured meaningful comparison of their perceptions.
Sampling Technique	The **Simple Random Sampling Technique** was adopted for selecting both teachers and students. Every respondent had an equal opportunity to participate in the study, ensuring fairness, minimizing sampling bias, and improving the representativeness of the collected data.
Research Tool	Two **Structured Questionnaires** were developed by the researcher—one for teachers and another for students. The questionnaires included items related to awareness, classroom implementation, teaching-learning resources, administrative support, learner participation, assessment practices, and challenges associated with constructivist teaching-learning.
Statistical Techniques	The collected data were analyzed using **Frequency, Percentage, Mean Score, Standard Deviation, and Independent Sample t-test**. These statistical techniques were employed to summarize responses, compare the perceptions of teachers and students, test the research hypothesis, and draw meaningful conclusions.

9. Results and Discussion

The statistical analysis revealed that both teachers and students possessed a satisfactory understanding of constructivist teaching-learning practices. However, teachers demonstrated greater awareness of constructivist pedagogy than students. Most teachers identified inadequate professional training, examination-oriented teaching, large class sizes, limited instructional time, and insufficient teaching-learning resources as the major barriers to implementing constructivist practices effectively.

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Table 1: Teachers' Awareness of Constructivist Teaching-Learning Practices (N = 50)

Awareness Level	Frequency	Percentage
High	18	36%
Moderate	24	48%
Low	8	16%
Total	**50**	**100%**

Interpretation

The table indicates that most teachers (48%) possess a moderate level of awareness regarding constructivist teaching-learning practices, while 36% have high awareness. Only 16% reported low awareness, suggesting that teachers are generally familiar with constructivist pedagogy.

Table 2: Students' Perception of Constructivist Classroom Practices (N = 50)

Perception Level	Frequency	Percentage
High	15	30%
Moderate	27	54%
Low	8	16%
Total	**50**	**100%**

Interpretation

The majority of students (54%) perceived that constructivist teaching-learning practices are implemented at a moderate level. Thirty percent reported a high level of implementation, while 16% perceived a low level of constructivist classroom practices.

Table 3: Major Challenges Faced by Teachers

Challenge	Frequency	Percentage
Large Class Size	42	84%
Lack of Training	45	90%
Inadequate Resources	39	78%
Time Constraints	37	74%
Examination Pressure	43	86%

Interpretation

The table reveals that lack of training (90%) is the most significant challenge, followed by examination pressure (86%) and large class size (84%). These factors considerably hinder the effective implementation of constructivist teaching-learning practices.

Table 4: Strategies Suggested for Effective Implementation

Strategy	Frequency	Percentage
Teacher Training	46	92%
Curriculum Flexibility	41	82%

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ICT Integration	38	76%
Better Infrastructure	40	80%
Continuous Professional Development	44	88%

Interpretation

Teacher training (92%) emerged as the most preferred strategy, followed by continuous professional development (88%). Respondents emphasized that institutional support and curriculum flexibility are essential for effective implementation.

Table 5: Comparison of Mean Scores

Group	N	Mean	Standard Deviation
Teachers	50	81.36	6.42
Students	50	76.24	7.15

Interpretation

Teachers obtained a higher mean perception score (81.36) than students (76.24). This suggests that teachers perceive the challenges associated with constructivist teaching-learning more strongly than students.

Table 6: Independent Sample t-Test

Variable	Teachers Mean	Students Mean	t-value	Level of Significance
Challenges in Constructivist Teaching	81.36	76.24	3.81	Significant at 0.05 level

Interpretation

The calculated t-value of **3.81** is significant at the **0.05 level**, indicating a statistically significant difference between teachers' and students' perceptions regarding the challenges in implementing constructivist teaching-learning practices.

Students acknowledged that learner-centered activities such as group discussions, collaborative learning, project work, and problem-solving were implemented only to a moderate extent in their classrooms. This suggests that although constructivist principles are recognized, their practical implementation remains limited.

The comparison of mean scores showed that teachers perceived implementation challenges more strongly than students. The independent sample t-test confirmed a statistically significant difference between the perceptions of teachers and students regarding constructivist teaching-learning practices. These findings indicate that successful implementation of constructivism depends largely on teacher preparedness, institutional support, curriculum flexibility, and adequate classroom resources.

The results are consistent with previous research, which suggests that constructivist pedagogy enhances meaningful learning but requires continuous teacher training, supportive school

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leadership, manageable class sizes, and learner-centered assessment practices for effective classroom implementation.

10. Hypothesis Testing

Null Hypothesis (H_0): There is no significant difference between the perceptions of teachers and students regarding the challenges in implementing constructivist teaching-learning practices.

Decision: Since the calculated t-value (**3.81**) is significant at the 0.05 level, the null hypothesis is **rejected**, and the alternative hypothesis is **accepted**.

Interpretation of Hypothesis

The statistical analysis confirms a significant difference between teachers' and students' perceptions of the challenges in implementing constructivist teaching-learning practices at the secondary school level. Teachers perceive these challenges more strongly than students, indicating that educators encounter greater practical difficulties in implementing learner-centered instructional approaches.

Comparison of Mean Perception Scores on Challenges in Implementing Constructivist Teaching-Learning Practices

Mean perception scores of secondary school teachers and students regarding implementation challenges.

Group	Mean
Teachers	81.36
Students	76.24

11. Major Findings

1. The majority of secondary school teachers possess moderate to high awareness of constructivist teaching-learning practices.
2. Most students perceive that constructivist teaching-learning activities are implemented at a moderate level in secondary school classrooms.
3. Lack of professional training emerged as the most significant challenge faced by teachers in implementing constructivist pedagogy.
4. Examination-oriented teaching, large class sizes, inadequate instructional resources, and time constraints were identified as major barriers.
5. Teacher training and continuous professional development were considered the most effective strategies for strengthening constructivist classroom practices.
6. Teachers obtained a higher mean perception score than students regarding implementation challenges.
7. The independent sample t-test revealed a statistically significant difference between teachers' and students' perceptions regarding the challenges of implementing constructivist teaching-learning practices.

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8. The study indicates that effective implementation of constructivism requires collaborative efforts from teachers, school administrators, curriculum planners, and educational policymakers.

12. Educational Implications

The findings of the present study have several important implications for improving the quality of secondary education.

1. Regular in-service teacher training programmes should be organized to strengthen teachers' understanding and application of constructivist teaching strategies.
2. Teacher education institutions should incorporate constructivist pedagogy, experiential learning, and learner-centered instructional methods into pre-service teacher preparation programmes.
3. Curriculum developers should design flexible, competency-based curricula that encourage inquiry, collaboration, creativity, and problem-solving.
4. Schools should reduce excessive dependence on rote learning and examination-oriented teaching by promoting authentic and continuous assessment methods.
5. Adequate classroom infrastructure, digital technologies, laboratories, libraries, and teaching-learning materials should be provided to support constructivist classroom practices.
6. School administrators should encourage collaborative learning, project-based instruction, and innovative teaching methods through academic support and classroom supervision.
7. Students should be provided with opportunities to participate actively in discussions, investigations, projects, and reflective learning activities that promote critical thinking and lifelong learning.

13. Conclusion

Constructivist teaching-learning practices have become essential for developing critical thinking, creativity, collaboration, communication, and problem-solving skills among secondary school students. The present study concludes that although teachers and students recognize the educational value of constructivist pedagogy, its effective implementation continues to face several challenges. Inadequate teacher training, examination-oriented education, large class sizes, limited instructional resources, insufficient classroom time, and lack of institutional support significantly affect the successful adoption of learner-centered teaching practices.

The findings further indicate that teachers experience these implementation challenges more intensely than students, as reflected in the statistically significant difference between their perceptions. Therefore, improving constructivist teaching requires systematic teacher preparation, supportive educational leadership, curriculum reforms, adequate infrastructure, and continuous professional development. Strengthening these areas will enable schools to create

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learner-centered classrooms Effective implementation of constructivist pedagogy can contribute significantly to improving the quality and relevance of secondary education.

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