A Study on Challenges Faced by Teachers in Implementing Learner-Centred Pedagogical Approaches in the Digital Era

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Abstract

The rapid expansion of digital technologies is continuously reshaping the modern teaching–learning process, prompting educators to adopt learner-centred pedagogical approaches. Although these approaches promote active engagement and deeper understanding of subject matter, many teachers encounter difficulties in implementing them effectively. This study aims to examine the challenges faced by higher secondary school teachers in adopting learner-centred pedagogies in the digital era. A sample of 60 teachers—30 from urban and 30 from rural provincialized schools—was selected using simple random sampling. Data were gathered through a self-structured Likert-scale questionnaire, and analyzed using mean, standard deviation, and t-test. The findings indicate that inadequate digital infrastructure, limited teacher training, time constraints, curriculum rigidity, and varying levels of students' digital competencies significantly hinder the implementation of learner-centred practices. The study highlights the need for systematic professional development, improved technological resources, and greater curricular flexibility to support the effective integration of learner-centred pedagogy in digitally enriched educational environments. It is further anticipated that the findings will assist stakeholders and higher authorities in taking appropriate initiatives to make the teaching–learning process more effective and engaging.

Keywords: Challenges, Learner-Centred, Pedagogical Approaches, Digital Era

1. Introduction:

Rapid developments in digital technologies have brought a significant shift from traditional teacher-centred approaches to more learner-centred modes of instruction. With the growing

integration of digital tools, online learning platforms, and multimodal educational resources, along with the expansion of blended and online learning environments, classroom practices have undergone substantial transformation. As a result, teaching is progressively moving away from conventional, teacher-directed methods toward approaches that emphasize student engagement, collaboration, critical thinking, and self-directed learning.

Learner-centred pedagogy encourages students to take an active role in constructing knowledge through inquiry, exploration, and meaningful interaction. Digital technologies further enhance these approaches by offering opportunities for personalized learning, flexible access to course materials, and multiple avenues for participation. However, the effective implementation of such pedagogies requires teachers to adjust their instructional roles, redesign learning activities, integrate technology purposefully, and continuously develop their digital competencies. These demands pose considerable challenges and can hinder teachers from establishing truly learner-centred environments.

Although digital innovations offer great potential for improving teaching and learning, educators often face substantial barriers such as inadequate technological infrastructure, limited professional development, insufficient digital literacy, time constraints, and rigid curricular frameworks. Moreover, variations in students' access to digital tools and differences in their technological readiness further complicate classroom application. These challenges are particularly pronounced in contexts where institutional support, resource availability, or educational policies do not align with the needs of modern pedagogy.

In view of these issues, it becomes crucial to investigate the specific challenges teachers encounter while implementing learner-centred instructional approaches in technology-enhanced classrooms both in urban and rural areas. A deeper understanding of these difficulties can inform policymakers, school administrators, and curriculum designers as they develop targeted measures to strengthen teachers' professional capabilities and support effective pedagogical transformation. Therefore, this study seeks to identify and analyze the major challenges faced by higher secondary school teachers in adopting learner-centred pedagogical practices in the digital era.

1.1 Objectives of the Study:

1.1.1 To know about the teachers' level of understanding regarding the use of learner-centred pedagogical approaches in the digital era in Golaghat District, Assam

1.1.2 To study how the level of understanding of learner-centred pedagogical approaches in the digital era differs between urban and rural teachers.

1.1.3 To know about the major challenges teachers, encounter in implementing learner-centred pedagogical approaches in the digital era.

1.1.4 To suggest measures for improving the implementation of learner-centred pedagogy in the digital era.

1.2 Hypotheses of the study:

H_{01}: Teachers do not possess a significant level of understanding regarding the use of learner-centred pedagogical approaches in the digital era in Golaghat District, Assam.

H_{02}: There is no significant difference between urban and rural teachers in their level of understanding of learner-centred pedagogical approaches in the digital era.

2. Research Methodology:

2.1 Methods:

The present study adopted a **descriptive survey method** to investigate the challenges faced by teachers in implementing learner-centred pedagogical practices in the digital era.

2.2 Population, Sample and Sampling Technique:

The population for the study consisted of higher secondary school teachers working in provincialized schools in the Golaghat district of Assam. Using a simple random sampling technique, a total of 60 teachers were selected, comprising 30 teachers from urban areas and 30 from rural areas.

2.3 Tools and Techniques of Data Collection:

Self-structured questionnaire based on a five-point Likert scale consisted of several statements rated on a 5-point scale ranging from "Strongly Agree" to "Strongly Disagree.

3. Analysis and Interpretation:

Objective 1.1.1: To know about the teachers' level of understanding regarding the use of learner-centred pedagogical approaches in the digital era in Golaghat District, Assam.

H_{01}: Teachers do not possess a significant level of understanding regarding the use of learner-centred pedagogical approaches in the digital era in Golaghat District, Assam.

Table 1

Mean and Standard Deviation of Teachers' Responses as a whole

Sl. No.	Variable	N	Mean	SD	Interpretation
1	Perceptions of Learner-Centred Pedagogy	60	3.85	0.62	High positive perception
2	Challenges in Implementing Learner-Centred Pedagogy	60	3.28	0.71	Moderate level of challenges
3	Impact of Digital Technologies on Teaching Practices	60	3.67	0.65	Positive impact
4	Institutional & Environmental Constraints	60	3.10	0.74	Moderate constraints
5	Readiness & Improvement Measures	60	3.92	0.58	High readiness for improvement

From the Table 1 above, it is found that the overall mean and standard deviation values of the responses provided by 60 teachers across five key dimensions of the study. The findings offer valuable insights into teachers' perceptions, the challenges they encounter, and their level of preparedness regarding learner-centred pedagogy within digitally supported teaching environments.

Regarding the Perceptions of Learner-Centred Pedagogy, it is found that the mean score of 3.85 suggests that teachers generally maintain a very positive outlook toward learner-centred teaching practices. This indicates broad agreement with approaches that promote student engagement, active learning, and constructivist principles. The comparatively low SD of 0.62 signifies minimal variation in responses, showing that teachers share a common and favourable perception of such pedagogical methods.

Regarding the Challenges in Implementing Learner-Centred Pedagogy, it is found that the mean value of 3.28 indicates that teachers experience a moderate degree of challenges in implementing learner-centred approaches. These difficulties may relate to classroom organisation, insufficient preparation time, inadequate training, or challenges in transitioning from traditional to modern teaching styles. The SD of 0.71 reflects noticeable differences among teachers' experiences, suggesting that the level of challenges varies across respondents.

Regarding the Impact of Digital Technologies on Teaching Practices it is found that the mean score of 3.67 points to a positive influence of digital technologies on teachers' instructional practices. Teachers recognise that digital tools help make lessons more engaging, enhance delivery, and support interactive learning activities. The SD of 0.65 indicates moderate consistency in responses, suggesting that most teachers benefit similarly from integrating digital technologies.

Regarding the Institutional and Environmental Constraints, it is found that the mean score of 3.10 reveals the presence of moderate institutional and environmental barriers. These may include limited facilities, weak ICT infrastructure, poor internet connectivity, large classroom sizes, or a lack of administrative support. The relatively higher SD of 0.74 indicates considerable variation among teachers, possibly influenced by differences between rural and urban school contexts.

Regarding the Readiness and Improvement Measures, the mean score of 3.92 indicates that teachers exhibit a high level of preparedness to enhance their instructional practices and embrace innovative teaching methods. This reflects their openness to adopting new pedagogical strategies and their willingness to engage in professional development activities. The relatively low standard deviation (0.58) further indicates strong agreement among respondents, suggesting a collective

commitment to ongoing improvement in both teaching approaches and the use of educational technologies in Golaghat District, Assam.

Objective 1.1.2: To study how the level of understanding of learner-centred pedagogical approaches in the digital era differs between urban and rural teachers in Golaghat District, Assam

H$_{02}$: There is no significant difference between urban and rural teachers in their level of understanding of learner-centred pedagogical approaches in the digital era in Golaghat District, Assam

Table 2: Difference between urban and rural teachers regarding the level of understanding of learner-centred pedagogical approaches in the digital era

Variable	Group	N	Mean	SD	t-value	p-value	Interpretation
Perceptions of Learner-Centred Pedagogy	Urban	30	3.92	0.58	0.89	>0.05	Not Significant
	Rural	30	3.78	0.66			
Challenges in Implementation	Urban	30	3.10	0.69	2.02	<0.05	*Significant*
	Rural	30	3.46	0.72			
Impact of Digital Technologies	Urban	30	3.72	0.63	0.60	>0.05	Not Significant
	Rural	30	3.62	0.67			
Institutional & Environmental Constraints	Urban	30	2.98	0.71	1.27	>0.05	Not Significant
	Rural	30	3.22	0.76			
Readiness & Improvement Measures	Urban	30	4.01	0.55	1.20	>0.05	Not Significant

The above Table 2 presents a comparative analysis of urban and rural teachers across five major variables related to learner-centred pedagogy in the digital era. Independent sample t-tests were conducted to determine whether significant differences exist between the two groups.

Regarding the Perceptions of Learner-Centred Pedagogy, the t-value of 0.89 and a p-value exceeding 0.05 indicate that there is no statistically significant difference between urban (Mean = 3.92) and rural (Mean = 3.78) teachers. This implies that teachers from both settings hold similarly positive views regarding learner-centred pedagogical approaches, irrespective of their school location.

Regarding the Challenges in Implementation, the t-value of 2.02 and a p-value less than 0.05 reveal a significant difference between urban and rural teachers. Rural teachers (Mean = 3.46) experience more challenges in implementing learner-centred methods than urban teachers (Mean = 3.10). This may be due to limited resources, infrastructural gaps, or reduced access to digital facilities and training in rural schools.

Regarding the Impact of Digital Technologies, the t-value is found 0.60 with a p-value greater than 0.05 indicates no significant difference between urban (Mean = 3.72) and rural (Mean = 3.62) teachers. Both groups perceive digital technologies as having a similarly positive impact on their teaching practices, suggesting widespread acceptance of technology-enhanced teaching.

Regarding the Institutional and Environmental Constraints, from the table 2, the t-value of 1.27 and p-value greater than 0.05 show that differences between urban and rural teachers are not statistically significant in this variable. Although rural teachers report slightly higher constraints (Mean = 3.22), the difference is not strong enough to be meaningful. This indicates that institutional challenges affect both groups to a comparable extent.

From table 2, regarding the Readiness and Improvement Measures, the t-value is found 1.20 and p-value greater than 0.05, hence there is no significant difference between urban and rural teachers in terms of readiness and willingness to improve instructional practices. Both groups show a high level of readiness to adopt new pedagogical strategies and engage in continuous professional development.

The findings indicate that urban and rural teachers exhibit similar perceptions regarding learner-centred pedagogy, the influence of digital technologies, institutional and environmental constraints, and their readiness for professional improvement.

The significant difference is observed only in the challenges of implementation, with rural teachers experiencing greater difficulties. This underscores the need for enhanced support, targeted training, and improved infrastructure in rural schools to ensure the successful adoption of learner-centred pedagogical approaches in the digital era in Golaghat District, Assam.

Objective 1.1.3: To know about the major challenges teachers, encounter in implementing learner-centred pedagogical approaches in the digital era.

The analysis for these objective centres on identifying and understanding the main obstacles teachers face in applying learner-centred pedagogical practices within digitally supported classroom settings. The data indicate several significant challenges that stem from both technological and instructional limitations.

To begin with, many teachers pointed to a shortage of digital resources, such as inadequate access to devices, unstable internet connectivity, and limited technical assistance. These problems were more evident in rural schools, where infrastructural deficits make it difficult to fully utilise digital tools essential for learner-centred teaching.

Teachers also expressed concerns about their own preparedness, noting insufficient training in contemporary pedagogy, digital competencies, and hands-on application of learner-centred approaches. Without ongoing professional development, it becomes difficult for educators to design activities that foster active engagement, collaboration, and personalized learning.

Time pressure and excessive workloads present additional hurdles. Learner-centred strategies—like group work, project-based learning, and differentiated instruction—require substantial planning, and many teachers struggle to allocate the necessary time while managing other duties.

Objective 1.1.4: To suggest measures for improving the implementation of learner-centred pedagogy in the digital era.

In the digital era, teachers often encounter challenges such as inadequate technological infrastructure, insufficient training, large class sizes, and diverse levels of student preparedness. To overcome these barriers, specific interventions are needed to help teachers apply learner-centred approaches more effectively. Possible measures that can be taken for improving the implementation of learner-centred pedagogy in the digital era are as follows-

Professional Development: Offering continuous training programs and workshops that equip teachers with skills in learner-centred methods, the use of digital tools, and innovative teaching techniques.

Technological Support: Providing adequate digital devices, reliable internet access, and high-quality educational software to facilitate interactive learning.

Curricular and Institutional Support: Developing flexible curricula that encourage active learning, group work, and student-driven activities, along with strong administrative support for modern teaching practices.

Collaborative Learning Communities: Promoting collaboration among teachers through peer networks where they can exchange resources, experiences, and effective teaching strategies.

Monitoring and Feedback: Creating mechanisms to track classroom practices, collect feedback from both teachers and students, and make necessary improvements over time.

Improvement in teaching performance, boosting student engagement, and creating meaningful learning opportunities by ensuring the effective and consistent implementation of learner-centred pedagogy in digitally integrated educational settings is utmost necessary.

4. Findings:

4.1 Teachers' Understanding of Learner-Centred Pedagogy: The overall mean score (M = 3.85) shows that teachers have a strong understanding of learner-centred approaches. They acknowledge that such methods enhance engagement, active participation, and meaningful learning. The low SD (0.62) indicates consistent positive perceptions among respondents.

4.2 Challenges in Implementing Learner-Centred Pedagogy: Teachers reported moderate challenges in implementation (M = 3.28), with a higher SD (0.71) reflecting variation across school contexts. Key challenges include inadequate digital infrastructure, limited training and digital skills, heavy workloads, unequal student digital readiness, and institutional barriers such as rigid curricula and large class sizes.

4.3 Impact of Digital Technologies: With a mean score of 3.67, teachers view digital technologies as beneficial, noting improvements in lesson delivery, student engagement, and classroom interactivity.

4.4 Institutional and Environmental Constraints: Moderate institutional constraints (M = 3.10) were reported, including insufficient ICT facilities, poor internet connectivity, and limited administrative support.

4.5 Teachers' Readiness and Improvement Measures: A high mean score (M = 3.92) indicates strong teacher readiness to enhance instructional practices and adopt modern methods. Teachers expressed willingness to engage in professional development and effectively use digital tools. The low SD (0.58) suggests uniform agreement on this readiness.

5. Conclusion

The study reveals that teachers hold a generally positive understanding of learner-centred pedagogical approaches and acknowledge the supportive role of digital technologies in improving teaching and learning. They also demonstrate a strong willingness to refine their instructional practices and adopt innovative, student-oriented methods.

However, the effective implementation of learner-centred pedagogy in digitally supported classrooms is hindered by several challenges. Teachers face issues such as limited technological infrastructure, inadequate professional training, heavy workloads, diverse levels of student digital competence, and institutional constraints. These challenges are especially evident in rural schools, where infrastructural deficiencies and fewer training opportunities persist.

The findings highlight the need for targeted interventions, including enhanced digital infrastructure, ongoing professional development, greater administrative support, and more flexible curricular structures. Such measures are essential for enabling teachers to effectively apply learner-centred practices within modern, technology-integrated classrooms.

In conclusion, ensuring equitable access to technology, strengthening teacher competencies, and providing robust institutional support are crucial for fostering sustainable and effective learner-centred pedagogical practices in the digital age.

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