Leveraging DTH Technology For Digital Education: A Case Study Of Higher Education In Haryana

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Abstract

The Covid-19 pandemic significantly disrupted higher education systems globally. In India, the sudden transition to online education posed challenges, particularly in states with diverse socio-economic landscapes such as Haryana. This study examines the digital transformation of higher education in Haryana during the pandemic, with a focus on the use of Direct-to-Home (DTH) technology and e-content delivery through the Utkarsh Higher Education channel and Jio TV. The paper investigates students' perceptions, identifies challenges faced during the transition, and suggests improvements for future digital learning initiatives. Data were collected via an online survey of undergraduate Geography students across Haryana. The findings highlight both achievements and limitations of the digital approach and offer recommendations to enhance accessibility and pedagogical quality in the post-pandemic era.

Keywords: Higher Education, DTH Technology, Online Education, Covid-19, Flipped Classroom, India.

Introduction

The Covid-19 pandemic forced higher education institutions worldwide to adopt online learning approaches to ensure educational continuity (Edges, 2020). In India, both central and state governments initiated several measures to promote digital infrastructure in line with UNESCO's vision of 'learning never stops.' In Haryana, the Department of Higher Education implemented various digital learning strategies, including online platforms and broadcast solutions through DTH technology. Faculty across multiple disciplines created e-content to bridge the learning gap.

Objectives

This study aims to: 1. Assess the use of digital technology, specifically DTH technology, in delivering higher education content.

2. Examine whether e-content reached underserved regions of

Haryana.
3. Evaluate students' satisfaction with the content and delivery of online lectures.
4. Identify potential gaps in the delivery of e-content and recommend future improvements.

Methodology

This cross-sectional study examines the use of DTH technology for delivering undergraduate Geography content in Haryana. Faculty development programs were conducted to equip teachers with skills in online pedagogy. Asynchronous and synchronous teaching modes were employed.

Data Collection

An online survey was administered via Google Forms from October to December 2020. Given the author's role as Nodal Officer for Geography, the study focused on this subject. A total of 230 responses were received from undergraduate students across Haryana.

Data Analysis

The Geography faculty prepared 69 YouTube videos with the support of 20 resource persons for Undergraduate students . Tables 1 & 2 summarize syllabus coverage and the number of video lectures. Lectures were scheduled across six days of the week by semester.

Table 1: Number of Video Lectures Prepared (Geography)

Class(Under-graduate Classes)	Number of Video Lectures
BA I	24
BA II	22
BA III	23
Total	69

Source: Primary data collected by the author .

Table 2: Class-wise Percentage of Syllabus Covered in Geography

Semester	E-CONTENT Platform	% of Syllabus Covered
BA I (First Semester)	CEC + DTH	38+62=100%
BA II (Third Semester)	CEC + DTH	34+63=97%
BA III (Fifth Semester)	CEC + DTH	23+74=97%

CEC-stands for Consortium for Education Communication

DTH-Direct to Home Technology
Source: Primary data collected by the author .

Findings

The study is based on the primary data and the objective is to examine the use of DTH technology among the students. The survey indicated significant gender-based differences in technology use.

Table 3: Infrastructure Facility Used by Students

Students	MOBILE	% using mobile	TV	% using TV	TOTAL
Boys	40	17	00	00	40
Girls	181	78.6	09	3.9	190
Total	221	95.7	09	3.9	230

Source: Author's own compilation based on primary data collected via questionnaire survey (October–December 2020).

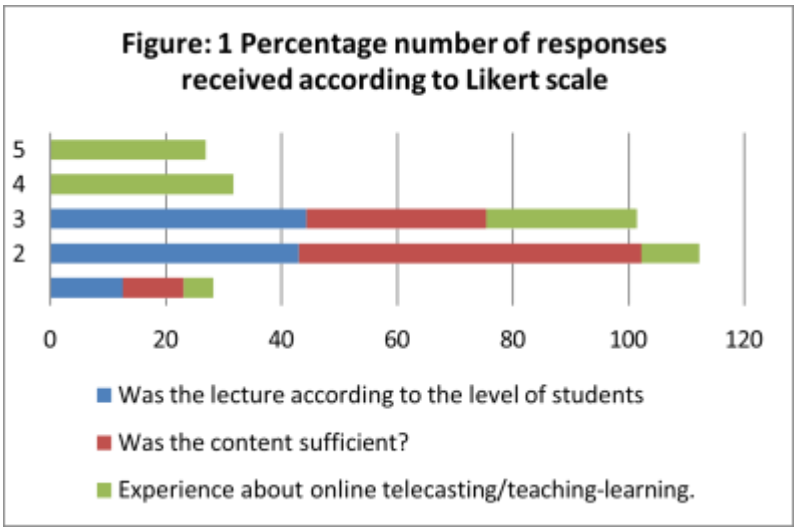
Most students used mobile devices to access content. Student responses indicated general satisfaction with the content and delivery of video lectures. However, barriers such as poor internet connectivity, limited device access, and digital literacy challenges are there. It can be observed that the reach of education services in the form of e-content could not be ensured to all the students. "With the current approach in HE and without concrete imitativeness to overcome the digital divide, the socio-economic, cultural, ethnic and gender gaps will grow."(Sims elat.2008)

Table 4: Percentage Number of Responses Received According to Likert scale

Variables/Scale grading	1	2	3	4	5
Was the lecture according to the level of students	13	43	44	NA	NA
Was the content sufficient?	10	59	31	NA	NA
Experience about online telecasting/teaching-learning	5	10	26	32	27

Source: Author's own compilation based on primary data collected via questionnaire survey (October–December 2020).

Figure 1: Percentage number of responses received according to 5-point Likert scale



While most students found the lectures appropriate and sufficient, barriers such as poor internet connectivity, limited device access, and digital literacy challenges remain there.

Discussion:

The study demonstrates substantial efforts by Haryana's Department of Higher Education to digitize education. However, the digital divide continues to affect equitable access to education. Improved infrastructure, enhanced faculty training, and diversified delivery methods are essential.

Conclusion:

Haryana's transition to digital learning showcased resilience and innovation, but significant challenges persist. Future initiatives should integrate modular video content, interactive learning, and robust assessment mechanisms. Faculty must be trained in emerging pedagogical models, as National Educational Policy needs digitized of education, and online education also provides flexibility.

Future Implications:

Adoption of flipped classroom models combining video lectures, quizzes, and collaborative activities be implemented. Expanded faculty training in digital pedagogy must be there as 4-quadrant approach , recommended by UGC on SWAYAM PORTAL also. Increased investment in rural digital infrastructure be there . Use of LMS platforms to provide consistent access to e-content. There should be regular feedback collection and evaluation to inform continuous improvement. . "The form, role and function of higher

education must be rethought and reconstructed for post-pandemic recovery, and all actors in higher education must be involved in the debate about their future"(Williamson, 2021).

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References:

1. Edges, C. (2020, June 26). How is India's education sector coping with the pandemic? Critical Edges.
2. Keengwe, J., & Kidd, T. T. (2010). Towards best practices in online learning and teaching in higher education. MERLOT Journal of Online Learning and Teaching, 6(2), 533–541.
3. Kim, K.-J., & Bonk, C. J. (n.d.)(2006)The future of online teaching and learning in higher education: The survey says… Educause Quarterly, 29(4).
4. Service, T. N. (n.d.). (2020)Covid-19 crisis: Haryana Education Dept to broadcast educational content on AIR daily. Tribune India.
5. Sims, R., Dobbs, G., & Hand, T. (2008). Enhancing quality in online learning: Scaffolding planning and design through proactive evaluation. Distance Education, 29(1), 43–58.
6. Williamson, B. (2021, February 10). Pandemic privatization and digitalization in higher education. Code Acts in Education.