

Content Analysis of YouTube Videos in Library and Information Science Education

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ABSTRACT

Online videos have become integral to daily life and are increasingly used for educational purposes. As a prominent platform, YouTube hosts numerous instructional videos supporting self-study and academic activities. This study analyzes YouTube videos related to Library and Information Science (LIS) published by four Indian institutions: CEC, EPGP, IGNOU, and NIOS. Using Webometrics Analyst Software, metadata from 100 randomly selected videos was extracted and analysed. The study identifies the top ten videos based on viewer engagement metrics such as views, likes, and comments. Findings reveal that over 80% of the videos have an average duration of 20 minutes, catering to typical viewer preferences. Additionally, 96% of the videos are licensed under YouTube's standard terms, with 4% under Creative Commons licensing, exclusively attributed to NIOS. The results highlight the impact of these videos in LIS education and offer insights into their content characteristics and user engagement.

KEYWORDS: Content analysis, LIS, YouTube, Instructional videos, WAS, API, Videos.

1. INTRODUCTION

Social media platforms like Facebook, Twitter, and Instagram have revolutionized global information sharing. Among these, YouTube stands out as a leading video-sharing platform, experiencing rapid growth in usage across all age groups. Established in 2005 and acquired by Google in 2006, YouTube has become one of the most visited websites globally, hosting millions of user-generated videos across diverse categories, including instructional, educational, tutorial, and advertisement content. According to YouTube (2022), nearly one-third of web users spend billions of hours annually watching videos on the platform, resulting in billions of views. Its versatility and accessibility have earned YouTube a reputation as a "second teacher" for many users (Stellefson et al., 2014).

In the field of education, YouTube is a valuable tool for hosting instructional content, facilitating self-directed learning and enhancing academic activities. This study focuses on analyzing YouTube videos related to Library and Information Science (LIS) in India, uploaded by four prominent institutions: the Consortium for Educational Communication (CEC), e-PG Pathshala (EPGP), Indira Gandhi National Open University (IGNOU), and the National Institute of Open Schooling (NIOS). By evaluating the metadata and engagement metrics—such as views, likes, and comments—of these instructional videos, this study aims to identify the top ten most impactful videos and provide insights into the characteristics that contribute to their effectiveness.

2. LITERATURE REVIEW

Numerous studies have examined YouTube videos and their engagement metrics, such as views, likes, and comments, across various fields. However, research on instructional videos within the domain of Library and Information Science (LIS) remains limited. While the interest in analyzing educational videos dates back over a decade, most studies have focused on fields like medicine, communication, and technology.

Content analysis of YouTube videos has gained significant attention in other disciplines. For instance, Ajumobi et al. (2016) analysed instructional videos on bowel preparation for surgery, while Basch et al. (2015) explored mammography-related videos, noting that professionally produced videos often provide more reliable information but receive fewer comments than consumer-generated content. Similar studies by Basch et al. (2014, 2018), Covolo et al. (2017), and Yoo and Kim (2012) investigated the use of YouTube for public health education, addressing topics such as colonoscopy preparation, vaccination awareness, and obesity.

In academic contexts, Kousha et al. (2012) evaluated the role of YouTube videos in research communication and Lena and Dindarolu (2018) assessed the quality of orthodontic treatment videos. These studies highlight the platform's potential as an educational resource but also underscore the variability in content quality.

The field of LIS has seen limited but noteworthy applications of content analysis. Harinarayana & Vasantha Raju (2010) examined Web 2.0 features in university library websites, identifying underutilized tools like wikis and vidcasts. Nagesh & Chandrashekara (2016) analyzed engineering college library websites, recommending regular evaluation of design, accessibility, and content quality. Despite these contributions, LIS-related instructional videos on YouTube have not been extensively studied.

This study aims to address this gap by analyzing instructional videos related to LIS focuses on metadata and user engagement metrics such as views, likes, and comments. By evaluating 100 videos from Indian institutions—CEC, EPGP, IGNOU, and NIOS—this research seeks to identify the top ten most impactful videos and provide insights into their characteristics, thereby contributing to the limited body of knowledge on LIS instructional content

3. METHODOLOGY

This study employed Webometrics Analyst software to extract metadata from YouTube videos, using the YouTube Application Programming Interface (API v3) for data retrieval. The analysis focused on key variables, including views, duration, likes, license type, dimensions, definition, and authorship. Video titles, descriptions, and user comments were manually verified to ensure relevance and accuracy. A total of 100 videos were randomly selected,

representing four Indian institutions: the Consortium for Educational Communication (CEC) with 12 videos, e-PG Pathshala (EPGP) with 54 videos, Indira Gandhi National Open University (IGNOU) with 30 videos, and the National Institute of Open Schooling (NIOS) with 4 videos.

The data collection process consisted of three steps:

- Identification of relevant institutions offering Library and Information Science (LIS) courses on the SWAYAM platform.
- Selection of LIS-specific videos and extraction of metadata and user comments.
- Detailed analysis of variables such as captions, category ID, channel ID, comment count, duration, like count, and view count using Webometrics Analyst software and MS Excel.

By focusing exclusively on videos produced by the four institutions, this methodology ensured a targeted analysis of instructional content in LIS.

4. STUDY LIMITATIONS

This study has several limitations. First, the analysis was restricted to LIS videos uploaded by four Indian institutions—CEC, EPGP, IGNOU, and NIOS—potentially excluding relevant content from other sources. Additionally, the metadata analyzed is current up to September 2023; subsequent changes or newly uploaded videos are not accounted for, which may affect the findings over time. The inclusions of only English-language videos also introduce a potential bias, as high-quality LIS videos in other languages were excluded. Lastly, the reliance on searches based solely on institutional channels may have overlooked videos related to LIS from other creators or platforms.

5. RESULTS

A total of 100 videos, randomly selected from four institutions were analysed based on their metadata and engagement metrics. These videos, published between 2016 and 2021, were categorized into two periods: 2016–2018 and 2019–2021, to assess changes in production during the COVID-19 pandemic. As shown in Table 1, the number of videos increased significantly during the 2019–2021 period, particularly for EPGP (54 videos) and IGNOU (27 videos), indicating heightened demand for institutional educational content during the pandemic.

Table 1: Characteristics of the videos

Item	CEC (n=12)	EPGP (n=54)	IGNOU (n=30)	NIOS (n=4)	Total (n=100)
Video characteristics					
Year uploaded					
2016-2018	8 (62%)	0 (0%)	3 (23%)	2 (15%)	13 (13%)
2019-2021	4 (5%)	54 (62%)	27 (31%)	2 (2%)	87 (87%)
Number of views					
Total	14023	13614	24543	3825	56005
Mean	1168.58	252.11	818.1	956.25	14001.25
Median	998.5	98	363	756	13818.5
Standard Deviation	950.00	424.77	1023.91	727.05	8462.37

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Item	CEC (n=12)	EPGP (n=54)	IGNOU (n=30)	NIOS (n=4)	Total (n=100)
Video likes					
Total	74	276	417	81	848
Mean	6.16666667	5.111111111	13.9	20.25	212
Median	3.5	2	6.5	19.5	178.5
Standard Deviation	6.92601595	9.351958057	21.50918008	14.885675	165.6562706
Video comments					
Total	14	1	28	9	52
Mean	1.16666667	0.018518519	0.933333333	2.25	13
Median	0	0	0	2.5	11.5
Standard Deviation	1.52752523	0.136082763	1.529780993	0.9574271	11.34313302
Video quality					
Total	12	54	30	4	100
Mean	6	27	15	2	25
Median	6	27	15	2	21
Standard Deviation	1.41421356	18.38477631	0	2.8284271	22.18107301
Video license type					
Total	12	54	30	4	100
Mean	6	27	15	2	25
Median	6	27	15	2	21
Standard Deviation	8.48528137	38.18376618	21.21320344	2.8284271	22.18107301
Category IDs					
Total	12	54	30	4	100
Mean	6	27	15	2	25
Median	6	27	15	2	21
Standard Deviation	8.48528137	38.18376618	15.55634919	2.8284271	22.18107301

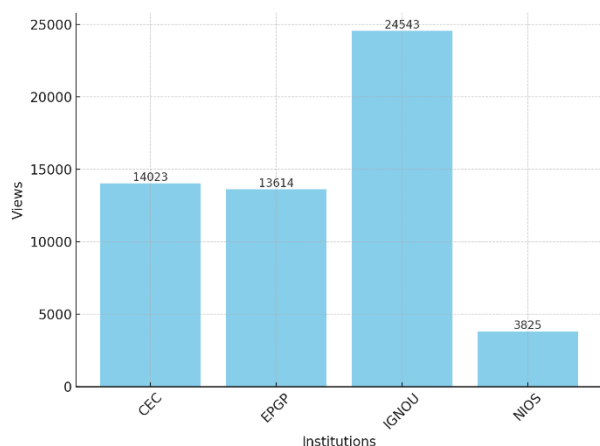


Figure 1: Number of Views by Institution

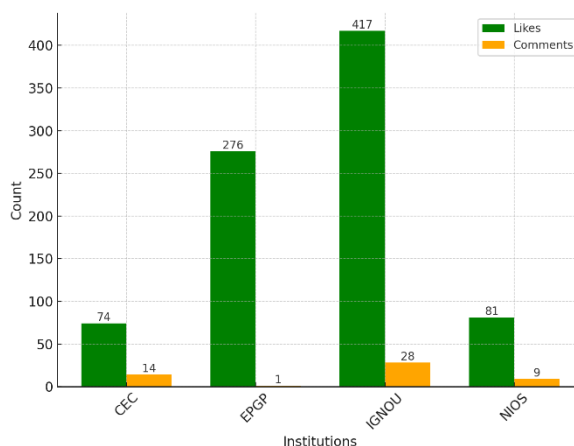


Figure 2: Likes and Comments by Institution

5.1. Engagement Metrics: Likes, Views, and Comments: Table 1 and Figures 1 and 2 illustrate the engagement levels of videos across the four institutions. IGNOU videos received the highest engagement, with 24,543 views, 417 likes, and 28 comments, significantly outperforming the others. EPGP videos followed with 13,614 views and 276 likes but had only 1 comment, suggesting limited interactive engagement. CEC and NIOS videos had moderate views and likes; with NIOS videos standing out for higher average like (20.25 per video) despite fewer upload. These findings highlight IGNOU's dominance in engagement metrics, likely attributed to its established reputation, broader audience reach, and potentially higher content relevance.

5.2. Video Quality: Out of the 100 videos analysed, 66 were in high definition (HD) and 34 in standard definition (SD). The breakdown by institution shows that EPGP contributed the most HD videos (40), followed by CEC (7) and IGNOU (15). NIOS uploaded all its videos in HD. While HD videos are generally more visually appealing, there was no clear correlation between video quality and engagement levels in this dataset.

5.3. Video License Types: Most videos (96%) were published under YouTube's standard license, with only 4% (all from NIOS) licensed under Creative Commons (CC BY). The use of CC BY licenses by NIOS enhances content reusability and accessibility, providing a model for other institutions to consider.

5.4. Video Length: Video duration was a significant factor in viewer engagement. Approximately 80% of the videos were under 20 minutes long, garnering a total of 35,199 views. Videos between 15 and 30 minutes were the most watched, with 31,284 views, while longer videos (30–60 minutes) had fewer views, indicating a preference for shorter, more concise content.

5.5. Category IDs: The analysis of YouTube Category IDs revealed an interesting discrepancy: 92% of the videos were classified under "People & Blogs," while only 8% were tagged as "Education." This misclassification may affect discoverability and user expectations. NIOS was the only institution to classify all its videos under "Education," suggesting a more strategic approach to categorization.

5.6. Video Contributions: The institutions contributed a total of 687 videos to YouTube, with EPGP accounting for the majority (369 videos, 54%). IGNOU followed with 208 videos (30%), while CEC and NIOS contributed 86 (13%) and 24 (3%), respectively. Despite EPGP's higher contribution, IGNOU videos had greater viewer engagement, emphasizing the importance of quality and relevance over quantity.

5.7. Video Growth: The majority of videos (48%) were uploaded in 2020, coinciding with the shift to online education during the COVID-19 pandemic. Video uploads increased consistently from 2019 to 2021, reflecting heightened reliance on online platforms for academic content delivery. However, a slight decline in the rate of uploads was observed in 2021, particularly for EPGP.

5.8. Channel IDs: The analysis identified 17 unique channel IDs across the institutions, with IGNOU accounting for the highest number (10). EPGP had the most videos per channel (27 on average), followed by NIOS (4). Multiple channels for IGNOU and CEC may have diluted viewer engagement, while NIOS’s single-channel approach likely ensured a more consolidated audience.

6. TOP TEN VIDEOS BASED ON VIEWS, LIKES AND COMMENTS

To achieve the study's objectives, the collected variables were analysed from multiple perspectives, focusing on the top ten videos in terms of views, likes, and comments. The results provide insights into the performance of videos from four institutions—CEC, EPGP, IGNOU, and NIOS—and highlight key trends in viewer engagement.

Table 2: Top 10 Most Viewed Videos across Institutions

SN	Institution	Video title	View Count
1	IGNOU	Stock Verification	4971
2	CEC	Web Content Development	3605
3	EPGP	Different sections of a modern library and their functions	2734
4	IGNOU	Primary Information Sources	2588
5	CEC	P08 M03	2200
6	IGNOU	Categorization of Information Sources	2172
7	NIOS	Lesson 9 Organization of Library Material - Concept, Need and Purpose	1927
8	IGNOU	Library Records	1751
9	CEC	P08 M05	1477
10	IGNOU	Role & Responsibilities of Library Staff	1454

The top ten videos based on view counts are presented in Table 2. IGNOU leads with the highest number of videos in the top ten (5), followed by CEC (3). EPGP and NIOS each have one video on the list. IGNOU's "Stock Verification" video ranks first with 4,971 views, followed by CEC's "Web Content Development" (3,605 views) and EPGP's "Different sections of a modern library and their functions" (2,734 views). This dominance by IGNOU suggests a strong alignment between its content and audience needs. CEC's technical topics, such as "Web Content Development," also perform well, indicating demand for specific skill-based content. In contrast, EPGP and NIOS have fewer top-ranked videos, suggesting a need for these institutions to enhance content visibility or relevance.

Table 3: Top 10 Most Liked Videos across Institutions

SN	Institution	Video title	Like Count
1	IGNOU	Stock Verification	110
2	EPGP	Different sections of a modern library and their functions	62
3	IGNOU	Weeding in Libraries	43
4	NIOS	Lesson 9 Organization of Library Material - Concept, Need and Purpose	38
5	IGNOU	Library Records	36

6	IGNOU	Acquisition of Serials	34
7	IGNOU	Role & Responsibilities of Library Staff	29
8	EPGP	M-05. Classical Law of Bibliometric	26
9	NIOS	Lesson 15A Library System and Management	26
10	CEC	Web Content Development	24

Table 3 lists the top ten videos based on likes. IGNOU again leads with five entries, reflecting its popularity and audience appreciation. Notably, the "Stock Verification" video received the most likes (110), followed by EPGP's "Different sections of a modern library and their functions" (62 likes) and IGNOU's "Weeding in Libraries" (43 likes). NIOS contributed two videos to the list, with "Lesson 9 Organization of Library Material" receiving 38 likes. The performance of NIOS and EPGP indicates that even smaller institutions can achieve impact with targeted topics. However, the lack of accompanying comments on EPGP's videos suggests limited interactive engagement despite high viewer appreciation.

Table 4: Top 10 Most Commented Videos across Institutions

SN	Institution	Video title	Comments Count
1	IGNOU	Stock Verification	5
2	IGNOU	Role & Responsibilities of Library Staff	5
3	IGNOU	Weeding in Libraries	4
4	CEC	MOOCs DL 13 Open Access and Digital Library	4
5	NIOS	Lesson 9 Organization of Library Material - Concept, Need and Purpose	3
6	IGNOU	Acquisition of Serials	3
7	NIOS	Lesson 15A Library System and Management	3
8	CEC	P08 M03	3
9	CEC	P08 M06	3
10	IGNOU	Library Records	2

Table 4 showcases the top ten videos based on comments. IGNOU leads again, with five videos among the top ten. The "Stock Verification" video and "Role & Responsibilities of Library Staff" each received 5 comments, demonstrating their ability to prompt viewer interaction. CEC contributed three videos to this list, and NIOS added two, including "Lesson 9 Organization of Library Material," which received consistent engagement across metrics. While IGNOU dominates, the overall number of comments is low (maximum of 5 per video), indicating limited interactivity. This suggests a potential area for improvement in fostering discussions or engagement among viewers.

7. FINDINGS

Based on the analysis of 100 randomly selected YouTube videos from four institutions (CEC, EPGP, IGNOU, and NIOS), the study provides the following key findings:

7.1. Dominance of IGNOU

- **Viewer Engagement:** IGNOU videos consistently outperformed others in terms of views, likes, and comments. For example:
- IGNOU's "Stock Verification" video was the most viewed (4,971 views), liked (110 likes), and commented (5 comments).
- Among the top 10 videos across all metrics, IGNOU contributed 5 entries, highlighting its strong alignment with viewer preferences.
- **Content Strategy:** IGNOU's broad reach and consistent engagement metrics suggest effective content strategies, such as producing relevant and high-quality educational material.

7.2. Performance of Other Institutions

- **CEC:** Contributed 3 videos to the top 10 lists for views and comments. Videos like "Web Content Development" (3,605 views) demonstrate the potential for technical content to attract viewers.
- **EPGP:** Despite contributing the highest number of videos (54 out of 100), EPGP's engagement metrics were modest. While its video "Different sections of a modern library and their functions" received 62 likes, the lack of comments highlights limited interactive engagement.
- **NIOS:** The smallest contributor in terms of uploads, but its strategic use of Creative Commons licenses and targeted topics (e.g., "Lesson 9 Organization of Library Material") allowed it to achieve notable impact in likes and comments.

7.3. Viewer Preferences

- **Video Length:** Shorter videos were more popular, with 80% under 20 minutes garnering 35,199 views. Videos between 15 and 30 minutes received the highest engagement.
- **Video Quality:** High-definition (HD) videos dominated, with 66 out of 100 videos produced in HD. However, there was no clear correlation between video quality and engagement.
- **Licensing:** 96% of videos were licensed under YouTube's standard terms, while NIOS's exclusive use of Creative Commons licenses enhanced content reusability and accessibility.

7.4. Misclassification of Category IDs

- 92% of the videos were categorized as "People & Blogs" rather than "Education," potentially reducing their discoverability and relevance for academic audiences. NIOS was the only institution to use the correct "Education" category.

7.5. Video Contributions and Growth

- **Institutional Contributions:** EPGP produced the most videos (369 out of 687 total across institutions), followed by IGNOU (208 videos). However, IGNOU videos consistently outperformed others in engagement metrics, emphasizing the importance of quality over quantity.
- **COVID-19 Impact:** Video uploads peaked during the COVID-19 pandemic (2019–2021), reflecting a shift to online education. IGNOU and EPGP saw significant increases in content production during this period.

7.6. Engagement Trends

- **Top 10 Videos:** Across all metrics (views, likes, and comments), IGNOU dominated, indicating its ability to produce impactful content. Topics like "Stock Verification" and "Web Content Development" garnered the most engagement, reflecting a demand for practical and technical subjects.
- **Limited Interaction:** Comments were generally low across all institutions, with a maximum of 5 per video. This indicates limited interactivity and opportunities for fostering discussions among viewers.

CONCLUSION

This study analysed 100 instructional YouTube videos related to Library and Information Science (LIS) from four Indian institutions—CEC, EPGP, IGNOU, and NIOS—to evaluate their engagement metrics and content characteristics. The findings revealed that IGNOU consistently outperformed other institutions in terms of views, likes, and comments, demonstrating the importance of content relevance and audience-centric strategies in driving engagement. Videos between 15 and 30 minutes in length garnered the highest viewer engagement, aligning with audience preferences for concise and focused content. Although high-definition videos dominated the dataset, video quality alone did not significantly influence engagement metrics.

A notable issue identified was the misclassification of 92% of the videos under "People & Blogs" instead of "Education," which likely impacted their discoverability. Additionally, NIOS's adoption of Creative Commons licenses emerged as a best practice for enhancing content accessibility and reusability. The increased video production during the COVID-19 pandemic highlights the growing reliance on online platforms for academic content delivery.

The study underscores the need for institutions to prioritize quality over quantity, as exemplified by IGNOU's success in producing fewer but impactful videos. Proper categorization of videos under "Education" can improve visibility, while fostering interactive engagement through comments and discussions can enhance the educational value of the content. Future research could explore the role of video promotion strategies, audience demographics, and comparative analyses across different languages or regions to gain deeper insights into LIS instructional videos. Overall, this study demonstrates the potential of YouTube as a powerful platform for LIS education and offers actionable recommendations for institutions seeking to maximize the impact of their instructional content.

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