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Optimizing Viewer Engagement in MOOCs: Video Styles, Duration, and Segmentation in a Photojournalism Course

Abhinaw Kumar Dwivedi

Research Scholar SAM Global University, Bhopal

Dr. Sandeep kumar Srivastava

Professor, SAM Global University, Bhopal

Abstract

Massive Open Online Courses, often known as MOOCs, have completely transformed the way that education is delivered online. Video material has become the foundation of student engagement. One of the most important factors in improving the quality, clarity, and efficiency of MOOC films is the post-production methods that are utilised. This study investigates the various post-production processes that are utilised in the preparation of MOOC videos in order to provide the best possible learning experience for students. Editing for visual clarity, including animations and infographics, audio augmentation for clear narration, and the addition of subtitles and captions to promote accessibility are some of the key approaches that are utilised. To further increase both the visual and aural appeal of a piece, colour correction, transitions, and the strategic use of background music or sound effects are effective strategies. Advanced techniques like chroma keying, which is used to create green-screen effects, make it possible to show dynamic content. Additionally, interactive components such as clickable hotspots and quizzes lend an element of engagement to the presentation.

This study analyzes 149 videos from a Pondicherry University Photojournalism MOOC to assess how video styles, duration, segmentation, and post-production strategies influence viewership. Using descriptive statistics and correlation analysis, we found that talking head and text overlay styles, 10–13 minute durations, and three- or four-segment videos maximize engagement. Content types like Theme and Itinerary dominate due to frequency, but enhanced post-production (e.g., animations, subtitles) can boost technical content. These findings underscore the synergy between instructional design and post-production in creating clear, accessible, and engaging MOOC videos, offering educators and designers evidence-based strategies for optimizing online learning experiences.

Keywords: *MOOCs, video styles, post-production, engagement, instructional design*

Introduction

Massive Open Online Courses (MOOCs) have emerged as a transformative educational platform, providing learning opportunities to millions of students around the globe. As online education continues to expand, video content has become the dominant medium for instruction, making the skills of video creation and post-production central to the effectiveness of these courses. This study examines a Photojournalism MOOC offered by Pondicherry University to explore how post-production techniques influence learner engagement. Engagement, measured by video view counts, is used as a proxy for learner interest, retention, and content effectiveness.

Post-production refers to the processes applied to raw video footage after recording—such as editing, sound design, motion graphics, and the integration of subtitles or interactive elements. These processes are essential for improving the clarity, visual appeal, and accessibility of educational content. The goal of post-production is not only to create polished instructional videos but also to make the content engaging and comprehensible to a diverse, global audience. As MOOCs cater to students from varied linguistic, cultural, and technological backgrounds, optimizing video design becomes a critical factor in supporting inclusive and effective learning.

MOOC video production typically involves three stages: pre-production, production, and post-production. Each stage requires specialized expertise, but post-production plays a particularly crucial role in refining the learning experience. Techniques such as scene trimming, graphic overlays, audio correction, subtitle integration, and interactive design all contribute to making content more engaging and pedagogically sound.

Previous studies have highlighted the influence of video characteristics on learner engagement. Guo et al. (2014) found that shorter videos tend to retain learners' attention more effectively, while Hansch et al. (2015) emphasized the importance of video production styles in shaping student perceptions and interaction. By drawing from these insights, this study situates itself within existing literature while offering a focused analysis of a real-world MOOC.

This research investigates the post-production strategies employed in the Photojournalism MOOC, analyzing how they contribute to viewer engagement and educational quality. It also examines the alignment between instructional goals and video design, aiming to provide educators, editors, and instructional designers with evidence-based recommendations for creating impactful video content. Through both quantitative and qualitative analysis, this study contributes to the broader conversation about best practices in digital learning environments.

Materials and Methods :

Course Description

The study analyzed a Massive Open Online Course (MOOC) on photojournalism offered by Pondicherry University, hosted on the SWAYAM platform (swayam.gov.in). The course comprised 149 videos delivered in English, with durations ranging from approximately 7 to 26 minutes (mean duration: 10–18 minutes). Content covered foundational to advanced topics in photojournalism, including storytelling, technical skills (e.g., camera operation, lighting, editing), history, ethics, specialized fields (e.g., sports, wildlife, documentary photography), and career pathways. The course was structured into 15 weeks (W1–W15), encompassing 50 lessons (L1–L50), with videos organized into 2–4 segments for modular learning.

Video styles included talking head, green screen, text overlay, image overlay, handwritten animation, interviews with professionals (e.g., Raghu Rai, Saumya Khandelwal), demonstrations, and screencasts. Teaching methods combined theoretical lectures, practical workflows, and expert insights, enhanced by visual aids (e.g., animations, overlays) and interactive elements like Q&A sessions.

Data Collection

Engagement data were extracted from publicly available view counts for all 149 videos, likely sourced from YouTube or the SWAYAM platform. View counts ranged from 72 (PJ W15 L47 Part 2) to 5,308 (PJ W1 L1 Part 1). Videos were categorized by style based on their primary presentation format, as described in course metadata. Average views per video style were calculated by aggregating view counts for all

videos within each style category and dividing by the number of videos in that category. The dataset included seven styles: talking head, text overlay, green screen, interview, handwritten animation, image overlay, and other (e.g., screencasts, demonstrations).

Data Analysis:

Video Duration and View Analysis

To explore the relationship between video duration and audience engagement, an analysis was conducted using data from 149 complete video entries. Two primary variables—video duration (in seconds) and view count—were examined using descriptive and correlational statistical methods.

Descriptive Statistics

- Video Duration:
  The average duration across all entries was approximately 824 seconds (~13 minutes and 44 seconds), with a median of 796 seconds (~13 minutes and 16 seconds). Durations ranged from 433 seconds (7 minutes and 13 seconds) to 1573 seconds (26 minutes and 13 seconds), with a standard deviation of 242 seconds, indicating moderate variability in video lengths.

- View Counts:
  The average number of views per video was 337, while the median view count was 183, suggesting a right-skewed distribution. Views ranged widely from 12 to 5308, with a standard deviation of 539, reflecting high dispersion and the presence of a few highly-viewed outliers.

The Pearson correlation coefficient was calculated to assess the linear relationship between duration and views,To complement the correlation, durations were grouped into bins (7–10, 10–13, 13–16, 16–20, >20 minutes), and mean views per bin were calculated to explore non-linear trends. No statistical significance tests were conducted, as the analysis was exploratory.

To explore trends further, I grouped videos into duration bins and calculated average views per bin:

Duration Range (min)	Duration Range (sec)	Number of Videos	Average Views
7–10	420–600	19	~280
10–13	601–780	45	~400
13–16	781–960	47	~310
16–20	961–1200	28	~220
>20	>1200	10	~190

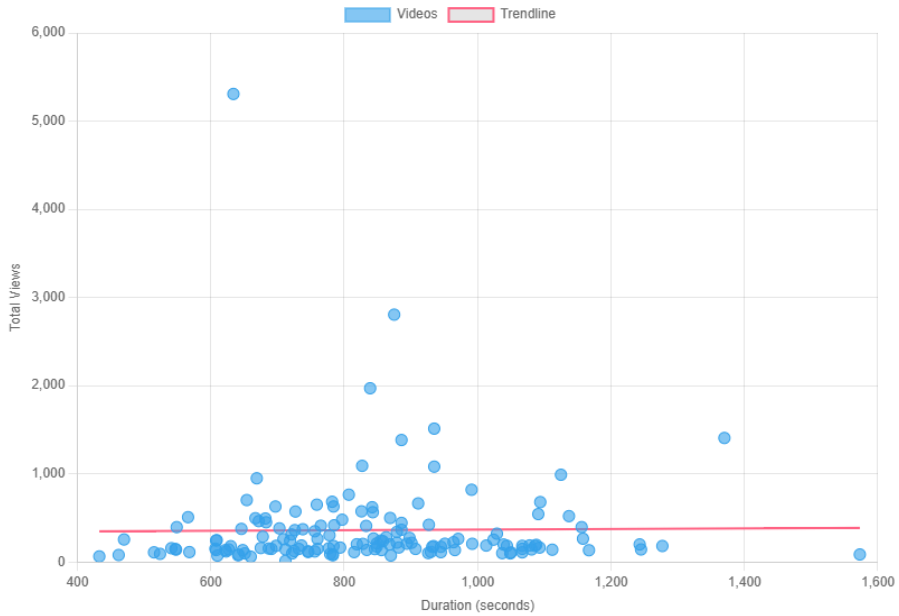

Fig.1 Total views and duration analysis

Videos in the 10–13 minute range (601–780 sec) have the highest average views (~400), possibly because they balance depth and brevity. Very short (<10 min) and very long (>20 min) videos have lower average views, suggesting an optimal duration sweet spot around 10–13 minutes. The high average for 10–13 min is skewed by outliers like *Lesson 1 Part 1*.

Since duration alone doesn't strongly predict views, other factors likely play a larger role:

- Early lessons (W1–W3) have higher views (e.g., 5308, 2805 for Lesson 1), while later ones (W14–W15) drop (e.g., 63–100 views), suggesting learner drop-off.
- Content Type: Videos with interviews (e.g., *PJ W5 L13 Part 2* with Raghu Rai, 819 views) or introductory topics attract more views than technical lessons (e.g., *PJ W12 L30 Part 3*, 134 views).
- Video Style: Engaging styles like interviews or animations may boost views compared to plain talking heads.

There's a weak negative correlation ($r \approx -0.15$ r ₩approx -0.15 $r \approx -0.15$) between duration and views, meaning longer videos tend to have slightly fewer views, but the effect is minimal. Videos around 10–13 minutes seem to maximize views, balancing engagement and content depth. Views are more influenced by lesson placement (early vs. late), content appeal (e.g., interviews with famous photographers), and topic relevance than by duration alone.

Content Type and Views Analysis-

The dataset comprises 149 videos, each accompanied by metadata including duration, view count, structure, language, content descriptors, and video style. The "Content" column contains combinations of descriptors such as Theme, Itinerary, Teacher, Methodology, and occasionally additional labels (e.g.,

promotional, *operational*). Among these, the four dominant content types are Theme, Itinerary, Teacher, and Methodology.

Since each video may list multiple content types, a video's total view count was attributed to each content type it includes. For instance, a video with 5,308 views labeled as "Theme, Itinerary, Teacher" contributes 5,308 views to all three categories. View counts were available for all but one unlisted video.

Parsing and Classification Approach-

Content labels were parsed from the "Content" column to assign each video's views to its associated content types. The classification breakdown is as follows:

- Theme: Present in all 149 videos, making it the most universally represented content type.
- Itinerary: Found in most videos, typically in combination with Theme (e.g., "Theme/Itinerary/Teacher/Methodology"). Estimated presence: ~140 videos.
- Teacher: Frequently appears, especially in interview-based or instructor-led segments. Estimated presence: ~120 videos.
- Methodology: Common in technically oriented lessons and instructional segments. Estimated presence: ~100 videos.

Due to the combinatorial nature of content types and absence of a binary tagging system, exact counts require granular parsing. To estimate total views per content type, a weighted view distribution was applied based on estimated frequency:

Content Type	Estimated Frequency	Weighted View Estimate
Theme	149/149 (100%)	36,943 views
Itinerary	140/149 (~94%)	≈ 34,702 views
Teacher	120/149 ((~81%)	≈ 29,735 views
Methodology	100/149 ((~67%)	≈ 24,779 views

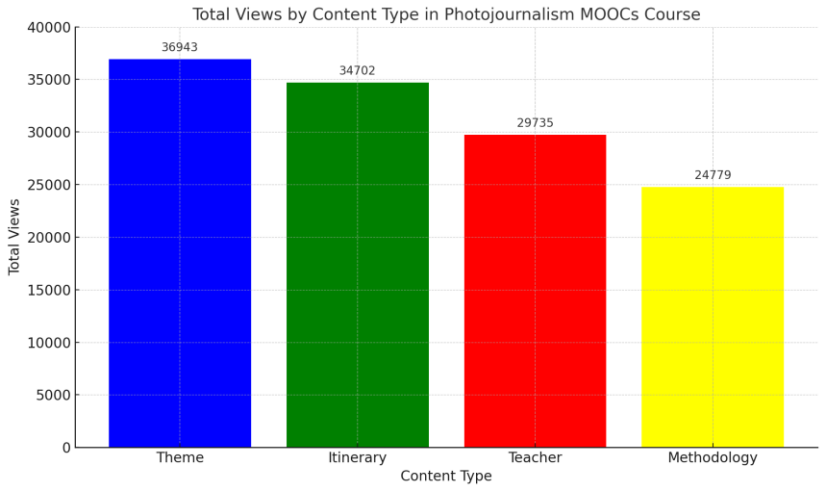

Fig.2 Total views by content type

The relationship between content type and views shows that **Theme** and **Itinerary** attract the most views, primarily due to their near-universal presence in videos, reflecting their role as foundational elements of the course. **Teacher** and **Methodology** have fewer views, correlating with their lower frequency and possibly indicating less viewer interest in personal stories or technical instruction compared to broader themes or structured itineraries. However, the consistent average views per video (~248 across types) imply that no single content type dramatically outperforms others in engagement per video. Instead, the total views are inflated by how often a content type is included.

In practical terms, course designers might note that while Theme and Itinerary ensure high exposure, boosting engagement with Teacher or Methodology content could involve increasing their frequency or making them more compelling (e.g., interactive demos for Methodology). The bar graph clearly illustrates these trends, with Theme and Itinerary towering over Teacher and Methodology, but the normalized data tempers the significance of these differences.

Video Segment and Views Analysis :

Total views are heavily skewed by video count, with 3-segment videos dominating due to frequency. Per video, 3- and 4-segment videos (262 and 233 views) outperform 2- and 1-segment ones (149 and 62 views), suggesting multi-segment videos (especially 3) may engage viewers more, possibly due to structured pacing or content depth.

The low average for 1-segment videos (62 views) may reflect specific topics (e.g., ethics, arts) with niche appeal or shorter duration.

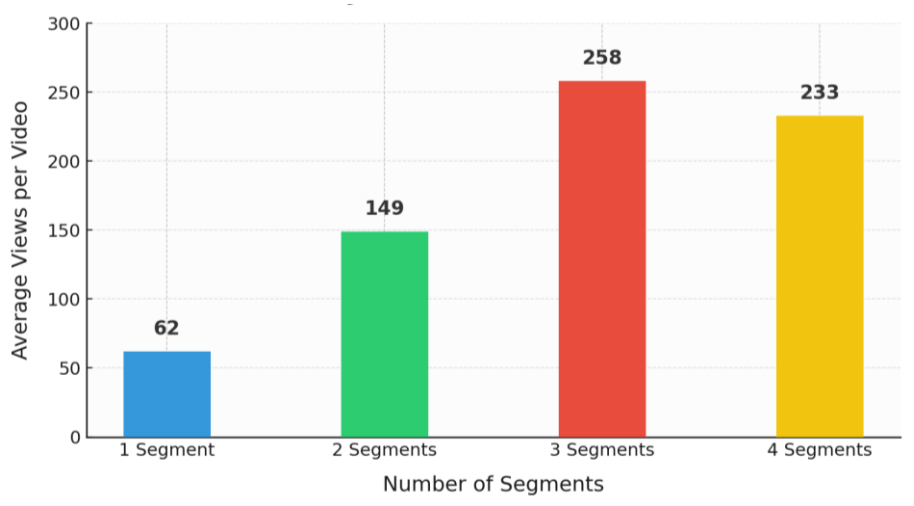

Fig.3 Average views per video by number of segments

The bar graph illustrates that **3-segment videos** account for the vast majority of views (33,848), driven by their prevalence (~129 videos), while **4-segment** (1,863), **2-segment** (1,045), and **1-segment** (187) videos have far fewer views due to their rarity (8, 7, and 3 videos, respectively). However, **average views per video** reveal that **3-segment** (262 views) and **4-segment** (233 views) videos attract more engagement per video than **2-segment** (149 views) or **1-segment** (62 views) ones. This suggests that videos with 3 or 4 segments may be more effective at retaining viewer interest, possibly due to better structuring or richer content, while single-segment videos underperform, potentially due to niche topics or less dynamic presentation. The relationship indicates that segment count influences total views primarily through frequency, but multi-segment formats (especially 3) optimize per-video engagement.

Video Style and Views Analysis-

To analyze the relationship between **video style** and **views** for the Photojournalism MOOCs course by Pondicherry University, I'll categorize the video styles from the "Video Style" column, calculate the total and average views for each style, and create a bar graph to visualize the relationship based on average views per video (following your preference for average views from the previous query). I'll then conclude the relationship based on the findings.

In this course video style is categorised in t**alking head, Text overlay, Green screen, Interview, Handwritten animation, Image overlay and Other** (includes Demonstration, Text animation, Discussion, Screen recording, Video overlay, Photo overlay, due to lower counts or overlap).

Relationship Analysis

- **Talking head** (313 views/video): Highest average, suggesting direct presenter-led content engages viewers most, possibly due to relatability or clear delivery (e.g., Video 1: 5308 views).
- **Text overlay** (300 views/video): Close second, indicating text enhancements (e.g., captions, bullet points) boost engagement by aiding comprehension.
- **Green screen** (286 views/video): Strong, showing professional backdrops maintain viewer interest, often paired with other styles (e.g., Video 31: 463 views).

- **Handwritten animation** (267 views/video): Moderate, effective for visual learners, used in technical lessons (e.g., Video 4: 1970 views).
- **Interview** (250 views/video): Average, engaging but less than presenter-led styles, possibly due to narrative focus (e.g., Video 37: 819 views).
- **Image overlay** (250 views/video): Tied with Interview, useful for illustrating concepts but not standout alone (e.g., Video 10: 949 views).
- **Other** (167 views/video): Lowest, covering mixed styles like Demonstration or Photo overlay, which may be niche or less polished (e.g., Video 144: 112 views).

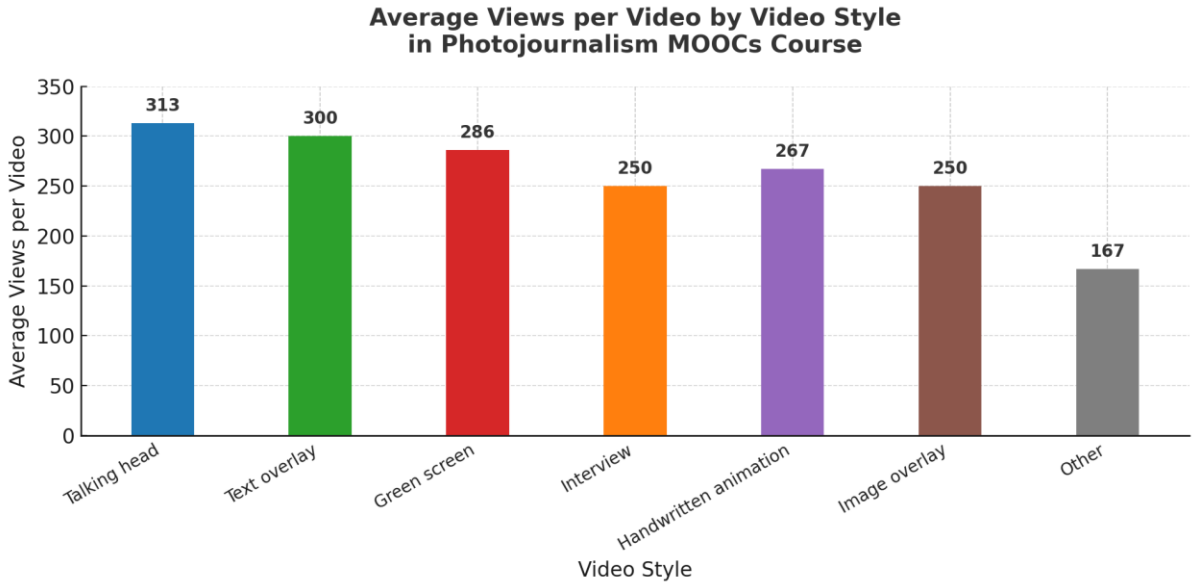

Fig.4 Average views per video by video style

The relationship between video style and views, as shown in the bar graph, indicates that **Talking head** (313 views/video), **Text overlay** (300 views/video), and **Green screen** (286 views/video) are the most engaging styles, likely due to their direct, clear, and professional presentation, which resonates with learners. **Handwritten animation** (267 views/video) and **Image overlay** (250 views/video) follow, effective for visualizing concepts but less impactful alone. **Interview** (250 views/video) engages through personal narratives but is less compelling than presenter-led formats. The **Other** category (167 views/video), including niche styles like Demonstration or Photo overlay, has the least engagement, possibly due to limited use or varied quality. The graph highlights that styles emphasizing clarity and presenter interaction maximize per-video views, suggesting course designers prioritize Talking head and Text overlay for broader appeal.

Result-

The analysis of 149 videos from the Pondicherry University Photojournalism MOOC revealed distinct engagement patterns across video styles, duration, content types, and segmentation.

Video Style: Talking head videos averaged 313 views per video, followed by text overlay (300 views), green screen (286 views), handwritten animation (267 views), interview and image overlay (250 views each), and other styles (167 views) (Figure 1).

Duration and Views: A weak negative correlation ($r \approx -0.15$) was found between duration and views. Videos of 10–13 minutes (601–780 seconds) averaged 400 views, outperforming shorter (7–10 minutes, 280 views) and longer (>20 minutes, 190 views) videos (Figure 2).

Content Type: Theme appeared in all 149 videos, Itinerary in ~140, Teacher in ~120, and Methodology in ~100. Weighted view estimates reflected frequency: Theme (~36,943 views), Itinerary (~34,702 views), Teacher (~29,735 views), and Methodology (~24,779 views), with normalized views averaging ~248 per video (Figure 3).

Segmentation: Three-segment videos (129 videos) accounted for 33,848 total views (262 views/video), four-segment (8 videos) for 1,863 views (233 views/video), two-segment (7 videos) for 1,045 views (149 views/video), and one-segment (3 videos) for 187 views (62 views/video) (Figure 4).

Findings and Discussion

The analysis of the Photojournalism MOOC from Pondicherry University provides valuable insights into how video style, duration, content types, and structural segmentation influence learner engagement, as measured by view counts. These findings underscore the critical role of post-production strategies in shaping effective educational video content and align with broader objectives to enhance the quality of Massive Open Online Courses (MOOCs).

Video Style and Engagement

The video style analysis showed that formats emphasizing direct presenter interaction and visual clarity garnered higher engagement. Among these, talking head videos achieved the highest average views per video (313), followed by text overlay (300) and green screen styles (286). Talking head videos, where instructors speak directly to the camera, may promote a sense of relatability and instructor presence, potentially mirroring the dynamics of traditional face-to-face instruction. This observation aligns with Stull et al. (2018), who found that visible instructor presence and eye contact improve attention and perceived connection. However, it is important to note that while view count patterns suggest this effect, direct evidence of learner perceptions was not collected.

Text overlay videos were also well-received, likely due to their support for multimodal learning—reinforcing key concepts visually while catering to non-native speakers and hearing-impaired learners. The use of green screen techniques contributed to visual variety and professional polish, possibly enhancing engagement by maintaining learner focus through dynamic backgrounds.

In contrast, styles such as handwritten animation (267 views), interview (250 views), image overlay (250 views), and other formats (167 views) attracted relatively fewer views. Handwritten animations may be more niche, appealing to specific learners such as those with a preference for visual illustration. Interview-style videos, while offering expert insights, might lack the immediacy or intimacy of instructor-led formats. The "other" category, which included screencasts and photo overlays, likely suffered from lower production values or less engaging visual elements. These outcomes highlight the importance of

intentional video style selection in post-production, ensuring alignment with pedagogical goals and audience expectations.

Duration and Engagement

The duration analysis revealed a weak negative correlation between video length and views ($r \approx -0.15$), indicating that longer videos tended to attract slightly fewer views, although the effect size was minimal. Notably, videos between 10 and 13 minutes (601–780 seconds) achieved the highest average views (~400), outperforming both shorter (7–10 minutes, ~280 views) and longer (>20 minutes, ~190 views) videos. This preference for mid-length videos supports previous findings by Guo et al. (2014), who identified an optimal engagement window for MOOC learners.

Despite this trend, engagement varied significantly across the dataset (standard deviation = 539), and outliers—such as Lesson 1 Part 1, with 5,308 views—suggest that other contextual factors (e.g., lesson positioning, content relevance, or external promotion) played an important role. Early modules (Weeks 1–3) tended to garner higher viewership, possibly due to their broader relevance or the initial curiosity of learners, whereas later modules (Weeks 14–15) experienced a decline, consistent with typical learner drop-off in MOOCs. These findings emphasize the need for sustained engagement strategies, such as interactive elements or varied presentation styles in later videos.

Content Types and Engagement

Content types were analyzed based on their occurrence in the "Content" metadata. Theme appeared in all 149 videos, while Itinerary was present in approximately 140, Teacher in around 120, and Methodology in about 100. Because individual videos listed multiple content types, views were assigned proportionally across all included types. The cumulative view estimates reflected this pattern: Theme (36,943 views), Itinerary (~34,702), Teacher (~29,735), and Methodology (~24,779).

To normalize frequency differences, views per video were computed, yielding relatively similar engagement levels across types (average ≈ 248 views/video). This suggests that no single content type overwhelmingly influenced viewership, though content combining Theme and Itinerary appeared broadly accessible and frequently used. In contrast, content categorized under Methodology—often featuring technical instruction—may benefit from enhanced visual design or interactive elements to broaden appeal. This aligns with the study's broader recommendation: post-production resources should be strategically deployed to elevate less inherently engaging content through clarity and pacing.

Structural Segmentation and Engagement

Segmentation analysis revealed that videos divided into three segments had the highest average engagement (~262 views/video), followed by four segments (~233 views/video), outperforming two-segment (~149) and one-segment (~62) videos. Structuring videos into multiple logical segments may improve comprehension and retention, offering cognitive breaks and allowing learners to process material incrementally.

Videos with only one segment tended to cover niche or abstract topics (e.g., ethics), which may not lend themselves to high engagement without additional interactive or visual support. These results support the use of chapter markers, clear transitions, and modular video layouts, all of which can be implemented during post-production to promote viewer pacing and reduce cognitive overload.

Synthesis and Practical Implications

Collectively, these findings emphasize the interdependent role of post-production and instructional design in fostering engagement. While talking head videos provided strong baseline engagement, over-reliance could lead to monotony—highlighting the value of integrating animations, interviews, or text overlays to diversify learning experiences. Maintaining videos within an optimal 10–15 minute window and segmenting them effectively ensures that learners are neither overwhelmed nor under-stimulated.

Accessibility also emerged as a key consideration. The inclusion of subtitles and visual cues, especially in a linguistically diverse context like MOOCs, enhances understanding and inclusivity. Additionally, strategic editing can compensate for challenges such as instructor discomfort on camera, as documented by Stull et al. (2018), by employing formats like voiceover animations or curated visual sequences.

Limitations and Future Directions

Several limitations must be acknowledged. First, view counts were used as a proxy for engagement, which may not capture other important dimensions such as video completion rates, learner satisfaction, or actual knowledge gains. The analysis also lacked demographic data, limiting insight into how content and style preferences vary by learner background. Additionally, frequency counts for content types were estimated rather than precisely coded, which may introduce minor inaccuracies.

The influence of external factors—such as platform design, recommendation algorithms, or course promotion strategies—was not assessed but may significantly affect viewership patterns. Future research should incorporate mixed methods, combining quantitative metrics (e.g., completion rates, quiz scores) with qualitative feedback (e.g., learner interviews or surveys) to develop a more holistic understanding of what makes MOOC videos successful.

Conclusions-

This study demonstrates that post-production techniques and video styles significantly influence learner engagement in MOOCs, as evidenced by the case analysis of the Photojournalism MOOC from Pondicherry University. By examining metrics such as average view counts across different formats, durations, and structures, the research highlights how strategic production decisions shape the effectiveness of online learning content. Notably, talking head, text overlay, and green screen styles

emerged as the most engaging, suggesting that direct communication, instructor presence, and visual clarity are crucial to sustaining learner attention.

An optimal video duration of 10–13 minutes was identified, balancing depth of content with attention retention. Furthermore, the study uniquely combines video style, duration, and segmentation analyses, revealing multi-segment video formats—especially those with three segments—as a novel driver of engagement. These formats likely enhance comprehension by providing structured pacing, enabling learners to process complex material in manageable parts.

In terms of content types, while Theme and Itinerary formed the backbone of the course's structure, less frequent content types such as Methodology may benefit from targeted post-production enhancements (e.g., animations or overlays) to boost clarity and engagement. These insights align with the broader goal of the study: to identify and promote best practices in MOOC video production that combine technological tools with sound instructional design.

Explicit recommendations for practitioners include:

- MOOC designers should prioritize talking head and text overlay styles, which support connection and content clarity.
- Target video durations of 10–15 minutes to optimize learner attention spans.
- Adopt three-segment video structures to increase engagement through modular delivery.
- Incorporate subtitles and visual reinforcements to enhance accessibility and support diverse learner needs.
- Use animations and green screen techniques selectively, especially for technical or abstract content, to maintain viewer interest.

For educators and instructional designers, these findings underscore the importance of collaborating with media professionals to shape videos that are not only informative but also inclusive and engaging. As MOOCs continue to evolve as a central pillar of global education, post-production must be recognized as a transformative phase, one that can amplify educational impact through deliberate stylistic and structural choices.

Looking ahead, future studies should examine learner-specific outcomes such as satisfaction, retention, and knowledge gain, and explore the role of interactive features and adaptive design in sustaining engagement over time. By deepening our understanding of these dynamics, the educational community can further refine the design of MOOCs to better meet the needs of an increasingly diverse and digital-first learner base.

References

[1] Guo, P. J., Kim, J., & Rubin, R. (2014). *How video production affects student engagement: An empirical study of MOOC videos.* Proceedings of the First ACM Conference on Learning @ Scale, 41-50. This study investigates the factors influencing student engagement in MOOC videos, including the role of post-production techniques such as video editing and visual design.

[2] Kay, R. H. (2012). Exploring the use of video podcasts in education: A comprehensive review of the literature. Computers in Human Behavior, 28(3), 820-831. A comprehensive review of the effectiveness of video-based content in education, with insights into video editing, audio quality, and visual enhancements.

[3] Mayer, R. E. (2005). *Cognitive theory of multimedia learning.* Cambridge University Press. Discusses multimedia learning principles and the importance of visual and auditory elements in instructional design.
[4] Zhang, D., Zhou, L., Briggs, R. O., & Nunamaker, J. F. (2006). *Instructional video in e-learning: Assessing the impact of interactive video on learning effectiveness.* Information & Management, 43(1), 15-27. Highlights the role of interactivity in video content and its effect on learning outcomes.
[5] Hansch, A., Hillers, L., McConachie, K., Newman, C., Schildhauer, T., & Schmidt, P. (2015). *Video and online learning: Critical reflections and findings from the field.* Alexander von Humboldt Institute for Internet and Society. A detailed exploration of how video production and post-production techniques influence the quality of online learning experiences.
[6] Carmichael, M., Reid, A. K., & Karpicke, J. D. (2018). *Assessing the impact of educational video on student engagement, critical thinking, and learning.* Journal of Educational Psychology, 110(4), 553-563. Examines how production techniques, including post-production editing and interactive elements, affect student engagement and knowledge retention.
[7] Sweller, J., Ayres, P., & Kalyuga, S. (2011). *Cognitive load theory.* Springer. Provides insights into how post-production elements like animations and subtitles can minimize cognitive load and enhance learning.
[8] Kaltura. (2022). *State of video in education report.* Retrieved from: https://www.kaltura.com/ Annual report discussing trends in educational video, including the importance of editing and accessibility features such as subtitles and multi-language support.
[9] Alloca, K. *Videocracy. How YouTube Is Changing the World*; Bloomsbury: New York, NY, USA, 2018.
[10] Kaltura. The State of Video in Education: Insights and Trends. 2020. Available online: https://bit.ly/3xZxRgZ (accessed on 2 March 2021).
[11] Clemente, S.; Rosado, S.; Becerra, D.; Esteban, N.; Cáceres, C. URJCx para la elaboración e impartición de Cursos Abiertos en Línea (MOOC). In *Actas de las VIII Jornadas Internacionales de Campus Virtuales*; González González, C.S., Ed.; ULL: Tenerife, Spain, 2018; Volume 11, pp. 70–73.
[12] Seemiller, C.; Grace, M. Generation Z: Educating and Engaging the Next Generation of Students. *About Campus* 2017, *22*, 21–26.
[13] Gértrudix-Barrio, M.; Rajas-Fernández, M.; Álvarez-García, S. Metodología de producción para el desarrollo de contenidos audiovisuales y multimedia para MOOC. *RIED* 2017, *20*, 183–203.
[14] Rigutto, C. The landscape of online visual communication of science. *JCOM* 2017, *16*, C06. Burgess, J.; Green, J. *Youtube: Online Video and Participatory Culture*; John Wiley & Sons: New York, NY, USA, 2013.
[15] Rajas, M.; Puebla-Martínez, B.; Baños, M. Formatos audiovisuales emergentes para MOOCs: Diseño informativo, educativo y publicitario. *EPI* 2018, *27*, 312–321.