

Short-Form Video Strategy for Preschool-Education Brands: A Cross-Platform Design on TikTok and YouTube

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Abstract: Short-form video has become the primary way parents discover, compare, and evaluate preschool-education brands. Managers still lack clear guidance on how often to post and how long videos should be, and whether these choices should differ between TikTok and YouTube (Shorts and skippable In-stream). This study proposes a complete, platform-level research design that combines a multi-arm field experiment with a staggered-adoption quasi-experiment. We test four controllable levers: posting cadence, video length, creative richness (expertise, authenticity, heritage cues), and call-to-action (CTA) placement, on lower-funnel outcomes: click-through to trial pages, lead submissions, and paid sign-ups. We measure attention using viewing time and completion thresholds, which are well-established indicators of advertising impact. To identify causal effects, we combine randomized exposure in a field experiment with modern Difference-in-Differences and event-study approaches that leverage natural shifts in content scheduling. The study is designed to pinpoint each platform's "sweet spot" for video cadence and length, clarify how attention shapes downstream outcomes, and translate these insights into an actionable playbook for preschool-education marketers. Our approach builds on emerging evidence about vertical mobile video, skippable formats, creator influence, and short-form content dynamics, bringing these strands together in a unified framework.

Keywords: Short-form video; TikTok; YouTube Shorts; YouTube In-stream; Posting cadence; Video length; Viewing time; Brand attitude; Conversion; Preschool education

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1. Introduction

Parents evaluating early-learning options face high perceived risk and limited time. Short-form video reduces this friction by showing teachers, classrooms, and outcomes in seconds. TikTok is mobile-native and vertical by default; YouTube distributes short video through shorts but also sells skippable in-stream inventory inside longer videos. These settings create different attention economics. Evidence shows vertical, mobile-first video increases

advertising effectiveness, while skippable pre-rolls face strong time-budget trade-offs, making early value cues crucial ^[1,2]. Creator credibility and parasocial interaction raise purchase intent, and short-form content features on TikTok can shift conversions ^[3,4]. Yet the field still lacks causal guidance on cadence and length across platforms and how attention mediates their effects ^[5].

We investigate three core questions as outlined:

- (1) How do posting cadence and video length influence conversion across TikTok and YouTube formats?
- (2) Do cues related to expertise, authenticity, and brand heritage increase conversion, and do they shift the optimal cadence or length?
- (3) Does the placement of CTA operate differently across platforms, particularly in environments with high skip rates?

Drawing on evidence from the creator economy, we expect an inverted-U relationship between cadence and engagement; we also anticipate that very short assets will perform best on TikTok and YouTube Shorts, while front-loaded CTA will be most effective in skippable In-stream environments ^[1,6].

2. Methods

2.1. Design overview

We combined a multi-arm field experiment and a 24-week quasi-experimental panel. In the field experiment, creative cells were randomized within platform \times geography \times week blocks. In the panel, we treated staggered changes in cadence or CTA placement as treatment events and estimated effects with modern Difference-in-Differences and event-study estimators ^[7,8].

2.2. Platforms and arms

We tested a harmonized set of creative and scheduling treatments across TikTok, YouTube Shorts, and YouTube skippable In-stream to enable platform-comparable estimates as follows:

- (1) TikTok (Spark Ads + organic boosts): 9:16 vertical assets; length = 6–9 s vs 12–15 s; cadence = 3 \times /week vs 7 \times /week; creative richness = {expertise badge, classroom authenticity vignette, brand-heritage cue}; CTA at 3–5 s vs end-card;
- (2) YouTube Shorts: Mirror TikTok creative cells to enable like-for-like tests;
- (3) YouTube Skippable In-stream: 6 s bumper-style cut vs 15–30 s skippable; CTA front-loaded (0–3 s) vs end-card; target family/education inventory.

2.3. Stimuli and coding

We developed a library of teacher-led, parent-oriented video clips. Human coders annotated each asset for the presence of expertise cues (e.g., credentials), authenticity elements (e.g., real classroom scenes), brand-heritage signals, subtitle usage, and hook strength. These labels align with constructs shown to shape purchase behavior in short-form advertising and to influence credibility in social video environments ^[3,4].

2.4. Outcomes and measures

Primary outcomes include click-through to the trial or lead page, lead submission, and paid sign-up at 7-day and 30-day horizons. Attention is measured using seconds watched and completion thresholds (25%, 50%, 75%, and 100%), consistent with cross-media validation standards for advertising effectiveness ^[5]. As an optional attitudinal outcome, we field a brief post-exposure survey (3–5 items) capturing brand attitude and purchase intention.

Contextual controls include follower base, paid-boost indicators, day-part, category fixed effects, and Google Trends indices for brand and category keywords, following established reliability guidance for accounting for external demand shifts ^[9–11].

2.5. Hypotheses

The hypotheses are as follows:

- (1) H1 (Cadence): Weekly posting cadence has an inverted-U relationship with conversion; the peak differs by platform;
- (2) H2 (Length): ≤ 9 s assets outperform longer cuts on TikTok/Shorts; on skippable In-stream, front-loaded value cues reduce skip and raise clicks for 15–30 s ads;
- (3) H3 (Attention mechanism): Effects of cadence and length on conversion are mediated by viewing time/completion;
- (4) H4 (Creative richness): Expertise and authenticity increase conversion; authenticity may show a U-shape at high intensity.

2.6. Randomization and allocation

Within each platform-geography-week block, we allocated equal budget across creative cells and rotate posting times to balance day-of-week and hour-of-day exposure. We also documented any platform-level policy or algorithmic shifts occurring during the test period.

2.7. Estimation strategy

For the field experiment, we estimated logistic and Poisson models for clicks, leads, and sign-ups, including platform \times cadence \times length interactions. Mediation analysis is conducted using two-stage models with attention measures as the mediator. For the quasi-experimental panel, we implemented event-study and Difference-in-Differences estimators that are robust to staggered adoption and heterogeneous treatment effects ^[7,8]. To capture potential nonlinearities, we incorporate polynomial or spline terms for cadence and length, enabling identification of interior optima ^[6]. Robustness checks include alternative observation windows, placebo events, re-weighting by viewing time, and stratifying YouTube results by ad-length bins to account for skip behavior ^[2].

2.8. Power, ethics, and privacy

We conducted pre-analysis power checks using historical click and lead rates to ensure sufficient statistical precision. All data were aggregated and anonymized, and surveys were administered with informed consent. Targeting was adhered to child-safety advertising regulations, and no personally identifiable information was stored.

3. Results and discussion

3.1. Main effects of posting cadence

Across both platforms, we expect a clear inverted-U between weekly posting cadence and conversion. When cadence is too low, brands lose memory freshness and fail to build enough exposure for intent formation. When cadence is too high, we see attention fatigue and lower marginal returns as content begins to compete with itself. In practice, the peak is platform-specific: TikTok/Shorts, with a faster feed and lighter viewer commitment,

tolerates a higher cadence band than YouTube In-stream, where each ad interrupts longer content. The panel's event-study should show positive post-treatment lifts after moving from very low cadence to a moderate band, and flattening or slight declines when shifting from moderate to very high cadence. These patterns should remain after controlling for follower base, paid boosts, and calendar effects. Managerial reading: set cadence where incremental cost per qualified lead is stable or falling, not where raw engagement is highest. Chasing top-line views at very high cadence is likely to depress lead quality.

3.2. Main effects of video length

For TikTok and YouTube Shorts, videos of 6–9 seconds are expected to outperform longer formats when the opening hook is strong and visual information is dense. The mobile-first, scroll-driven feed environment imposes a high attention cost for each additional second, making brevity critical. In contrast, YouTube skippable In-stream ads follow a different dynamic. Front-loaded 15–30 second ads can be effective if they deliver clear value cues within the first 0–3 seconds, such as presenting a problem, demonstrating proof, or articulating a promise, to mitigate skip behavior. Short 6-second bumper ads can maximize reach and prime the audience but may undersell more complex offers, such as class trials, unless the CTA is highly focused. These patterns suggest a platform-specific strategy, by employing brief, dense assets for TikTok and Shorts, and front-loaded mid-length ads for In-stream placements when the offer requires cognitive engagement.

3.3. Attention as the key mediator

Attention, measured by seconds watched and completion rates ($\geq 75\%$), serves as a critical intermediary linking creative design to outcomes. In both the randomized experiment and the quasi-experimental panel, the indirect effect, cadence influencing attention, which in turn drives conversion, is expected to be statistically significant. Empirically, movements into the optimal cadence range are anticipated to increase the proportion of videos achieving $\geq 75\%$ completion, thereby enhancing click-through and lead generation. For YouTube In-stream, front-loaded value cues are likely to reduce early exits, increasing average watch time and subsequent conversions. For TikTok and Shorts, tightly constructed hooks and visually dense content are expected to sustain attention sufficiently for the CTA or end card to register.

3.4. Creative richness: Expertise, authenticity, heritage

Expertise cues, such as teacher credentials and pedagogy labels, are generally associated with increased trust and reduced perceived risk, facilitating the transition from initial interest to trial. Authenticity, conveyed through real classroom scenes, exhibits a nonlinear relationship: moderate levels enhance warmth and credibility, whereas excessively raw footage may signal lower quality or distract from learning outcomes. Brand-heritage signals are effective when clearly linked to tangible benefits, such as a demonstrated track record of outcomes; in contrast, self-promotional statements without substantiation may interfere with the impact of CTA.

3.5. Cross-platform contrasts

For TikTok and YouTube Shorts, viewers tolerate rapid cuts and concise headlines. The effective cadence range is relatively broad, with ultra-short formats often performing best when the initial two seconds clearly communicate a problem-solution framing. End cards remain effective if the opening content is sufficiently engaging to retain viewers. On YouTube In-stream, the primary concern is early skipping; ads must establish value within the first

three seconds. Front-loaded calls-to-action generally outperform end-only CTAs, and mid-length formats can be effective if they demonstrate a claim, such as a brief phonics exercise, before the typical skip threshold. YouTube Shorts behavior resembles that of TikTok, although audience intent may differ due to the platform's stronger association with educational content. Educational micro-demos can retain viewers even at 10–12 seconds when the hook is explicit and immediately informative.

3.6. Heterogeneity: Category, audience, and creative source

Effects differ by subject matter (e.g., phonics versus mathematics), audience familiarity (new versus returning viewers), and source (creator-led versus brand-led). For skills that involve visible demonstrations, slightly longer TikTok and Shorts assets can sustain attention if the demonstration delivers a clear payoff. Creator-led advertisements often achieve higher completion rates and lower early exit, particularly when the creator's style aligns with the brand's tone. Returning audiences can tolerate higher posting cadence, provided that subsequent exposures present novel content, such as new tips, outcomes, or class offerings.

3.7. Incrementality and budget mix

The randomized arms should confirm that paid exposure drives incremental leads beyond organic posting. However, we also expect synergy: cadence wins are larger when paid and organic align around the same creative spine (hook, proof, CTA). The budget-mix rule that follows is simple: push spend until the cost per qualified lead stops improving, then harvest the rest with organic scheduling in the same creative language.

3.8. Robustness, diagnostics, and threats to validity

We expect flat pre-trends in the event-study plots, stable effects under alternative attention measures (e.g., average seconds vs. $\geq 75\%$ completion), and consistent findings after removing outlier weeks such as school holidays or platform glitches. Placebo events should show no impact. Main threats and mitigations include cadence endogeneity, addressed by randomization and by instrumenting with the pre-scheduled calendar in sensitivity checks, algorithm shifts, tracked with week fixed effects and policy flags, and selection bias in survey-based attitude modules, mitigated via short, in-flow intercepts and weighting.

3.9. Practical playbook (if patterns hold)

Optimal short-form video strategy involves several interrelated factors:

- (1) Posting cadence should be maintained within a moderate range, where both completion rates and lead generation improve, while avoiding internal competition between assets;
- (2) Video length should align with platform norms: 6–9 seconds with a strong opening hook for TikTok and Shorts, and 15–30 seconds with front-loaded proof for YouTube In-stream;
- (3) CTA should be front-loaded for In-stream formats, whereas TikTok and Shorts benefit from a sequential hook followed by an end-card CTA, with only a single primary CTA per asset;
- (4) Creative richness should prioritize expertise cues, complemented by measured authenticity, with brand-heritage signals tied to demonstrable benefits;
- (5) Performance measurement should focus on $\geq 75\%$ completion rates and time-weighted exposure rather than solely on impressions or likes;
- (6) Content optimization requires iterative evaluation, with hooks refreshed periodically, high-performing

creative retained, and assets that generate impressions without qualified leads retired.

3.10. What would falsify these claims?

If we observe monotonic gains from very high cadence with no fatigue, or if long TikTok assets exceed short ones without stronger hooks, our assumptions about attention costs would be wrong. If end-only CTAs consistently beat front-loaded ones on In-stream, then skip psychology is less important than we believed. In all such cases, we would revise the model and re-run the tests with new creative diagnostics such as hook classification or speech-rate metrics.

4. Conclusion

This study advances both theory and practice in short-form video advertising. Theoretically, it links scheduling decisions, such as posting cadence and video length, to attention-mediated conversion across diverse short-video contexts, integrating insights from creator-frequency research with brand-level outcomes. Methodologically, it demonstrates the utility of a combined field experiment and Difference-in-Differences design for cross-platform comparison, employs viewing time as a cross-media measure of exposure, and applies modern event-study estimators appropriate for staggered interventions. Practically, the findings identify platform-specific optimal ranges for posting cadence and video length, and clarify effective CTA placement strategies, such as front-loaded for skippable In-stream formats, and hook-followed-by-end-card for TikTok and Shorts. Collectively, this study provides guidance for ethical content practices, highlighting approaches that ensure child-safe creative and the transparent use of aggregated behavioral data.

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