Microlearning or Distraction? The Relationship Between Short-Form Educational Videos and Students' Learning Engagement

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Abstract

Short-form video has become a routine part of students' digital lives, and educational material now circulates alongside entertainment in feeds on Instagram, Facebook, YouTube and other platforms. This study examines how undergraduate students use short-form video and how their reported viewing practices relate to learning engagement. Drawing on a cross-sectional survey of 200 students, the study considers intentional course-linked viewing, incidental and entertainment-driven exposure, media multitasking, perceived content quality, and behavioural, cognitive and emotional engagement. Descriptive analysis of the questionnaire data indicates that students report frequent incidental viewing and substantial multitasking alongside more moderate intentional educational use. On five-point response scales, the constructed descriptive averages were 3.36 for intentional viewing, 4.02 for incidental viewing, 4.23 for media multitasking, 3.68 for cognitive engagement, and 3.89 for emotional engagement. These summaries describe responses in this sample and should not be interpreted as causal effects. Demographic characteristics supplied by the researcher indicate 119 male and 81 female respondents, with representation from all four undergraduate years and several academic fields. The findings are discussed through microlearning, cognitive load, student engagement, self-determination, and uses-and-gratifications perspectives. The paper argues that short-form educational video is best understood as a context-dependent resource: its potential rests on learners' goals, the credibility and design of content, and the attention environment in which it is encountered. Implications include purposeful curation, short learning tasks that prompt retrieval or reflection, and explicit student media-literacy guidance. The cross-sectional, self-report design limits causal inference and generalisability; further analyses and replication are recommended.

Keywords*: microlearning; short-form video; learning engagement; media multitasking; higher education; Pakistan*

Introduction

The growth of short-form video also raises a question about what counts as learning in everyday digital life. A student may watch a clip that clarifies a difficult term, remember a visual demonstration, or

discover a topic that prompts further reading. However, a view, like, share, or completion of a clip is not equivalent to durable understanding. Educational value depends on what learners do with information after encountering it: whether they compare it with other sources, explain it in their own words, practise a skill, or apply it to a problem. This distinction is especially important when educational content is embedded in platforms designed to sustain attention across a continuous sequence of posts.

A useful way to approach the issue is to separate the properties of the medium from the conditions of its use. Short duration may make a resource convenient, but it does not determine whether the resource is accurate, coherent, or cognitively appropriate. Likewise, high engagement with a platform may reflect entertainment, curiosity, social connection, or learning. The same student may move between these motives within minutes. This study therefore treats short-form video not as a single, uniform intervention but as a set of practices that occur in different motivational and attentional contexts.

Recent reviews of microlearning and social-media-supported learning reinforce this need for a conditional interpretation. A systematic review of microlearning studies describes the approach as most purposeful when brief content is action-oriented and connected to defined objectives, while also noting continuing questions about design and implementation (Monib et al., 2025). Reviews of social media in education similarly point to opportunities for flexible learning alongside concerns about distractions, instructional fit, and the need for pedagogical planning (Denojean-Mairet et al., 2024). These findings provide a contemporary context for the present study, while not substituting for evidence from the current sample.

University learning now takes place within a dense and continuous media environment. Students move between lectures, learning-management systems, messaging applications, search engines and social platforms. Within this environment, short-form videos—brief, mobile-first clips commonly encountered through feeds and recommendations—have become a familiar format for explanation, revision and informal learning. A concise demonstration or concept summary may make an idea accessible at the moment a student needs it. Yet the same platform can place that clip between unrelated entertainment posts and encourage continued scrolling after the learning purpose has been fulfilled.

This creates a practical and conceptual tension. The microlearning perspective emphasizes the value of focused, small units of information that can fit into learners' schedules and support just-in-time study (Hug, 2005). The distraction perspective draws attention to rapid switching, notifications, and the design of feeds that encourage extended viewing. Research on media multitasking has associated

frequent switching with challenges in cognitive control (Ophir, Nass, & Wagner, 2009), while classroom research has found that off-task laptop use can impair learning for the user and nearby peers (Sana, Weston, & Cepeda, 2013). Neither perspective, on its own, fully captures students' everyday use: a learner may deliberately search for a course explanation and then be drawn into unrelated content.

The distinction between designed microlearning and informal short-video viewing is important. In instructional microlearning, educators typically segment content around a defined outcome, sequence it, and provide practice or feedback. In social-media feeds, students often encounter content without a planned sequence or assurance of accuracy. Educational clips may be helpful as an entry point or revision aid, but brevity does not guarantee conceptual depth, and a visually engaging video is not necessarily accurate or aligned with course objectives.

In Pakistan, university students' access to smartphones and internet services makes informal digital learning a relevant part of the educational environment. However, the educational consequences of naturally occurring short-form video use should not be assumed. Students' experiences may vary by programme, year of study, access conditions, motivations, and their ability to regulate attention. The present study therefore examines short-form video use in relation to multiple dimensions of learning engagement rather than treating video exposure as uniformly beneficial or harmful.

Research Objectives

- Describe undergraduate students' short-form video use, including platforms, frequency and purpose.
- Examine the relationship between short-form video use and behavioural, cognitive and emotional learning engagement.
- Distinguish intentional, course-linked viewing from incidental or entertainment-driven viewing.
- Consider students' perceptions of whether short-form videos support or disrupt focus.

Research Questions

- RQ1: How do students use short-form educational videos in terms of platform, frequency and purpose?
- RQ2: What relationship exists between short-form video use and dimensions of learning engagement?
- RQ3: Does the relationship differ between intentional course-linked viewing and incidental, algorithm-driven viewing?
- RQ4: How do students perceive short-form videos as aids to, or disruptions of, concentration?

Significance

The study contributes a context-sensitive account of students' reported practices and engagement. For educators, it offers a basis for considering how short clips might be integrated without confusing attention capture with learning. For programme and curriculum designers, it highlights the need to connect digital content to outcomes and to develop critical evaluation skills. The contribution is deliberately bounded: the survey provides a snapshot of self-reported patterns, not an experimental test of instructional effectiveness.

The study is also relevant to media and digital literacy. Students are not only recipients of educational information; they are users of platforms in which content is ranked, recommended, shared and remixed. An educational clip can be concise and persuasive while omitting uncertainty, evidence or context. Helping students identify authorship, check claims and recognise persuasive techniques is therefore part of responsible digital learning. For institutions in Pakistan, the issue is not simply whether students use social platforms, but how formal teaching can acknowledge existing practices while supporting reliable sources, equitable access and sustained academic inquiry.

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Literature Review

Microlearning describes learning organized into relatively small units, often delivered in short sessions and accessed through digital or mobile devices. Hug (2005) treats microlearning as a flexible concept with possibilities for designing compact learning units and narrative arrangements. Its educational appeal is associated with manageability, convenience and the opportunity to revisit a discrete concept. However, short duration is not itself an instructional method. A brief unit needs a clear objective, coherent structure and a suitable relationship to the larger course.

Cognitive load theory proposes that working memory is limited and that instructional design should manage the demands placed on learners (Sweller, 1988). Mayer's (2009) account of multimedia learning similarly emphasizes coherence, signalling and segmenting. A well-designed clip may reduce unnecessary material, signal the central idea and allow a learner to control pace or replay a difficult

segment. Conversely, a short video that compresses too many ideas, omits necessary context or adds decorative stimulation can still impose unnecessary cognitive demands. Thus, the microlearning argument is strongest when brevity is paired with purposeful design.

Social platforms were largely developed around sharing and attention, rather than formal instructional sequencing. Nevertheless, educators and independent creators use short videos to explain concepts, demonstrate processes, provide revision prompts and introduce topics. Their visual and mobile-first format can be familiar to students and may lower the threshold for engaging with a subject. The informal nature of the format also means that quality, evidence and curricular alignment vary. Students may need to assess the source and verify information against course materials.

The distinction between purposeful and incidental exposure is therefore central. Purposeful use begins with a learning need—for example, understanding a concept or revising before an assessment. Incidental exposure occurs when an educational clip appears within a feed without deliberate searching. Incidental content may still stimulate curiosity, but the surrounding interface can also divert attention. A nuanced account should ask not simply whether students watch short videos, but why, how, and under what conditions.

Media multitasking includes concurrent or rapidly alternating use of media while studying or watching educational material. It may involve checking messages, scrolling another feed, switching applications, responding to notifications or keeping multiple tabs open. Ophir et al. (2009) reported differences in cognitive control associated with media multitasking, while Sana et al. (2013) demonstrated classroom learning costs associated with off-task laptop multitasking. These studies do not prove that every instance of switching is harmful, nor do they directly test short-form educational video. They nevertheless provide a rationale for examining multitasking as a contextual factor that may weaken sustained processing.

Short-form platforms can make switching particularly easy because each clip is brief and the next item is immediately available. The learner may experience repeated transitions between tasks before consolidating information. In contrast, a student who watches a selected clip, pauses to take notes and then applies the concept may use the same format in a more focused manner. Media multitasking is consequently treated here as a relevant practice rather than a simple proxy for total screen time.

Fredricks, Blumenfeld and Paris (2004) conceptualize engagement as multidimensional. Behavioural engagement includes participation, effort and persistence; cognitive engagement involves investment in understanding and the use of learning strategies; and emotional engagement includes interest,

enjoyment and a sense of belonging. These dimensions can overlap but are not interchangeable. A student might enjoy an engaging clip without applying its content, or might work persistently on a course despite finding it difficult.

Handelsman et al. (2005) developed a measure of college student course engagement, reinforcing the value of assessing students' involvement in academic work. In the present study, engagement items address attendance, assignment completion, participation and effort, as well as connecting ideas, self-questioning, concentration, interest and motivation. Because these are self-reported perceptions, they provide an indication of engagement rather than direct observation of classroom behaviour or demonstrated learning.

Theoretical Perspective

There are four perspectives inform the study. Cognitive load theory and multimedia learning explain why structured, segmented material may support processing (Sweller, 1988; Mayer, 2009). Self-determination theory proposes that motivation is supported when autonomy, competence and relatedness are satisfied (Deci & Ryan, 2000); students' self-directed, goal-oriented video use may be experienced differently from unplanned feed consumption. Uses and gratifications theory emphasizes that audiences actively select media to meet needs such as information, convenience or entertainment (Katz, Blumler, & Gurevitch, 1974). Finally, the engagement framework of Fredricks et al. (2004) provides the outcome dimensions.

Recent scholarship adds nuance to the debate. Conde-Caballero et al. (2024) examined TikTok as a microlearning environment in higher education and considered students' perceptions and technology acceptance in a discipline-specific setting. Ding, Xu, and Lewis (2023) reported a quasi-experimental comparison of short instructional videos and teacher-led virtual instruction in business statistics; their results suggest that short videos can support learning under particular instructional conditions. These studies concern structured or deliberately implemented educational videos and should not be treated as direct evidence that incidental viewing in social feeds has the same effects. Parker, Bunch, and Pike (2024), using large-scale educational-video viewing data, also caution against reducing engagement to a single viewing session or to video length alone. Taken together, this literature points toward the importance of instructional context, repeated use, learner characteristics and task design.

The research gap lies at the intersection of these perspectives. Research on microlearning often studies designed instructional units, while research on social media frequently examines broad use patterns or distraction. The present survey focuses on students' naturally occurring, mixed exposure and asks how

reported viewing modes relate to engagement. The conceptual proposition is conditional: viewing purpose, content quality and attention context may matter more than the format alone. The hypotheses are consequently directional expectations, not claims that the current analysis has already established. Testing them requires participant-level construct scores and inferential models, alongside checks of reliability, distributional assumptions and potential confounders such as year of study, discipline and access conditions.

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The study conceptualizes intentional, course-linked viewing and incidental, entertainment-driven viewing as distinct practices. Learning engagement is represented through behavioural, cognitive and emotional dimensions. Media multitasking and perceived content quality are considered contextual variables. The proposed relationships are associative and do not imply causality.

- H1: Intentional, course-linked short-form viewing is positively associated with learning engagement.
- H2: Incidental or entertainment-driven short-form viewing is negatively associated with cognitive engagement.

- H3: Media multitasking moderates the relationship between short-form video use and learning engagement, such that the relationship is weaker at higher levels of multitasking.
- H4: Perceived content quality moderates the relationship between intentional viewing and learning engagement.

Research Methodology

The study uses a cross-sectional quantitative survey design. The questionnaire captures students' reported access, platform use, viewing habits, media multitasking, perceived content quality, engagement and perceptions of focus. The usable dataset contains 200 survey records. The demographic summary identifies 119 male respondents (59.5%) and 81 female respondents (40.5%). Year-of-study representation was reported as 20% first year, 29% second year, 19% third year and 32% fourth year. Programme representation was reported as 15% Media and Communication Studies, 29% Social Sciences, 18% Management Sciences, 19% Computer Science and 19% other fields. These supplied summaries are used in the sample profile.

The questionnaire includes demographic and access questions, platform and use-pattern items, five items on intentional viewing, five on incidental viewing, six on media multitasking, five on perceived content quality, five behavioural engagement items, six cognitive engagement items, five emotional engagement items, and five perception/focus items. Agreement items use a five-point response scale. The supplied spreadsheet contains item responses but does not provide a documented scale-validation report, expert-review record, pilot procedure or full item-source documentation. The Excel file was inspected and descriptive scale averages were calculated by averaging the corresponding item responses within each construct. The scale averages are reported as descriptive summaries. The survey's focus items include negatively worded items identified as reverse-scored in the questionnaire.

The respondents were undergraduate students drawn from more than one academic field, as indicated by the supplied programme categories. The sample includes all four years of undergraduate study, allowing the paper to describe a mix of early- and later-stage students. However, the available documentation does not identify the sampling frame, recruitment channels, response rate, institution-by-institution distribution or inclusion criteria. It is therefore not possible to determine whether the sample is probability-based or representative of undergraduate students in Pakistan. The findings should be interpreted as descriptive evidence from the 200 respondents represented in the supplied data, not as national estimates.

The platform percentages and the scale means are also different types of information. Platform percentages were supplied as a summary by the researcher, whereas construct averages were computed from questionnaire items. The platform item in the workbook appears to use a different response structure from the summary. The two sources should not be silently combined or treated as interchangeable. The manuscript reports the supplied platform distribution as a separate descriptive summary and recommends reconciliation with the original export before submission.

Intentional course-linked viewing refers to the reported use of short videos to support a specific academic purpose, such as clarifying a concept or revising course material. Incidental or entertainment-driven viewing captures exposure that is not primarily initiated by an academic objective. Media multitasking concerns switching between media or using other applications while studying or viewing content. Perceived content quality refers to respondents' judgements about the usefulness or quality of short-form material. Learning engagement is divided into behavioural, cognitive and emotional dimensions, following the multidimensional approach described by Fredricks et al. (2004).

These constructs are conceptually distinct. Intentional viewing describes a learner's purpose; perceived quality describes an evaluation of the content; multitasking describes the attention context; and engagement describes involvement in academic work. The distinctions matter because a high level of platform use cannot be interpreted as a high level of learning, and perceived usefulness cannot be treated as objective learning gain. Likewise, the present engagement measures are self-reported rather than direct observations of participation, task persistence or achievement.

The descriptive analysis reports counts and percentages for the demographic profile and the researcher-supplied platform summary. Construct means and standard deviations are reported on the original five-point scale. Means provide a compact summary of average item responses, while standard deviations indicate the spread of responses around each construct mean. The analysis is descriptive and does not estimate causal effects.

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Research Findings

Characteristic	**Category**	**n**	**%**
Gender	Male	119	59.5
Gender	Female	81	40.5
Year of study	First year	40	20.0
Year of study	Second year	58	29.0
Year of study	Third year	38	19.0
Year of study	Fourth year	64	32.0
Programme	Media & Communication Studies	30	15.0
Programme	Social Sciences	58	29.0
Programme	Management Sciences	36	18.0
Programme	Computer Science	38	19.0
Programme	Other fields	38	19.0

The researcher reports that 62% of respondents have internet access most of the time, while 38% report always having access. This suggests that the sample generally has regular connectivity, although access is not necessarily uninterrupted for every student. Platform use was reported as Instagram (57%), Facebook (21%), X (12%) and Snapchat (10%). Instagram was therefore the most frequently identified platform, followed by Facebook, X and Snapchat. Figure 1 visualises this supplied distribution. The percentages sum to 100%, but the manuscript should confirm whether respondents selected one primary

platform or whether the figures represent a separate categorisation of platform use. The figure is descriptive and should not be read as a measure of time spent on each platform or of educational use specifically.

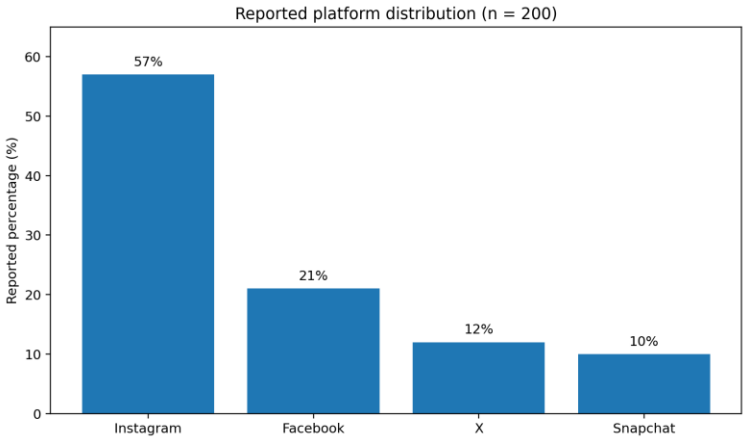


Figure 1. Reported platform distribution

Reported platform	Percentage
Instagram	57
Facebook	21
X	12
Snapchat	10

The questionnaire-item averages computed from the data file are summarized below. Values are on the original five-point scale. They are descriptive and should not be read as estimates of an effect or as evidence of statistical significance.

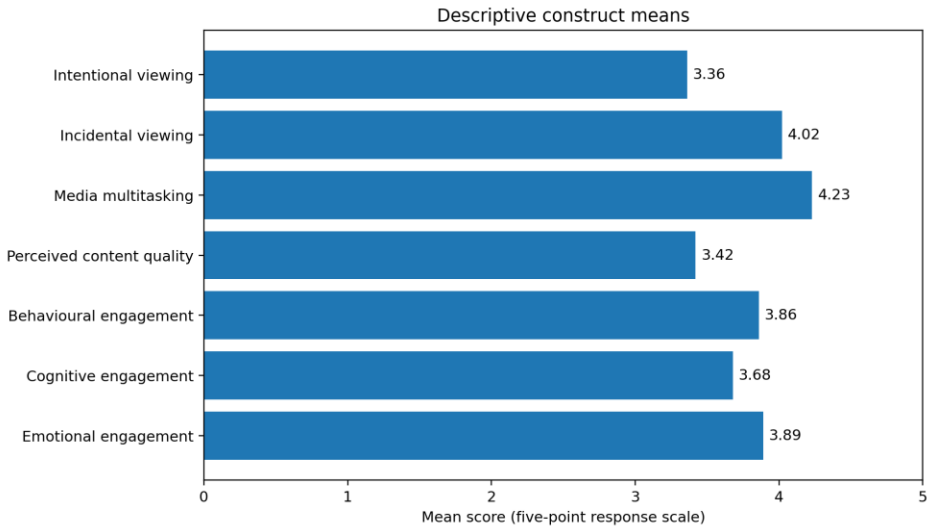


Figure 2. Descriptive construct means on the five-point response scale.

Construct	Items	Mean	SD
Intentional course-linked viewing	IV1–IV5	3.36	0.49
Incidental / entertainment-driven viewing	INC1–INC5	4.02	0.86
Media multitasking	MM1–MM6	4.23	0.91
Perceived content quality	CQ1–CQ5	3.42	0.57
Behavioural engagement	BE1–BE5	3.86	0.70
Cognitive engagement	CE1–CE6	3.68	0.88
Emotional engagement	EE1–EE5	3.89	0.99

The average for incidental viewing (4.02) was higher than that for intentional viewing (3.36), indicating that respondents endorsed incidental or entertainment-related viewing statements more strongly, on average, than statements describing deliberate course-linked use. Media multitasking had the highest reported scale average (4.23). This pattern is consistent with a digital environment in which educational use coexists with habitual app switching; it does not, by itself, show that multitasking reduces engagement.

The engagement summaries were moderately positive on the response scale, with emotional engagement averaging 3.89, behavioural engagement 3.86 and cognitive engagement 3.68. Figure 2 compares the construct means on the same five-point scale. The chart makes the contrast between viewing practices and engagement dimensions easier to inspect, but the constructs are not identical measures and should not be ranked as if they were outcomes from a common validated scale. The differences are descriptive only. Without a validated measurement model and inferential tests, the results do not establish that one dimension is significantly higher than another or that short-form video use explains these engagement levels. The questionnaire includes statements about whether short educational videos help students identify a key idea, make it easier to begin studying, interfere with longer concentration, distract from study, and supplement rather than replace lectures and readings. Because two focus items are negatively worded and explicitly marked for reverse scoring, the raw item averages should not be combined without recoding. The present results support the broader observation that the instrument treats educational usefulness and distraction as potentially coexisting experiences, rather than mutually exclusive outcomes.

Discussion

The descriptive profile suggests that students' short-form video practices are not exclusively academic. The descriptive profile suggests that students' short-form video practices are not exclusively academic. The average incidental-viewing score was higher than the intentional-viewing score, and media

multitasking was also strongly endorsed. This is an important contextual finding: educational clips are encountered within a wider media routine, and a learner's purpose may shift during a single session. A student can open a platform to understand a concept and then move into unrelated content. The data are compatible with this account, although the survey cannot establish the sequence of any particular viewing session.

The pattern also cautions against a simple claim that short-form video necessarily improves or damages engagement. Engagement scores were not uniformly low, and students reported relatively positive behavioural and emotional engagement alongside substantial multitasking. The study does not show that the multitasking caused, or failed to cause, any engagement outcome. Instead, it underlines the need to distinguish exposure from use mode and to test the relationships using properly specified statistical models.

Instagram's prominence in the supplied platform summary indicates that respondents' short-form video environment is likely to be shaped by a platform that combines video with social interaction and other forms of content. The survey summary does not establish which platform students use for academic purposes, how often they encounter educational clips, or whether the reported platform preference predicts engagement. It would therefore be inappropriate to conclude that Instagram is either the most effective learning platform or the main source of distraction. Its prominence is a reason to examine platform-specific practices in subsequent research.

The distinction between intentional and incidental viewing offers a more useful interpretive lens than platform preference alone. A student may use the same platform to search for an explanation, communicate with peers, follow news and watch entertainment. The meaning of an exposure depends partly on the task the learner is trying to accomplish and the way the session is organised. In this sense, the platform is an environment of possible learning rather than a learning intervention in itself.

The results are consistent with a conditional understanding of microlearning. Cognitive load theory and multimedia learning provide a rationale for brief, well-structured explanations, but the format alone does not ensure appropriate segmentation, coherence or practice. The relatively stronger endorsement of incidental viewing in this sample illustrates why informal platform use should not automatically be equated with designed microlearning.

The study's conceptual distinction between intentional and incidental viewing also connects with self-determination theory. A student who selects a clip to meet a learning goal may experience autonomy and competence, while a student who follows recommendations without a clear goal may experience

less self-directed use. Uses and gratifications theory similarly directs attention to motive: educational, informational and entertainment needs may coexist. These theoretical interpretations are plausible explanations to test, not causal conclusions established by the descriptive data.

Finally, the three-dimensional engagement framework remains useful because behavioural participation, cognitive investment and emotional interest may respond differently to media practices. Future analysis should report these dimensions separately before constructing an overall engagement score. This approach can avoid masking a pattern in which a resource is enjoyable but does not necessarily deepen processing.

For instructors, short videos are best integrated around explicit learning outcomes. A selected clip can introduce a concept, demonstrate a procedure or prompt revision, but it should be followed by a task that requires learners to retrieve, explain, apply or critique the material. Such tasks shift the activity from passive viewing toward processing.

Teachers and programme teams should curate trustworthy sources rather than relying on algorithmic discovery alone. Students can be asked to identify the creator, check the evidence, compare claims with course readings and note what a clip leaves unexplained. This is particularly important when clips simplify complex social, scientific or professional issues. For students, a practical strategy is to define the learning purpose before opening a platform, save vetted resources, disable or limit notifications during study, and stop after completing the intended task. These practices are not a rejection of short-form media; they are ways to align the medium with a learning objective.

At institutional level, faculty development could support educators in designing concise, accessible and accurate videos, while media-literacy instruction can address credibility, algorithmic recommendations and attention management. Institutions should avoid treating platform use as a substitute for teaching, feedback, readings or sustained inquiry.

The findings support a distinction between the availability of short-form video and its purposeful use in teaching. Institutions do not need to reproduce the rapid, entertainment-oriented rhythm of social feeds to benefit from concise audiovisual explanation. A teacher can instead use a short clip as one stage in a sequence: establish a question, show a focused explanation, pause for retrieval, and ask students to apply or challenge the idea. This structure retains the accessibility of a brief video while making the learning objective visible.

The findings also suggest that recommendations should be proportionate. The high mean for media multitasking does not demonstrate that every student multitasks continuously, nor does it prove that

multitasking caused lower cognitive engagement. It does, however, identify attention management as a relevant issue for future study and a reasonable topic for student guidance. Practical advice should focus on strategies students can test—such as opening a saved clip directly, turning off notifications during a study interval, taking notes, and closing the app after completing a task—rather than making unsupported claims about the inevitable effects of a platform.

Several limitations qualify the findings. First, the cross-sectional design captures one point in time and cannot establish direction or causality. Students who are already engaged may be more likely to seek educational clips, rather than clips increasing engagement. Second, self-reported responses may be affected by recall error or social desirability. Third, the sampling method and institutional setting are not documented in the provided materials, limiting generalisability. Fourth, the researcher-provided demographic summaries do not match the demographic categories in the workbook; this must be reconciled against the original survey export before journal submission.

Fifth, the supplied data do not include focus-group transcripts, so the qualitative component described in the draft framework cannot be reported. Sixth, psychometric evidence—including reliability coefficients and factor validity—was not provided. The scale summaries in this report are preliminary descriptive indices, not a substitute for validation. Finally, platform percentages provided by the researcher are separate from the multi-select platform item in the workbook and should be clearly identified in the final data documentation. Future research should use a transparent sampling strategy and include students from multiple institutions and disciplines. Longitudinal or experimental studies could compare curated short-form clips with longer videos or text-based materials. Researchers may also use screen-time logs, learning analytics or performance measures to supplement self-report. A subsequent analysis of this dataset should calculate Cronbach's alpha or omega for each scale, inspect item-total correlations and factor structure, reverse-score negatively worded items, and conduct correlation and regression analyses with confidence intervals. Moderation claims should be tested with centered predictors and interaction terms, followed by simple-slope analysis where appropriate.

Conclusion

Short-form educational video sits between the promise of microlearning and the risk of distraction. In this survey of 200 undergraduate students, reported incidental viewing and media multitasking were descriptively more prominent than intentional course-linked viewing. At the same time, respondents reported generally positive levels of behavioural, cognitive and emotional engagement. These

findings do not establish that short-form videos cause engagement or distraction; rather, they suggest that students' purposes and viewing contexts deserve closer empirical attention.

The practical conclusion is not to embrace or ban the format wholesale. Short clips can be useful when they are credible, focused, connected to learning outcomes and paired with active processing. Their value is less certain when they are encountered incidentally in an environment that encourages continuous switching. For higher education in Pakistan, a balanced approach would combine thoughtful curation, student media literacy and attention-aware study practices with the sustained teaching and learning activities that short videos cannot replace.

The dataset could support a stronger follow-up analysis if the original item-level responses and codebook are retained. First, confirm the coding direction of all items, especially the negatively worded focus items, and recalculate construct scores using a documented procedure. Second, assess internal consistency for each multi-item construct using an appropriate reliability estimate such as Cronbach's alpha or McDonald's omega. Reliability alone does not establish validity, so item wording and construct coverage should also be reviewed. Third, inspect missingness, response distributions and possible ceiling effects before using parametric analyses.

Fourth, estimate bivariate associations between intentional viewing, incidental viewing, multitasking, content quality and each engagement dimension. If the data and sample size are adequate, multiple regression can examine whether intentional viewing is associated with engagement after accounting for relevant covariates. Moderation hypotheses should be tested with interaction terms and interpreted using confidence intervals and simple-slope estimates rather than by comparing means alone. Because the design is cross-sectional, even statistically significant associations would not establish temporal order or causality. These steps would strengthen the evidential basis of the paper without changing its central focus.

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