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Perceived Credibility and Educational Acceptance of Faculty-Verified Social Media Micro-Learning in the Undergraduate Dental Curriculum: A Cross-Sectional Survey

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Abstract

Background: Short-form social media videos are widely used by dental students as supplementary learning material, but concerns about content credibility and the absence of peer review persist.

Objective: The aim of this study is to assess undergraduate dental students' perceived credibility, utility, clinical confidence, perceived cognitive overload, engagement, and acceptance of faculty-verified social media micro-learning, and preferred video length. The study measured students' perceptions; no intervention was implemented, and no learning outcomes were assessed.

Methods: A voluntary, anonymous, 13-item online questionnaire (Google Forms) was circulated among undergraduate dental students recruited through institutional portals and student channels accessible to the authors in Maharashtra, India. Favourable meant agree or strongly agree on a 5-point Likert scale. Analyses were n (%) with 95% Wilson confidence intervals, exact binomial tests against 50%, chi-square goodness-of-fit tests, and Holm correction.

Results: Among respondents answering each item, favourable responses were given by 104/195 (53.3%) for credibility, 99/195 (50.8%) for trust in endorsed content, 113/195 (57.9%) for concept understanding, 110/198 (55.6%) for procedural retention, 106/196 (54.1%) for clinical confidence, 119/198 (60.1%) for perceived reduction in cognitive overload, 124/195 (63.6%) for curricular integration, 119/194 (61.3%) for engagement, and 120/206 (58.3%) for motivation to revise. After Holm correction, curricular integration (p=0.002), engagement (p=0.016), and perceived cognitive overload (p=0.038) remained significantly above 50%.

Conclusions: In this self-selected sample drawn mainly from interns and senior students, using an unvalidated questionnaire, about half to three-fifths of respondents viewed faculty-verified micro-learning favourably, with the clearest support for curricular integration. Findings reflect perceptions only and need confirmation in probability samples with objective outcomes.

Categories: Medical Education, Public Health, Dentistry
Keywords: curriculum development, dental education, microlearning, perceived credibility, social media

Introduction

Digital pedagogy has changed how health professions students acquire and apply knowledge, and smartphones are now routinely used for academic purposes by these learners [1]. In prosthodontics, restorative dentistry, and oral surgery, where spatial reasoning, fine motor control, and multi-step technical execution are central, long didactic lectures may increase cognitive load and limit retention.

Micro-learning, the delivery of content in short, focused segments, has been examined as a strategy in health professions education. A scoping review reported positive effects on knowledge, confidence in performing procedures, and retention, alongside concerns about pedagogical discomfort, technology inequality, and privacy [2]. A later systematic review summarised the design features and benefits of micro-learning strategies across educational settings [3]. Instruction delivered in shorter, segmented units may reduce demands on working memory, whereas prolonged uninterrupted presentations may be less well suited to such content [4,5]; lecture length alone does not determine learning outcomes.

Social media is already part of dental education. Studies of dental students and educators have documented use of these platforms for learning and communication [6-8]. Systematic evidence in medical education suggests that social media can support engagement and knowledge sharing, although the quality of the evidence is limited [9], and its place in dental education remains debated [10]. Instagram, with its short visual posts, has been described as suited to image-based disciplines [11].

Open platforms nevertheless carry risks. Content is rarely peer-reviewed, techniques may be non-standard, and ethical, legal, and privacy problems can arise [11-13]. Faculty verification and institutional endorsement are therefore plausible determinants of whether students regard short-form content as credible. A recent randomised crossover study in predoctoral implant education found that Instagram Reels could support comprehension [14], but evidence on how students perceive faculty-verified micro-learning, and whether they want it formally integrated into the curriculum, remains limited.

This cross-sectional study therefore assessed undergraduate dental students' perceived credibility of faculty-verified short-form videos and their trust in institutionally endorsed content. The study measured students' perceptions; no intervention was implemented, and no learning outcomes were assessed. It also assessed perceived effects on concept understanding, procedural retention, clinical application confidence, cognitive load, engagement, and motivation to revise. Finally, it explored acceptance of formal curricular integration and preferred video length.

Materials And Methods

Study design and reporting

This was a cross-sectional, anonymous, online survey of undergraduate dental (Bachelor of Dental Surgery (BDS)) students in Maharashtra, India, conducted over a four-week period (June 2026 to July 2026). The survey was designed by the investigators in the Department of Prosthodontics, School of Dental Sciences, Krishna Vishwa Vidyapeeth (Deemed to be University), Karad, and reported with reference to the Checklist for Reporting Results of Internet E-Surveys (CHERRIES) for web surveys [15].

Participants and sampling

The survey was open to students from the first year of the BDS programme through the compulsory rotating internship. A stratified random sampling strategy by academic year was originally planned. In practice, no sampling frame was available, and the questionnaire link was circulated voluntarily through institutional communication networks, portals, and student channels, with weekly electronic reminders. The final sample is therefore a voluntary-response convenience sample. The number of students who received the link is unknown, so a response rate cannot be calculated. Respondents' institution was not recorded, so the study cannot be described as multi-institutional; findings therefore describe the respondents only and should not be taken as representative of dental students in Maharashtra or India, and the findings are interpreted as describing the respondents rather than estimating population values.

The required sample size was calculated using the single-proportion formula:

$$\frac{Z^2 \times p \times (1-p)}{d^2}$$

using Z=1.96 for 95% confidence, p=0.50 to maximise variance, and a margin of error (d) of 0.07. This gave a minimum of 196 participants. After allowing for 5% incomplete or non-response, the target was 206 complete responses, which was achieved. Because sampling was non-probabilistic, the calculation served only to set a target number of responses; the confidence intervals (CIs) and p-values reflect sampling variability alone, assume the sample behaves like a random one, and should be read as descriptive.

Survey instrument

Data were collected with a structured, self-administered questionnaire of 13 items built in Google Forms. The first section captured academic year, gender, and frequency of social media use for dental education (items 1 to 3). The second section (items 4 to 13) assessed perceived credibility (credibility of faculty-verified short videos, item 4; trust in institutionally endorsed content, item 5), perceived educational utility (concept understanding, item 6; procedural retention compared with long lectures, item 7), clinical application confidence (item 8), perceived reduction in cognitive overload (item 9), educational acceptance (support for formal curricular integration, item 10), engagement (item 11), motivation to revise topics (item 12), and preferred maximum video length (item 13). Items 4 to 12 used a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). Item 13 offered four length categories: less than 2 minutes, 2-5 minutes, 6-10 minutes, and more than 10 minutes. Item 6 specified short-form videos of 3 minutes or less. Micro-learning was defined as brief, focused video segments. Only item 6 specified a duration (≤3 minutes); items 7, 9 and 11 did not, and item 13 independently asked about preferred maximum length (<2 to >10 minutes). Responses to those items therefore reflect each respondent's own understanding of 'short-form' videos. Perceived credibility refers to trust in the reliability of faculty-verified material, and educational acceptance refers to willingness to incorporate short-form videos into the formal curriculum. In this study, faculty verification refers to review of a video's content for accuracy by a qualified faculty member before release; institutional endorsement refers to official release or approval of the video by the institution or department. These working definitions were set by the investigators (and were/were not shown to respondents). The full questionnaire is provided in the Appendices.

Ethical considerations

The study protocol was approved by the Institutional Ethics Committee of Krishna Vishwa Vidyapeeth (Deemed to be University), Karad (reference number KVV/IEC/07/2026; protocol number 702/2025-2026; dated May 15, 2026). Participation was voluntary and anonymous, and no personal identifiers were collected. Electronic informed consent was obtained before the questionnaire was displayed, and participants could withdraw at any stage without academic consequences.

Statistical analysis

Responses were exported to Microsoft Excel (Microsoft Corporation, Redmond, WA) and analysed in Python 3 (Python Software Foundation, Fredericksburg, VA, US) using the SciPy library. Categorical data are presented as n (%), with all percentages calculated on the 206 respondents. Percentages are calculated on the number of respondents answering each item; unanswered items are reported as not reported in counts only and are excluded from percentages and tests. For Likert items, favourable responses were agree plus strongly agree, neutral was neutral, and unfavourable was disagree (and strongly disagree where recorded). The 50% reference value marks whether favourable responses outnumber all other responses combined; it is a descriptive benchmark and not a validated threshold of credibility or acceptance.

Ninety-five percent CIs for proportions were calculated by the Wilson method [16]. For each Likert item, the favourable proportion was compared with 50% using a two-sided exact binomial test.

Exact binomial test:

$$X \sim \text{Binomial}(n, 0.5)$$

$$p = 2\min\{P(X \leq x),\ P(X \geq x)\}$$

where x is the observed number of favourable responses, and the distribution of responses across the recorded categories was tested with a chi-square goodness-of-fit test against equal frequencies.

Chi-square goodness-of-fit test:

$$\chi^2 = \sum_{i=1}^{k} \frac{(O_i - E_i)^2}{E_i}$$

$$df = k - 1$$

where O is the observed and E the expected frequency, with k − 1 degrees of freedom for k categories. The same tests were applied to the distributions of academic year, gender, usage frequency, and preferred video length. Because nine items were each tested against 50%, p-values were adjusted with the Holm procedure. A p-value below 0.05 was considered statistically significant. Respondent-level cross-tabulations (for example, by gender or academic year) were not part of this analysis.

Results

Participant characteristics and social media use

A total of 206 undergraduate dental students completed the survey (Table *1*). Among the 174 who reported their academic year, 108 (62.1%) were interns, 34 (19.5%) fourth-year and 32 (18.4%) third-year students; 32 (15.5% of all respondents) did not report their year. No first- or second-year student was identified among those who reported their year. The distribution across the three reported levels was unequal (χ^2=64.7, df=2, p<0.001), reflecting the predominance of interns. The sample therefore reflects mainly senior students and interns. Gender was reported by 201 respondents: 130 (63.1%) were female, 71 (34.5%) were male, and 5 (2.4%) did not report gender.

Variable	Category	n (%)	Test statistic	p-value
Academic year (n=174 reporting)	1st year BDS	0 (0.0%)	χ^2=64.7	<0.001
Academic year (n=174 reporting)	2nd year BDS	0 (0.0%)	χ^2=64.7	<0.001
Academic year (n=174 reporting)	3rd year BDS	32 (18.4%)	χ^2=64.7	<0.001
Academic year (n=174 reporting)	4th year BDS	34 (19.5%)	χ^2=64.7	<0.001
Academic year (n=174 reporting)	Intern	108 (62.1%)	χ^2=64.7	<0.001
Academic year (n=174 reporting)	Not reported	32 (15.5%)*	χ^2=64.7	<0.001
Gender (n=201 reporting)	Female	130 (64.7%)	x=130/201	<0.001
Gender (n=201 reporting)	Male	71 (35.3%)	x=130/201	<0.001
Gender (n=201 reporting)	Not reported	5 (2.4%)*	x=130/201	<0.001
Social media use for dental education (n=193 answering)	Never	0 (0.0%)	χ^2=24.5	<0.001
Social media use for dental education (n=193 answering)	Rarely (once a month)	37 (19.2%)	χ^2=24.5	<0.001
Social media use for dental education (n=193 answering)	Sometimes (1-2 times/week)	75 (38.9%)	χ^2=24.5	<0.001
Social media use for dental education (n=193 answering)	Often (3-5 times/week)	51 (26.4%)	χ^2=24.5	<0.001
Social media use for dental education (n=193 answering)	Very frequently (daily or almost daily)	30 (15.5%)	χ^2=24.5	<0.001
Social media use for dental education (n=193 answering)	Not reported	13 (6.3%)*	χ^2=24.5	<0.001
At least weekly use (n=193 answering)	Yes	156 (80.8%; 95% CI: 74.7-85.8)	x=156/193	<0.001

TABLE 1: Participant characteristics and baseline social media use

Percentages are based on the number of respondents who answered each variable (174 for academic year, 201 for gender, 193 for social media use).

*Not-reported percentages are shown against all 206 respondents and are not included in the other percentages. Categories with no responses are shown for completeness and were not included in the chi-square tests. The test statistic and p-value in each row refer to the whole variable, not to the single category in that row. Academic year (3 categories with responses, df=2) and frequency of social media use (4 categories with responses, df=3) were tested with chi-square goodness-of-fit tests against equal frequencies. Gender (female vs. male) and at least weekly use were tested with two-sided exact binomial tests against 50% (test statistic: x/n, the observed number of successes over the number tested).

BDS: Bachelor of Dental Surgery; CI: confidence interval (Wilson); df: degrees of freedom.

Social media was widely used for dental education (Table 1). Overall, 156 of 193 (80.8%) respondents used it at least once a week (95% CI: 74.7-85.8), significantly more than half (exact binomial p<0.001); this represents 156 (80.8%) of the 193 who answered the question. The most common frequency was 1-2 times per week in 75 (38.9%), 3-5 times per week in 51 (26.4%), once a month in 37 (19.2%), and daily in 30 (15.5%) of the 193 who answered; none selected 'Never', and 13 (6.3% of all respondents) did not answer. Frequency categories were unevenly distributed (χ^2=24.5, df=3, p<0.001).

Perceived credibility and institutional endorsement

Table 2 shows the response distribution for items 4 to 12, and Table 3 shows favourable proportions with CIs and tests. Faculty-verified short videos were considered credible by 104 (50.5%; 95% CI: 43.7-57.2), with 65 (31.6%) neutral and 26 (12.6%) unfavourable. Greater trust in officially endorsed content was reported by 99 (48.1%; 95% CI: 41.3-54.9), with 66 (32.0%) neutral and 30 (14.6%) unfavourable. Neither proportion differed from 50% (p=0.944 and p=0.626, respectively), so these items indicate that about half of respondents were favourable rather than a clear majority.

Item	Strongly agree, n (%)	Agree, n (%)	Neutral, n (%)	Disagree, n (%)	Not reported, n (%)	Test statistic (χ^2, df=3)	p-value
Faculty-verified short videos are credible sources (item 4)	25 (12.1%)	79 (38.3%)	65 (31.6%)	26 (12.6%)	11 (5.3%)	46.37	<0.001
More trust when officially endorsed (item 5)	20 (9.7%)	79 (38.3%)	66 (32.0%)	30 (14.6%)	11 (5.3%)	49.04	<0.001
Short videos improve concept understanding (item 6)	31 (15.0%)	82 (39.8%)	56 (27.2%)	26 (12.6%)	11 (5.3%)	40.84	<0.001
Micro-learning improves procedural retention (item 7)	30 (14.6%)	80 (38.8%)	57 (27.7%)	31 (15.0%)	8 (3.9%)	34.53	<0.001
Confident applying knowledge clinically (item 8)	27 (13.1%)	79 (38.3%)	65 (31.6%)	25 (12.1%)	10 (4.9%)	45.22	<0.001
Short videos reduce cognitive overload (item 9)	32 (15.5%)	87 (42.2%)	53 (25.7%)	26 (12.6%)	8 (3.9%)	46	<0.001
Verified micro-learning should be integrated into curriculum (item 10)	30 (14.6%)	94 (45.6%)	51 (24.8%)	20 (9.7%)	11 (5.3%)	66.27	<0.001
More engaged with short-video format (item 11)	31 (15.0%)	88 (42.7%)	56 (27.2%)	19 (9.2%)	12 (5.8%)	57.59	<0.001
Verified videos increase motivation to revise (item 12)	37 (18.0%)	83 (40.3%)	57 (27.7%)	29 (14.1%)	0 (0.0%)	33.77	<0.001

TABLE 2: Response distribution for perception items (items 4 to 12)

Percentages are based on the number of respondents answering each item (shown in the 'n answering' column). Not-reported responses are given as counts only and are excluded from percentages and tests. Percentages may not total 100.0 because of rounding. 'Strongly disagree' was an available option for all items but was not selected for items 4 to 11, so the 'Disagree' column contains disagree responses only for these items. For item 12, 'Disagree' includes 'strongly disagree' responses (combined during coding). The χ^2 statistic and p-value are from chi-square goodness-of-fit tests of equal frequencies across the four categories shown (strongly agree, agree, neutral, disagree), df=3.

df: degrees of freedom.

Item	Favourable, n (%)	95% CI (%)	Neutral, n (%)	Unfavourable, n (%)	Not reported, n (%)	Test statistic (z-value)	p-value, unadjusted (Holm-adjusted)
Faculty-verified short videos are credible sources (item 4)	104 (50.5%)	43.7-57.2	65 (31.6%)	26 (12.6%)	11 (5.3%)	z = 0.07	0.944 (1.000)
More trust when officially endorsed (item 5)	99 (48.1%)	41.3-54.9	66 (32.0%)	30 (14.6%)	11 (5.3%)	z = -0.49	0.626 (1.000)
Short videos improve concept understanding (item 6)	113 (54.9%)	48.0-61.5	56 (27.2%)	26 (12.6%)	11 (5.3%)	z = 1.32	0.185 (0.927)
Micro-learning improves procedural retention (item 7)	110 (53.4%)	46.6-60.1	57 (27.7%)	31 (15.0%)	8 (3.9%)	z = 0.91	0.365 (1.000)
Confident applying knowledge clinically (item 8)	106 (51.5%)	44.7-58.2	65 (31.6%)	25 (12.1%)	10 (4.9%)	z = 0.35	0.728 (1.000)
Short videos reduce cognitive overload (item 9)	119 (57.8%)	50.9-64.3	53 (25.7%)	26 (12.6%)	8 (3.9%)	z = 2.16	0.031 (0.214)
Verified micro-learning should be integrated into curriculum (item 10)	124 (60.2%)	53.4-66.6	51 (24.8%)	20 (9.7%)	11 (5.3%)	z = 2.86	0.004 (0.038)
More engaged with short-video format (item 11)	119 (57.8%)	50.9-64.3	56 (27.2%)	19 (9.2%)	12 (5.8%)	z = 2.16	0.031 (0.214)
Verified videos increase motivation to revise (item 12)	120 (58.3%)	51.4-64.8	57 (27.7%)	29 (14.1%)	0 (0.0%)	z = 2.30	0.021 (0.170)

TABLE 3: Favourable responses and tests against 50% for perception items

Favourable responses were agree or strongly agree; unfavourable responses were disagree (including strongly disagree, where recorded). Percentages are based on all 206 respondents. The 95% confidence intervals were calculated by the Wilson method. Each favourable proportion was compared with 50% using a two-sided exact binomial test, which gave the p-values. The test statistic is the corresponding z-value from the normal approximation with continuity correction, $z = (|x - n/2| - 0.5)/\sqrt{(n \times 0.25)}$, where x is the number of favourable responses and n=206; its sign is positive when the favourable proportion is above 50% and negative when below. The p-value column gives the unadjusted p-value, followed in parentheses by the Holm-adjusted p-value that accounts for multiple comparisons across the nine perception items. Not-reported counts are the total sample (206) minus the sum of favourable, neutral, and unfavourable responses. Statistical significance was set at $p<0.05$; after Holm adjustment, only item 10 remained significant.

CI: confidence interval.

Educational utility, procedural retention, and clinical confidence

Short videos were reported to improve understanding of clinical concepts by 113 (54.9%; 95% CI: 48.0-61.5), to help retain procedural steps better than long lectures by 110 (53.4%; 95% CI: 46.6-60.1), and to support confidence in applying the knowledge clinically by 106 (51.5%; 95% CI: 44.7-58.2). Neutral responses were given by 56 (27.2%), 57 (27.7%), and 65 (31.6%) for these items, respectively. None of the three proportions differed significantly from 50% (p=0.185, p=0.365, and p=0.728).

Perceived cognitive overload, engagement, motivation, and curricular acceptance

Reduced cognitive overload relative to longer instructional media was reported by 119 (57.8%; 95% CI: 50.9-64.3), and greater engagement with the short-video format by 119 (57.8%; 95% CI: 50.9-64.3). Increased motivation to revise topics when verified videos were available was reported by 120 (58.3%; 95% CI: 51.4-64.8). Formal integration of faculty-verified micro-learning into the curriculum was supported by 124 (60.2%; 95% CI: 53.4-66.6), the highest favourable proportion among all items, with 51 (24.8%) neutral and 20 (9.7%) unfavourable. Before adjustment, these four proportions were each significantly above 50% (items 9 and 11, p=0.031 each; item 12, p=0.021; item 10, p=0.004). After Holm correction across the nine items, only curricular integration remained significant (adjusted p=0.038), whereas the adjusted values for cognitive overload and engagement (0.214 each) and motivation (0.170) were not.

Within every Likert item, responses were unevenly distributed across the four recorded categories (chi-square goodness-of-fit, df=3, χ^2 range: 33.8 to 66.3, all $p<0.001$), with agree the modal response in each case. Across the nine items, favourable proportions ranged from 99 (48.1%) to 124 (60.2%).

Preferred video length

Preferences for maximum video length were unevenly distributed (χ^2=22.8, df=3, p<0.001; Table 4). The most common choice was 2-5 minutes, selected by 69 (33.5%), followed by 6-10 minutes in 66 (32.0%), more than 10 minutes in 44 (21.4%), and less than 2 minutes in 27 (13.1%). In total, 135 (65.5%) chose 2-10 minutes (95% CI: 58.8-71.7), significantly more than half (exact binomial p<0.001).

Preferred maximum video length	n (%)	95% CI (%)	Test statistic	p-value
<2 minutes	27 (13.1%)	9.2-18.4	χ^2=22.78	p<0.001
2-5 minutes	69 (33.5%)	27.4-40.2	χ^2=22.78	p<0.001
6-10 minutes	66 (32.0%)	26.0-38.7	χ^2=22.78	p<0.001
>10 minutes	44 (21.4%)	16.3-27.5	χ^2=22.78	p<0.001
2-10 minutes (combined)	135 (65.5%)	58.8-71.7	x=135/206	p<0.001

TABLE 4: Preferred maximum length of educational dental videos

Percentages are based on all 206 respondents, all of whom answered this item. The first four rows (the mutually exclusive length categories) share one chi-square goodness-of-fit test of equal frequencies (test statistic: χ^2, df=3). The combined 2-10-minute row was tested against 50% with a two-sided exact binomial test (test statistic: x/n, the observed number of respondents over the number tested).

CI: confidence interval (Wilson method); df: degrees of freedom.

Statistical formulas (LaTeX)

Chi-square goodness-of-fit test:

$$\chi^2 = \sum_{i=1}^{k} \frac{(O_i - E_i)^2}{E_i}$$

$$df = k - 1$$

Exact binomial test:

$$X \sim \text{Binomial}(n, 0.5)$$

$$p = 2\min\{P(X \leq x),\ P(X \geq x)\}$$

where O = observed frequency, E = expected frequency, k = number of categories, df = degrees of freedom, n = total sample size, and x = observed number of favourable responses.

Discussion

Principal findings

In this voluntary online survey, about half to three-fifths of respondents viewed faculty-verified short-form videos favourably across credibility, learning, cognitive load, and engagement items. Support was highest for formal curricular integration and was the only item that stayed significantly above 50% after correction for multiple testing. Most respondents preferred videos of 2-10 minutes. Perceptions of credibility, understanding, retention, and clinical confidence clustered around 50%, so a clear majority cannot be claimed for these domains. These are self-reported perceptions from a non-probability sample and do not show that learning improved.

Social media use among dental students

Weekly use of social media for dental education by 156 of 193 (80.8%) respondents is consistent with other work. In a Saudi study of 1034 dental students from the third year to internship, 70.8% used social media for dental learning [8]. A Turkish survey of 302 dental students found that 78.8% followed endodontic content on platforms such as Instagram and YouTube [17]. Senior dental students in Saudi Arabia likewise reported watching clinical procedure videos and seeking online resources [18]. Indian data point in the same direction. A survey at a government dental college in Mumbai found positive responses towards social

media in dental education among faculty and residents [19], and a study in Chengalpattu reported that most postgraduates considered social media effective in dental practice [20]. A large study across several institutions confirmed YouTube as a common source for learning clinical procedures [21].

Credibility and institutional verification

Only 104 (50.5%) respondents rated faculty-verified videos as credible and 99 (48.1%) reported greater trust in endorsed content, with roughly one-third neutral. This ambivalence may reflect uncertainty about what verification involves, or experience of mixed-quality content. Reliability is a documented problem. An analysis of dental YouTube videos found that most lacked reliability and that few came from academic institutions [22], a later study of who provides dental education content on YouTube reached a similar conclusion [23], and 36% of dental students in a multi-institution study were concerned about the lack of scientific foundation in the videos they watched [21]. Professionalism is a parallel concern, since some dental students show limited awareness of ethical standards online [18,24], and e-professionalism lapses are a recognised risk for health professionals [13]. Our design did not compare verified with unverified material, so they cannot say that endorsement causes higher trust. The finding supports only the narrower point that a substantial minority remained neutral or unfavourable even towards verified content.

Learning, retention, and perceived cognitive overload

Perceived benefits for understanding, retention, and cognitive load fit the theoretical rationale for micro-learning. Cognitive load theory proposes that limits on working memory make segmented, focused instruction easier to process [4]. In health professions education, micro-learning has been associated with better knowledge, retention, and confidence in performing procedures [2], and a controlled study in higher education found higher post-test scores with a micro-learning module [25]. Instructor-produced video has also been used with some success in dentistry; a Korean flipped-classroom study using faculty YouTube lectures reported improved comprehension [26], and a randomised crossover study in implant education reported comprehension from Instagram Reels at least equivalent to standard video [14]. Our respondents' perceptions point the same way, but perceived retention and clinical confidence were not significantly above 50%, and perception is not performance. Objective assessment, such as pre-clinical rubric scores or Objective Structured Clinical Examination (OSCE) performance, is needed before claims about clinical benefit can be made.

Curricular integration

Support for integrating verified micro-learning into the curriculum by 124 (60.2%) respondents, the strongest signal in this study, is in line with the wider view that social media can supplement formal teaching. A scoping review of social media in oral health education is among the sources cited in support of its educational use [27]. Among Mumbai dental professionals, residents were more keen than faculty on developing social media as a primary aid in dental education [19], suggesting that enthusiasm may be strongest among learners, whereas faculty may need convincing. Our sample was dominated by interns, who have the most clinical exposure, and a Turkish study found that perceived educational benefit rose with academic seniority [17]. This may mean that our estimates are more favourable than those of junior students, who were not identified in our data. Concerns about distraction and problematic use of social platforms [28] also argue for delivering verified content through controlled channels rather than open feeds.

Preferred video length

Because 135 respondents (65.5%) preferred videos of 2-10 minutes, longer than the ⩽3 minutes specified in item 6, the item 6 result applies specifically to videos of ⩽3 minutes. Only 27 (13.1%) respondents preferred videos under 2 minutes. This fits evidence from online courses that engagement falls as videos lengthen, with shorter videos engaging learners most (Guo PJ, Kim J, Rubin R: How video production affects student engagement: an empirical study of MOOC videos. Proceedings of the First ACM Conference on Learning @ Scale. ACM, New York, NY. 2014, 41-50), and guidance that educational videos should be segmented and focused rather than merely brief [29]. Studies of micro-learning in health professions education have typically used segments under 15 minutes [2]. Dental procedures need enough time to show steps such as margin placement or soft tissue handling, so the optimal length probably depends on the task. A modest, procedure-based length of a few minutes appears to suit these respondents better than hyper-short clips.

Implications for practice

Faculty could develop short videos for prosthodontic and restorative procedures, with clear learning objectives, a peer-review step before release, and attention to patient privacy and e-professionalism. Verification criteria should be stated openly so that students know what endorsement means. Because about a third of respondents were neutral about credibility, pairing videos with references and teaching students to evaluate sources is likely to matter as much as the format itself.

Limitations

This study has several limitations that affect how its findings should be read. Participation was voluntary and

no sampling frame existed, so the planned stratified random sample was replaced by a voluntary convenience sample. Self-selection is therefore likely, the response rate cannot be calculated, and respondents may differ systematically from non-respondents, for example by being more interested in social media or more favourable towards digital learning. The sample was dominated by interns (108 of 174 respondents reporting year, 62.1%), the academic year was not reported by 32 respondents (15.5% of all respondents), and no first- or second-year students were identified. Respondents' institutions were not recorded, so the study is not multi-institutional and the findings cannot be attributed to any set of colleges. These estimates therefore cannot be generalised to all BDS students in Maharashtra or India, and the CIs and p-values describe sampling variability only if the sample is treated as random.

The instrument was developed by the authors for this study. Although the questionnaire was informed by the study objectives and relevant literature, no formal expert validation or pilot survey was conducted, and its reliability and validity were not formally assessed. Credibility, educational acceptance, perceived cognitive overload, and the other constructs were each measured with a single item. A single item cannot capture the multidimensional nature of such constructs, so responses should be read as item-level perceptions and not as scores on validated scales. Faculty verification was defined by the investigators as review of a video's content for accuracy by a qualified faculty member before release, and institutional endorsement as official release or approval by the institution or department. These working definitions, a standard description, and an example of faculty-verified videos were not included in the questionnaire, and prior exposure to such content was not recorded. Responses may therefore reflect respondents' own interpretations or expectations, not experience of a defined intervention. Video duration was specified in only one item (item 6, 3 minutes or less), while the other items referred to short-form videos without a stated length.

Outcomes were self-reported perceptions. No learning or clinical outcomes were measured, no intervention was implemented, and the survey did not compare verified with unverified content, so the findings do not show that learning improved. Support for curricular integration reflects student preference, not evidence of educational effectiveness or readiness for curriculum-wide implementation. The analysis was limited to distributions and one-sample tests, and comparisons by gender, academic level and usage frequency were not performed, so subgroup differences remain unexamined. The 50% reference value is a descriptive majority benchmark and not a validated threshold of credibility or acceptance, and the chi-square tests against equal frequencies are descriptive only. Finally, favourable proportions were close to 50% for several items, and six of the nine items did not remain significant after correction for multiple testing.

Implications and future directions

These findings may inform a future pilot in which faculty develop short videos for prosthodontic and restorative procedures, with clear learning objectives, a peer-review step before release, and attention to patient privacy and e-professionalism. The present study did not evaluate any faculty-produced intervention, so this is a suggestion for testing and not a practice recommendation.

Conclusions

In this self-selected sample, drawn predominantly from senior students and interns, they generally held mixed to moderately favourable perceptions of faculty-verified short-form video learning. Their strongest signal was in support of bringing such material into the formal curriculum, while views on credibility and clinical confidence were more divided, and preferred videos were of a few minutes rather than seconds.

Faculty-verified micro-learning could be examined in a pilot as a supplement to teaching, with transparent verification and attention to professionalism. These findings are perceptions from a non-probability sample of mainly senior students and interns and do not show that learning improved. Any pilot should include objective educational outcomes (for example, OSCE or pre-clinical practical scores) and a comparison with existing teaching approaches before curricular change is recommended.

Appendices

Perceived Credibility and Educational Acceptance of Faculty-Verified Social Media Microlearning in Undergraduate Dental Curriculum: A Cross-Sectional Study		
No.	Question/Response options	Response
SECTION A: Demographic Information (1-3)		
SECTION B: Core Study Questions (4-13)		
1	Academic Year	□ 1st Year BDS □ 2nd Year BDS □ 3rd Year BDS □ 4th Year BDS □ Intern
2	Gender	□ Male □ Female □ Prefer not to say
3	How often do you use social media for dental education?	□ Never □ Rarely (once a month) □ Sometimes (1-2 times per week) □ Often (3-5 times per week) □ Very frequently (daily or almost daily)
4	Faculty-verified short-form educational videos are credible sources of dental information.	□ Strongly Disagree □ Disagree □ Neutral □ Agree □ Strongly Agree
5	I trust social media educational content more when it is officially endorsed by faculty or my institution.	□ Strongly Disagree □ Disagree □ Neutral □ Agree □ Strongly Agree
6	Short-form microlearning videos (≤3 minutes) improve my understanding of clinical concepts.	□ Strongly Disagree □ Disagree □ Neutral □ Agree □ Strongly Agree
7	Microlearning videos help me retain key procedural steps better than traditional long lectures.	□ Strongly Disagree □ Disagree □ Neutral □ Agree □ Strongly Agree
8	I feel confident applying knowledge gained from faculty-verified short videos in clinical settings.	□ Strongly Disagree □ Disagree □ Neutral □ Agree □ Strongly Agree
9	Short-form educational videos reduce cognitive overload compared to longer instructional videos.	□ Strongly Disagree □ Disagree □ Neutral □ Agree □ Strongly Agree
10	Faculty-verified microlearning content should be formally integrated into the undergraduate dental curriculum.	□ Strongly Disagree □ Disagree □ Neutral □ Agree □ Strongly Agree
11	I am more likely to engage with educational content if it is delivered in short-form video format.	□ Strongly Disagree □ Disagree □ Neutral □ Agree □ Strongly Agree
12	The availability of verified microlearning videos increases my motivation to revise clinical topics.	□ Strongly Disagree □ Disagree □ Neutral □ Agree □ Strongly Agree
13	What is your preferred maximum length for educational dental videos?	□ Less than 2 minutes □ 2-5 minutes □ 6-10 minutes □ More than 10 minutes
Questionnaire source note: This questionnaire was developed by the authors for the present study. Credits: Tanvi Darshan Denge, Ajay Gaikwad		

TABLE 5: Questionnaire

Additional Information

Author Contributions

All authors have reviewed the final version to be published and agreed to be accountable for all aspects of the work.

Concept and design: Ajay V. Gaikwad, Tanvi D. Denge, Shivsagar Tewary, Abhijeet Kore, Shilpa Soman

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Disclosures

Human subjects: Informed consent for treatment and open access publication was obtained or waived by all participants in this study. Institutional Ethics Committee, Krishna Vishwa Vidyapeeth (Deemed to be University), Karad issued approval Protocol No. 702/2025-2026. The study protocol was approved by the Institutional Ethics Committee of Krishna Vishwa Vidyapeeth (Deemed to be University), Karad (Ref. No. KVV/IEC/07/2026, Protocol No. 702/2025-2026, dated May 15, 2026). Participation was voluntary and anonymous, and electronic informed consent was obtained before participation. **Animal subjects:** All authors have confirmed that this study did not involve animal subjects or tissue. **Conflicts of interest:** In compliance with the ICMJE uniform disclosure form, all authors declare the following: **Payment/services info:** All authors have declared that no financial support was received from any organization for the submitted work. **Financial relationships:** All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. **Other relationships:** All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

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