

## RESEARCH AND EDUCATION

## Exploring the role of Instagram Reels in predoctoral dental implant education, a randomized crossover study

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### ABSTRACT

**Statement of problem.** Dental students frequently exhibit disengagement with traditional long-format lectures and educational videos.

**Purpose.** This study aimed to evaluate students' perceptions and acceptance of short-format social media videos, such as Instagram Reels (IR), compared to traditional long-format (LV) videos.

**Material and methods.** A randomized crossover study was conducted involving third- and fourth-year dental students in the predoctoral implant clinic. Participants were randomly assigned to 2 groups, each receiving both interventions but in different sequences: 1 group watched a series of IR (<2 minutes) followed by LV (>10 minutes) on the same topic (IR-LV). The other group watched the LV first, then the IR (LV-IR group). Questions were administered to assess demographics, learning efficacy, preferences regarding video length, engagement, content clarity, and credibility. Statistical analyses (descriptive statistics, a repeated-measures ANCOVA, independent-samples *t* tests, chi-squared tests) were performed to evaluate the survey responses ( $\alpha=.05$ ).

**Results.** A total of 64 third- and fourth-year dental students participated. Instagram and YouTube were the most common social media platform used by participants. Most students felt the optimum length of the video was 6 minutes. IR's total mean ratings were higher than LV's total mean scores in student engagement, active learning, curiosity, accomplishing tasks quicker, enjoyability, ease of understanding, ease of retention, enhancing learning experience, and increasing efficiency in the clinic. Third-year students rated the IR significantly higher than fourth-year students ( $P=.001$ ), whereas fourth-year students gave higher scores to the LV ( $P=.003$ ). The results revealed a significant main effect of video type on students' perceived effectiveness ( $df=1$ ,  $F=23.68$ ,  $P<.001$ ). A significant interaction was observed between video type and current academic year ( $df=1$ ,  $F=19.91$ ,  $P<.001$ ).

**Conclusions.** Instagram Reels led to higher engagement, curiosity, and retention, with most students favoring content under 6 minutes. Incorporating brief, faculty-reviewed social media content in the curriculum may enhance learning while aligning with modern student preferences. (J Prosthet Dent xxxx;xxx:xxx-xxx)

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper. The author is an Editorial Board Member/Editor-in-Chief/Associate Editor/Guest Editor for this journal and was not involved in the editorial review or the decision to publish this article.

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## Clinical Implications

Dental educators should consider incorporating well-designed short videos on social media platforms, such as Instagram Reels, to supplement conventional teaching methods. This approach aligns with the learning preferences and attention spans of contemporary students, potentially improving engagement and knowledge retention.

Social media has become an essential component of daily life, serving both as a source of entertainment and a platform for information dissemination.<sup>1,2</sup> Current dental students, are digital natives who increasingly rely on social media platforms for academic preparation and learning.<sup>3,4</sup> Growing up immersed in internet and multimedia content, this generation is often characterized by shorter attention spans and a preference for interactive, concise information delivery systems.<sup>5,6</sup> Younger medical students experience greater difficulty sustaining attention during lectures compared with their older counterparts.<sup>7,8</sup> Most contemporary students prefer digital learning experiences over conventional classroom methods, emphasizing the necessity of innovative teaching strategies that align with generational learning preferences.<sup>9–11</sup> Social media's integration of education with entertainment, often referred to as "infotainment," presents a potential approach for enhancing student engagement in this context.<sup>2</sup> The shift underscores the urgency of adopting digital pedagogies that effectively engage younger learners, compelling educators to adapt.

Instagram Reels (IR) were introduced in August 2020 as a response to the growing popularity of short-form video content.<sup>12</sup> This feature quickly gained traction worldwide, becoming one of the leading platforms for short video creation.<sup>13,14</sup> IR has appealed to a younger demographic, with a large portion of its audience being under 30 years old.<sup>15</sup> IR allows "creators" to make short videos (up to 3 minutes) set to music, audio clips, or pre-recorded footage. The app comes with a variety of creative tools and effects like "stickers," "GIFs," "filters," "augmented reality," and "green screens." The videos are recorded using a phone camera, and creators can use in-app editing tools to add audio and visual effects. Once a Reel is ready, it can be uploaded to an Instagram account, with added captions and hashtags, ensuring the creator's followers and general browsing users see their content. A study in radiology reported that static image posts may outperform IR in certain engagement metrics,<sup>16</sup> whereas dermatology research has shown that IR can boost visibility when presenting product-related or educational tips, especially among

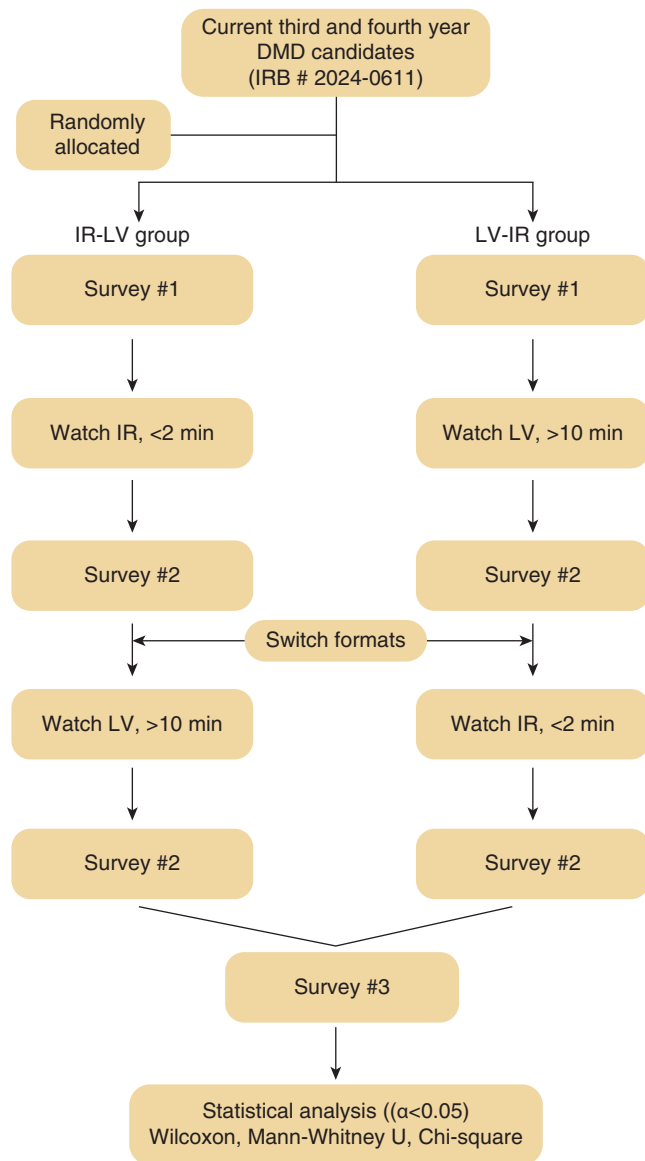
younger demographics.<sup>17</sup> A multi-platform analysis on social media emphasizes the importance of content verification and creator credibility.<sup>18</sup> Additionally, user-behavior research suggests that novelty, escapism, and social-reward motives drive IR usage, potentially transferring well to educational contexts.<sup>19</sup> Furthermore, a view-change study indicates that short-form videos can significantly influence attitudes, particularly when they appear in personalized algorithmic feeds.<sup>20</sup>

IR has emerged as a potential tool to enhance engagement and knowledge retention in dental education.<sup>21,22</sup> IR videos present clinical concepts in highly visual, fast-paced, easily digestible, short segments.<sup>21,22</sup> Unlike traditional videos, which often demand prolonged attention spans,<sup>23</sup> IRs break down information into concise, focused clips that emphasize key takeaways.<sup>24,25</sup> This format has the potential to reduce cognitive overload and improve recall, making complex dental topics more accessible.<sup>10,21</sup> IRs have been widely recognized for their dynamic, fast-paced delivery, which can spark student curiosity and encourage active viewing.<sup>16,17</sup> Additionally, Instagram's interactive features, such as comments, polls, and real-time feedback, create opportunities for student engagement beyond passive learning.<sup>26</sup> However, the authors are unaware of a study comparing the students' perceived usefulness of IR versus traditional, long-format videos (LVs).

This study aimed to evaluate predoctoral dental students' perceptions and acceptance of short-format social media videos, such as IR, compared with a traditional instructional LV. A crossover design was chosen to enhance internal validity by allowing each participant to act as his or her own control.<sup>27,28</sup> This approach also ensured that all participants were exposed to both educational interventions, allowing for direct, within-subject comparisons of learning outcomes and engagement levels.<sup>29,30</sup> The null hypothesis was that predoctoral students' perceived usefulness of educational video would not be affected by the video's length or format.

## MATERIAL AND METHODS

The study workflow is described in [Figure 1](#). The study protocol was approved by the Institutional Review Board of the University of Illinois Chicago (IRB # 2024-0611). Third- and fourth-year predoctoral dental students at the University of Illinois Chicago, College of Dentistry (UIC-COD) were invited to participate in the study and all participants provided informed consent. A random block method was used to randomly assign participants to one of the intervention groups.<sup>31</sup> A power test calculation (G\* Power version 3.1.9.6; Heinrich-Heine-Universität Düsseldorf) was performed by using a



**Figure 1.** Study workflow diagram.

reference study<sup>32</sup>; the number of participants required for the study was determined to be 58, using a 95% confidence level ( $1-\alpha$ ), 80% test power ( $1-\beta$ ) and an effect size of  $d=0.759$ . In the present study, the total sample of 64 participants (32 in each video viewing order group) was consistent with similar within-subjects studies in health and education research.<sup>33</sup> Given that each participant experienced both video conditions, the repeated-measures design increased statistical power by reducing interindividual variability.<sup>34</sup> Moreover, a post hoc assessment based on the observed effect size (partial  $\eta^2=.166$ ) suggested that the achieved sample size was sufficient to detect medium-to-large effects.

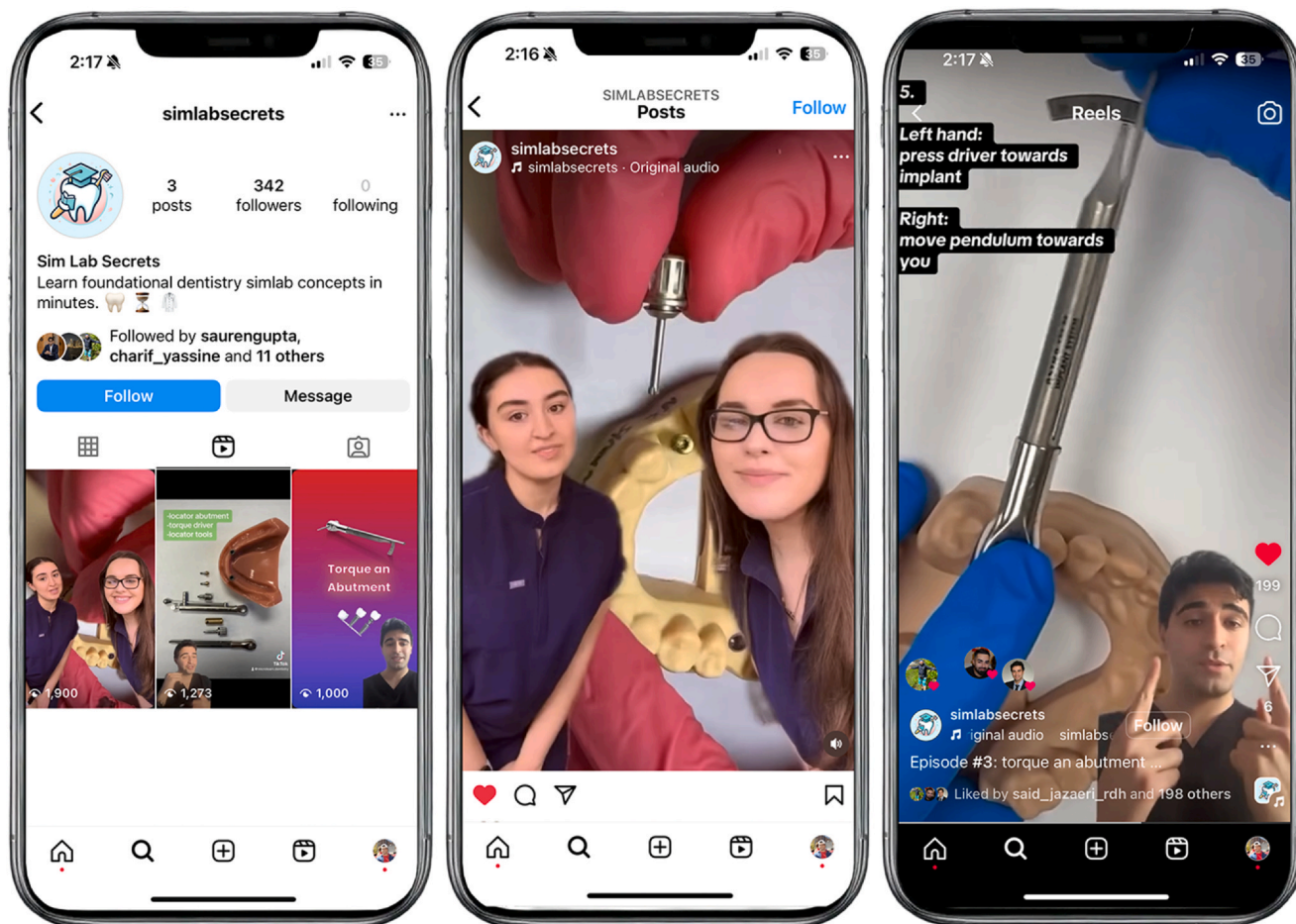
The traditional LVs were produced by faculty to illustrate core procedures routinely performed in the predoctoral implant clinic at UIC-COD, including

single-tooth implant definitive impression techniques, implant-supported prosthesis delivery, and implant-supported overdenture chairside conversion. These videos followed a lecture-style format, where an instructor provided a structured, step-by-step explanation of these clinical techniques, supported by static images, radiographs, and procedural demonstrations recorded in a lecture setting. These videos were typically longer than 10 minutes.

IR content with similar topics were also produced (Fig. 2). During IR production, faculty members performed hands-on demonstrations of these procedures, which were recorded via phone camera by a student team member. Narration scripts were jointly developed and finalized by students and faculty, then performed by student team members in an engaging style to enhance clarity and engagement. The length of the video was under 2 minutes. The videos were edited in collaboration with predoctoral implant clinic faculty members to ensure accuracy and alignment with established clinical standards and curricular objectives. Finally, the videos were uploaded to Instagram (<https://www.instagram.com/simlabsecrets?igsh=MTg5ZmlvZXdiMWU3bQ==>) and launched in early November 2024.

All survey items were adopted from previous studies related to social media and health information technology, with some modifications.<sup>21,35</sup> The crossover design study consisted of 2 phases: in the first phase, students were randomly assigned to one of two groups, with one group initially watching the IR followed by the LV (IR-LV group), whereas the other group followed the reverse sequence (LV-IR group). After random assignment, each participant completed an anonymous baseline survey (Survey #1), assessing demographic characteristics, social media usage habits, and preferences regarding educational video lengths. Survey questions regarding frequency responses were in a 6-point Likert Scale format. Participants then viewed their assigned initial video (IR or LV). Immediately after viewing the first video, participants completed a 14-item survey using a 5-point Likert scale evaluating their perceptions of the video's educational value, engagement, clarity, and helpfulness (Survey #2). Participants subsequently switched to the alternate format, with those who viewed the IR video first watching the LV next, and vice versa. Following the second video, participants completed an identical survey (Survey #2). Subsequently, all participants completed the 6-item survey using a 5-point Likert scale about their perceptions of IR only (Survey #3). The study was conducted from December 2024 to January 2025.

Descriptive statistics were used to determine the mean and standard deviations of scores. To compare students' perceptions of video formats, a repeated-measures ANCOVA was conducted. Independent-



**Figure 2.** Instagram reels educational videos, featuring concise visual explanations and interactive annotations.

samples *t* tests were also used to examine differences across subgroups and to compare social media usage between groups. Chi-squared tests were applied to categorical data, such as demographic distributions of groups ( $\alpha=.05$  for all analyses). All statistical analyses were conducted using statistical software packages (IBM SPSS Statistics, v27.0; IBM Corp, Jamovi (Jamovi, v2.6.44.; The Jamovi Project).

## RESULTS

The obtained data from a baseline survey (Survey #1) indicated that a total of 64 third- and fourth-year predoctoral dental students participated in this crossover study. There was a significant difference between third- and fourth-year students ( $\chi^2=6.478$ ;  $P=.011$ ). More than half (56.2%) of the IR-LV group were fourth-year students, whereas 75% of the LV-IR group were third-year students (Table 1).

In general, participants reported that Instagram and YouTube were the most used social media for entertainment and to obtain dental education-related

information (Survey #1, Table 2). Participants in the LV-IR group reported significantly more frequent use of TikTok ( $P=.014$ ) and Facebook ( $P=.043$ ) for educational purposes compared with those in the IR-LV group. When asked about the optimal length for dental education videos, most participants (81%) of both groups chose a maximum of 6 minutes. Across both groups, participants expressed a high agreement ( $4.3 \pm 0.9$ ) toward subdividing longer videos into shorter segments for easier consumption.

Overall, the IR received higher ratings than the LV on most questions (9 out of 14). Specifically, IRs scored higher in areas such as student engagement, active learning, curiosity, task efficiency, enjoyability, ease of understanding and retention, enhancement of the learning experience, and improved clinical efficiency (Survey #2, Table 3).

After completing both interventions, participants provided feedback specifically on the IR-based educational content in Survey #3. Participants who first viewed the traditional video (LV-IR) rated the IR as more credible, more supportive of self-paced learning, and reported greater confidence in applying the material in clinical practice. They also found it more effective for



**Table 1.** Participant demographics

Demographics		IR-LV group (n=32)	LV-IR group (n=32)	P value	All (n=64)
Year	3rd	14 (43.8%)	24 (75%)	$P=.011$ , $\chi^2=6.478$	38 (59.4%)
	4th	18 (56.2%)	8 (25%)		26 (40.6%)
Age		27.4 $\pm$ 4.0	25.5 $\pm$ 2.3	$P=.068$	26.4 $\pm$ 3.3
Sex	Male	9 (28.1%)	6 (18.8%)	$P=.326$ , $\chi^2=.784$	15 (23.4%)
	Female	23 (71.95)	26 (81.2%)		49 (76.6%)

IR-LV, Instagram Reels-Long Video; LV-IR, Long Video-Instagram Reels

**Table 2.** Independent-samples *t* tests comparing social media usage between groups

	Group	Mean $\pm$ SD	t	P
How often do you use the following apps for entertainment				
YouTube	LV-IR	4.0 $\pm$ 1.4	0.25	.399
	IR-LV	3.8 $\pm$ 1.5		
	All	3.9 $\pm$ 1.4		
TikTok	LV-IR	3.7 $\pm$ 1.9	1.28	.101
	IR-LV	3.0 $\pm$ 2.1		
	All	3.4 $\pm$ 2.0		
Instagram	LV-IR	4.7 $\pm$ 1.3	-0.65	.257
	IR-LV	4.9 $\pm$ 1.4		
	All	4.8 $\pm$ 1.3		
Facebook	LV-IR	2.4 $\pm$ 1.3	-1.62	.054
	IR-LV	3.0 $\pm$ 1.6		
	All	2.7 $\pm$ 1.5		
Snapchat	LV-IR	2.7 $\pm$ 1.7	-0.77	.221
	IR-LV	3.0 $\pm$ 1.8		
	All	2.9 $\pm$ 1.8		
How often do you use the following apps to find information related to dental education				
YouTube	LV-IR	3.5 $\pm$ 1.5	-.047	.318
	IR-LV	3.7 $\pm$ 1.6		
	All	3.6 $\pm$ 1.6		
TikTok	LV-IR	2.8 $\pm$ 1.7	2.24	.014
	IR-LV	2.0 $\pm$ 1.3		
	All	2.4 $\pm$ 1.5		
Instagram	LV-IR	3.4 $\pm$ 1.6	0.22	.410
	IR-LV	3.3 $\pm$ 1.7		
	All	3.3 $\pm$ 1.6		
Facebook	LV-IR	1.7 $\pm$ 1.0	1.74	.043
	IR-LV	1.3 $\pm$ .6		
	All	1.5 $\pm$ 0.9		
Snapchat	LV-IR	1.4 $\pm$ 1.0	0.66	.256
	IR-LV	1.2 $\pm$ .4		
	All	1.3 $\pm$ 0.8		

IR, Instagram Reels; LV, Long Video; SD, standard deviation.

Do not use (0), Less often (1), Several times a week (2), About once a day (3), Several times a day (4), Almost constantly (5)

studying on mobile devices compared to those who initially watched the IR. Participants who viewed the IR first (IR-LV) rated it as more credible when officially endorsed by the curriculum or faculty, compared to those who initially watched the LV. Both groups found the IR to be highly engaging (Table 4).

To further explore potential subgroup differences in perceived effectiveness, independent-samples *t* tests were conducted based on academic year and sex (Table 5). As shown in Table 5, third-year students rated the IR significantly higher than fourth-year students ( $P=.001$ ), whereas fourth-year students gave higher scores to the LV format ( $P=.003$ ). No significant differences were found between male and female students in either condition ( $P>.34$  and  $P>.18$ , respectively).

A repeated-measures analysis of covariance (ANCOVA) was conducted to examine whether students' perceived effectiveness differed between IR and LV formats. Video

type (IR versus LV) was included as a within-subjects factor, video viewing order (LV-IR versus IR-LV) as a between-subjects factor, and academic year (third versus fourth-year) as a covariate. As shown in Table 6, the results revealed a significant main effect of video type on students' perceived effectiveness ( $df=1$ ,  $F=23.68$ ,  $P<.001$ ), indicating that IR was rated significantly higher than LV. Post hoc comparisons confirmed the difference between IR and LV's scores ( $P=.022$ ). There was no significant interaction between video type and video viewing order ( $df=1$ ,  $F=1.52$ ,  $P=.223$ ), suggesting that the sequence in which students watched the videos did not affect their evaluations. However, a significant interaction was observed between video type and current academic year ( $df=1$ ,  $F=19.91$ ,  $P<.001$ ), indicating that the difference in effectiveness ratings between video formats varied across class levels. Neither group order ( $df=1$ ,  $F=1.16$ ,  $P=.286$ ) nor current academic year ( $df=1$ ,  $F=0.14$ ,  $P=.711$ ) alone predicted differences in total scores (Table 6).

## DISCUSSION

This study investigated the integration of Instagram Reels into predoctoral dental implant education and found that IR achieved learning efficacy equivalent to that of LV. All participants perceived IR to be significantly higher in useful engagement, active learning, curiosity, enjoyment, and ease of retention compared with LV. The null hypothesis that predoctoral students' perceived usefulness of educational video would not be affected by the video's length or format was rejected as both the video's length and format influenced students' perceived usefulness of educational videos.

Instagram and YouTube emerged as the most frequently used platforms among dental students for both recreational purposes and accessing education content (Table 2). This finding was consistent with broader trends, as these platforms rank among the most popular globally and are particularly favored by younger individuals.<sup>14,15</sup> It confirms earlier observations that students are increasingly turning to Instagram for educational material,<sup>21,24</sup> reflecting its growing role as a learning tool in dentistry. The affinity of individuals born between 1997 and 2012 for such platforms can be partly explained by their shorter attention spans and preference for concise, engaging content.<sup>5,6</sup> Notably, most

**Table 3.** Perceived usefulness of videos in general as teaching tool

Question	IR-LV Group (n=32)		LV-IR Group (n=32)		All (n=64)	
	IR (Mean $\pm$ SD)	LV (Mean $\pm$ SD)	LV (Mean $\pm$ SD)	IR (Mean $\pm$ SD)	IR (Mean $\pm$ SD)	LV (Mean $\pm$ SD)
The use of <b>xxx</b> as a teaching tool promotes student engagement	4.4 $\pm$ 0.8	3.5 $\pm$ 1.2	3.5 $\pm$ 1.2	4.4 $\pm$ 0.7	4.4 $\pm$ 0.7	3.5 $\pm$ 1.2
The use of <b>xxx</b> as a teaching tool promotes active learning	4.3 $\pm$ 0.9	3.6 $\pm$ 1.2	3.5 $\pm$ 1.2	4.3 $\pm$ 0.9	4.3 $\pm$ 0.9	3.6 $\pm$ 1.2
The use of <b>xxx</b> as a teaching tool increases my curiosity about the content of the module	4.2 $\pm$ 1.0	3.4 $\pm$ 1.1	3.5 $\pm$ 1.0	4.5 $\pm$ 0.7	4.3 $\pm$ 0.9	3.5 $\pm$ 1.1
Using <b>xxx</b> helps me learn the course content better	3.8 $\pm$ 1.0	4.1 $\pm$ 0.9	4.1 $\pm$ 0.9	4.0 $\pm$ 0.7	3.9 $\pm$ 0.9	4.1 $\pm$ 0.9
Using <b>xxx</b> in my study helps me accomplish tasks quicker	3.8 $\pm$ 1.1	3.3 $\pm$ 1.5	3.9 $\pm$ 1.2	4.4 $\pm$ 0.8	4.1 $\pm$ 1.0	3.6 $\pm$ 1.4
Using <b>xxx</b> improves my study performance and productivity	3.6 $\pm$ 1.1	3.8 $\pm$ 1.2	3.9 $\pm$ 1.2	4.0 $\pm$ 0.9	3.8 $\pm$ 1.0	3.8 $\pm$ 1.2
<b>xxx</b> can enhance a learner's understanding of a topic	4.2 $\pm$ 0.7	4.4 $\pm$ 0.7	4.3 $\pm$ 0.8	4.2 $\pm$ 0.7	4.2 $\pm$ 0.7	4.3 $\pm$ 0.7
<b>xxx</b> educational implant lesson video is effective in conveying dental implant concepts and techniques	4.1 $\pm$ 0.9	4.5 $\pm$ 0.7	4.1 $\pm$ 0.9	4.3 $\pm$ 0.8	4.2 $\pm$ 0.9	4.3 $\pm$ 0.8
<b>xxx</b> educational dental implant lesson video is enjoyable	4.6 $\pm$ 0.7	2.8 $\pm$ 1.1	3.3 $\pm$ 1.2	4.4 $\pm$ 0.8	4.5 $\pm$ 0.8	3.0 $\pm$ 1.2
The content presented in the <b>xxx</b> educational dental implant lesson video is easy to understand	4.4 $\pm$ 0.8	3.9 $\pm$ 1.0	4.0 $\pm$ 0.8	4.2 $\pm$ 0.9	4.3 $\pm$ 0.8	4.0 $\pm$ 0.9
The content of the <b>xxx</b> is easy to retain	4.3 $\pm$ 0.7	3.6 $\pm$ 1.1	3.6 $\pm$ 1.0	4.4 $\pm$ 0.8	4.3 $\pm$ 0.8	3.6 $\pm$ 1.0
<b>xxx</b> can enhance my learning experience in dental education	4.3 $\pm$ 0.9	4.1 $\pm$ 1.0	4.2 $\pm$ 0.9	4.3 $\pm$ 0.8	4.3 $\pm$ 0.8	4.1 $\pm$ 0.9
Using <b>xxx</b> increases my efficiency in clinic	3.9 $\pm$ 0.9	3.8 $\pm$ 1.2	4.0 $\pm$ 1.0	4.1 $\pm$ 0.9	4.0 $\pm$ 0.9	3.9 $\pm$ 1.1
Using <b>xxx</b> makes it easier to do my work in clinic	3.9 $\pm$ 0.9	4.0 $\pm$ 1.1	4.2 $\pm$ 0.7	4.3 $\pm$ 0.9	4.1 $\pm$ 0.9	4.1 $\pm$ 0.9

IR, Instagram Reels; LV, Long Video; SD, standard deviation.

Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), Strongly Agree (5)

of the study's participants preferred videos under 6 minutes in length, consistent with other studies indicating that student engagement dropped sharply as video length increased beyond this point.<sup>9</sup>

In the present study, IR received significantly higher ratings for student engagement, active learning, curiosity, enjoyability, and ease of retention, reflecting a clear preference for concise, visually engaging formats over lengthy, lecture-style videos. Since its launch, the IR content has been viewed approximately 1000 times and liked 250 times. Earlier research supported the effectiveness of Instagram as an educational tool, particularly because of its ability to present visually engaging, concise content that caters to contemporary students' preferences.<sup>21,22,24</sup> Instagram's visual and interactive format aligns with cognitive learning theories, which emphasize that combining visual and auditory elements enhances comprehension and retention.<sup>36,37</sup> One advantage is that IRs can be accessed on any device with an internet connection, allowing users to search for Reels, accounts, or specific hashtags—an especially appealing feature for younger students who favor digital learning experiences.<sup>6</sup> Furthermore, IRs can be shared, commented on, and replied to, making them more interactive and engaging beyond the classroom.<sup>12,17</sup>

Participants who watched the LV first rated IR as more credible and expressed greater confidence in applying the learned material in clinical practice. This suggests that establishing a solid foundational understanding may enhance the perceived effectiveness of subsequent short-format content, particularly when learners can see immediate, practical connections. These students were also more likely to prefer shorter video durations, maximum 6 minutes, hinting that comprehensive initial instruction may heighten appreciation for subsequent, concise reinforcements. Exposure to the longer video may have established a foundational understanding, making the subsequent learning content appear more effective and reinforcing its credibility. Such findings suggest educators might strategically implement Instagram-based educational content as a refresher following traditional instructional methods rather than as a standalone educational strategy.

The strong acceptance of social media-based learning in this study reflects broader trends in digital education. Most predoctoral dental students already use social media for academic purposes, and well-designed lecture content can leverage this engagement to enhance learning.<sup>38,39</sup> However, concerns regarding content accuracy, potential distractions, and e-professionalism must be carefully managed through institutional oversight.<sup>40</sup> While format alone may not ensure improved learning outcomes, short-form video content can be more effective when it incorporates immediate clinical relevance and interactive elements.<sup>16,17</sup> Although

**Table 4.** Students' perceptions on Instagram Reels

Question	IR-LV Group (n=32) (Mean $\pm$ SD)	LV-IR Group (n=32) (Mean $\pm$ SD)	All (n=64) (Mean $\pm$ SD)
To what extent do you perceive the IR educational dental implant lesson videos as credible sources of information?	3.1 $\pm$ 0.8	3.8 $\pm$ 0.8	3.5 $\pm$ 0.9
Compared to traditional educational materials, how engaging did you find the IR educational dental implant lesson videos?	4.3 $\pm$ 1.1	4.3 $\pm$ 1.0	4.3 $\pm$ 1.0
IR allows learners to study at their pace	3.2 $\pm$ 1.3	3.9 $\pm$ 1.2	3.5 $\pm$ 1.3
How confident are you in applying the knowledge gained from IR educational dental implant lesson videos in real-life dental practice or academic settings?	3.2 $\pm$ 1.1	3.8 $\pm$ 1.0	3.5 $\pm$ 1.1
If IR dental content were to be verified officially by the curriculum, would you find it any more credible?	4.4 $\pm$ 1.1	4.3 $\pm$ 1.0	4.4 $\pm$ 1.1
IR videos provide learners to study on mobile phones/smartphones with ease	4.2 $\pm$ 1.0	4.5 $\pm$ 0.9	4.4 $\pm$ 1.0

IR, Instagram Reels; LV, Long Video; SD, standard deviation.

Not at all (1), Slightly (2), Somewhat (3), Good (4), Very much (5)

**Table 5.** Independent-samples *t* tests comparing IR and LV total scores by academic year and sex

	Subgroups	N	Mean $\pm$ SD	<i>t</i>	<i>P</i>
IR_total	3rd year	38	61.6 $\pm$ 6.6	3.42	.001
	4th year	26	54.5 $\pm$ 10.2		
LV_total	3rd year	38	50.3 $\pm$ 11.2	-2.79	.003
	4th year	26	57.6 $\pm$ 8.6		
IR_total	Male Students	15	59.5 $\pm$ 8.6	0.39	.34
	Female Students	49	58.5 $\pm$ 9.0		
LV_total	Male Students	15	51.0 $\pm$ 9.6	-0.90	.18
	Female Students	49	53.9 $\pm$ 11.1		

IR, Instagram Reels; LV, Long Video; SD, standard deviation.

**Table 6.** Repeated-measures ANCOVA comparing IR and LV total scores while controlling for academic year

	Sum of Squares	df	Mean Square	F	<i>P</i>
Video Type	2084	1	2083.9	23.68	<.001
Video Type * group order	134	1	133.6	1.52	.223
Video Type * current year	1752	1	1752.1	19.91	<.001
Residual	5368	61	88.0		

Current year covariate variable in ANCOVA model. Group order=video viewing sequence (LV-IR versus IR-LV). Academic year=3rd versus 4th year. Total scores calculated using adapted version of Technology Acceptance Model scale.

students do not inherently regard Instagram as a highly credible educational resource, their perceptions change substantially when the content is verified. As the authors designed the production process, faculty members collaborated closely with the student team to ensure that both the clinical procedures and accompanying narrative scripts met rigorous curricular standards.

A strength of this study was its crossover design, which allowed participants to serve as their own controls for comparing the 2 video formats and minimized the influence of individual variability.<sup>27,28</sup> However, this design also has limitations; without a washout period, knowledge gained from the first video can carry over to the second, potentially inflating the post-test performance for the second format and obscuring true differences in educational efficacy between the formats.<sup>41</sup> Conducting the study at a single institution reduced generalizability, and reliance on self-reported data was susceptible to social desirability bias. Additionally, participants' existing familiarity with implant dentistry concepts could have amplified the perceived effectiveness of learning.

Future research should explore the long-term impact of IR on knowledge retention and clinical

performance, as well as optimal strategies for integrating this technique into comprehensive dental education programs. Multi-institutional investigations are needed to corroborate and extend these findings. Furthermore, examining participants with no previous familiarity with the material, such as first-year predoctoral dental students or those being introduced to a novel topic, would allow for a more accurate assessment of learning efficacy in an introductory learning environment.

## CONCLUSIONS

Based on the findings of this clinical study, the following conclusions were drawn:

1. Participants reported that Instagram and YouTube were the most used social media platforms for entertainment and to obtain dental education-related information.
2. Participants indicated that the optimum length of the dental education video was a maximum of 6 minutes.

3. Instagram Reels promoted student engagement, active learning, curiosity, enjoyability, ease of retention, and the opportunity to study on mobile phones.
4. Instagram Reels were as effective as traditional long-format educational videos in teaching dental implantology and can be used to supplement conventional teaching methods.

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