Opinions of Pre-Service Teachers Toward Positions of Visual Elements in Instructional Videos

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Abstract—This study aims to explore the opinions of pre-service teachers toward various positions of visual elements in instructional videos, using a survey method. The samples were 240 undergraduate pre-service teachers at the University of Phayao. The data was collected using a questionnaire, to survey pre-service teachers' opinions on visual elements placed at different positions in instructional videos. The findings from the descriptive statistical analysis were as follows: (1) Regarding the opinions of the pre-service teachers toward different templates of instructional videos, it was found that they preferred instructional videos that contained presentation graphics and a lecturer, in a video with a transparent background. (2) Concerning the opinions of the pre-service teachers toward specific positions of visual elements in instructional videos, it appeared that they preferred instructional videos containing presentation slides and a lecturer in a video with a transparent background in the bottom right corner. (3) In terms of the appropriate length of instructional videos, the pre-service teachers felt that the appropriate length of an instructional video for each topic was between three and five minutes.

Keywords—positions of visual elements, instructional videos

1 Introduction

Instructional videos are well accepted as they make complex concepts easier to understand with clear visuals, and make learning flexible. In other words, learners are in charge of their own learning while watching videos. They can pause, rewatch, skip and access videos anywhere and at any time [1] In addition, videos attract students' interest in learning and make messages easier to remember. This is because videos are media that deliver messages through sounds, visuals, and texts [2]. Videos can be used as instructional materials in every subject, especially those with complicated contents that need visual presentations; for example, steps in a process and ways to solve scientific and mathematical problems [3]. It is expected that learners' receptiveness and understanding will result from their perception of contents presented in those videos.

The COVID-19 pandemic has forced a shift to online teaching and learning with the use of digital instructional tools, including instructional videos [4, 5]. Unfortunately, not all teachers are experts in instructional video production, and, without the knowledge of visual composition, they are not prepared to produce instructional videos

on their own [6]. Therefore, it is important for teachers to learn how to apply composition techniques to their instructional videos [7].

Determining the positions of images, texts, and graphics in videos to make them more appealing not only beautifies the videos, but also adds value and attraction. Therefore, placing the right visual elements in the correct positions in instructional videos is crucial. According to previous research conducted by [8], the participants were more attracted to the texts presented on the right side of the videos compared to those at the bottom. In addition, [9] studied the relationship between eye movement patterns and perception of complex visual scenes. It was found that different arrangements of texts, images and backgrounds of videos generated different impacts, and having one point of focus on the right side of the videos improved the attention and receptiveness of learners. The study by [8] also found that readers tended to look at and read from the upper left corner first, while the vanishing point on the right drew their attention.

There are a number of principles of composition which can be applied to the visual design of instructional videos. Firstly, the rule of thirds is widely used, since it is simple and easy to understand [11,12]. It helps to create positive thoughts and emotions. The rule evenly divides a scene into thirds, both horizontally and vertically, showing four points of intersection where the main objects should be placed, as they are the ideal points of interest. The most important objects are placed first and small details, if required, added to other positions later. With the major elements in the correct positions, the final presentation will appear more natural and pleasing to the eyes [13, 14, 15]. According to previous research, the same object, at different points, on the rule of thirds grid attracted different levels of attention: the upper left point, the lower left point, the upper right point and the lower right point at 41%, 25%, 20% and 14%, respectively [16].

Secondly, the golden triangle rule is similar to the rule of thirds; however, instead of dividing a scene into nine equal squares, it splits a scene into triangles by drawing a diagonal line from one corner to the other and adding two more diagonals from the other two corners to the main diagonal line. Placing an object at an intersecting point or along a common edge of triangles creates a balanced and satisfying image, while the diagonal line brings movement and flow to the final image [17, 18]. These triangles also lengthen attention span, sustain retention and promote deep connections [19].

Thirdly, the golden ratio rule, also known as the golden spiral, or the Fibonacci spiral, or the Phi grid, is similar to the rule of thirds but more flexible. It enables viewers to focus on the object more effortlessly [20, 21, 22]. According to this rule, the most appropriate position for an image is next to its related information on the left side, since most readers start reading the text from the left. This rule also advises against inserting an image in the middle of a text.

In the production of instructional videos, it is important for teachers to know where to place important information regarding the psychology of learners, and how learners would feel after watching their videos [6]. There are several positions where the main contents can be presented. Firstly, the upper left corner is not ideal for positioning key information, as most viewers are not familiar with having important messages in this location. Secondly, in contrast to avoiding placing information in the upper left corner, the upper right corner can be suitable for dates, times, venues and symbols. Next, the

lower left corner is a good space for some objects or messages since they can be seen quite readily and clearly but do not distract the overall viewing. In addition, the lower right corner is the best location for the most important pieces of information, as they will be seen with just a sweep of the eyes. Lastly, the center should be reserved for major information that needs to be displayed for a long period of time [23, 24].

This study sets out to seek the opinions of pre-service teachers on various positions of visual elements in instructional videos, which can be used as guidelines for developing instructional videos.

Research question
What are the opinions of pre-service teachers toward various positions of visual elements in instructional videos?

Research objective
To explore the opinions of pre-service teachers toward various positions of visual elements in instructional videos.

Definition of term
Positions of visual elements in instructional videos refer to the composition of images, texts, and graphics in instructional videos.

2 Methodology

This survey research was conducted using an online questionnaire to collect data from first year pre-service teachers at the University of Phayao, who had completed online courses.

2.1 Population and sample group

Population: The population of this study were undergraduate students in the faculties of education and teacher education institutions of upper northern Thailand.

Samples: The samples in this study were first year pre-service teachers studying at the University of Phayao, in Academic Year 2021. The sample size was calculated using G*Power [25] with an effect size (F) of .25, alpha error probability (α err prob) of .05 and power of test (1-β err prob) of .95, resulting in the sample size of at least 176 respondents. To make sure that the number of complete responses would exceed the minimum requirement, the data was collected through stratified random sampling from 240 first year pre-service teachers majoring in biology, mathematics, physics, chemistry, English language, Thai language, and sports science at the University of Phayao. Later, simple random sampling was employed, as shown in Table 1.

Table 1. Number of samples categorized by majors (n = 240)

Major	Number of Participants	Percentage
1. Biology	49	20.40
2. Mathematics	24	10.00
3. Physics	32	13.30
4. Chemistry	34	14.20
5. English Language	49	20.40
6. Thai Language	28	11.70
7. Sports Science	24	10.00
Total	240	100.00

2.2 Research instrument

The research instrument used in this study was a questionnaire on the opinions of pre-service teachers toward seven instructional video templates, with different positions of visual elements. The questionnaire consists of three parts as follows:

> Part 1 General Information included three items on respondents' gender, major and year of study.
> Part 2 Opinions of Pre-service Teachers toward Positions of Visual Elements in Instructional Videos, included 18 items scored on a five-point Likert scale.
> Part 3 Opinions of Pre-service Teachers toward Appropriate Lengths of Instructional Videos, included a checklist.

The questionnaire was developed based on the theories of video composition. The questions were created by the researcher and validated by three experts. As a result, the content validity of the questionnaire was one for all items. To assess the face validity, the questionnaire was piloted with five respondents who possessed the same characteristics as the samples. The questionnaire's face validity ranged from .600 to 1.000, and the overall face validity of the questionnaire was .840. Then, the questionnaire was tested with 30 pre-service teachers, whose characteristics were similar to the samples' characteristics to validate its reliability. Using the Alpha Cronbach test, the questionnaire's average reliability was .878 with the overall reliability ranged from .754 to .925.

2.3 Data collection

The researcher contacted the pre-service teachers, who were the samples of this study, in order to explain the process of data collection. The online questionnaire was later distributed to the pre-service teachers to complete.

2.4 Data analysis

Descriptive statistics used in this study were frequencies, means, percentages and standard deviations to determine the distribution and dispersion of the collected data.

3 Results

This study aimed to explore the opinions of pre-service teachers on various positions of visual elements in instructional videos. The results were organized in three areas, as follows: (1) General information of respondents, (2) Opinions of pre-service teachers toward positions of visual elements in instructional videos, and (3) Opinions of pre-service teachers toward appropriate lengths of instructional videos.

3.1 Part 1 general information of respondents

Survey respondents were 240 pre-service teachers, of which 185 (77.1%) were female and 55 (22.9%) were male. The two largest groups of respondents majored in Biology (20.4%) and English Language (20.4%). The percentage of other majors is shown in Table 2.

Table 2. General information of respondents (n = 240)

General Information	Number of Respondents	Percentage
Gender		
Male	55	22.90
Female	185	77.10
Total	240	100.00
Major		
Biology	49	20.40
Mathematics	24	10.00
Physics	32	13.30
Chemistry	34	14.20
English Language	49	20.40
Thai Language	28	11.70
Sports Science	24	10.00
Total	240	100.00

3.2 Part 2 opinions of pre-service teachers toward positions of visual elements in instructional videos

Regarding the opinions of the pre-service teachers toward different templates of instructional videos, it was found that the three most preferred templates were Template 3 Presentation graphics, with a lecturer video utilizing a transparent background (M = 3.554, S.D. = .893), Template 7 Recordings of lectures, with a whiteboard or a screen display (M = 3.337, S.D. = .955) and Template 2 Presentation graphics with a lecturer video in a square (M = 3.272, S.D. = .921), respectively, as illustrated in Table 3.

Table 3. Frequencies and standard deviations of opinions of the pre-service teachers toward different templates of instructional videos (n = 240)

Presentation Template	M	S.D.
Template 1 Lecturer videos without graphics	1.966	1.050
Template 2 Presentation graphics with a lecturer video in a square	3.272	.921
Template 3 Presentation graphics with a lecturer video utilizing a transparent background	3.554	.893
Template 4 Presentation graphics with a lecturer video in a circle	2.803	1.157
Template 5 Presentation graphics without a lecturer video	3.058	1.271
Template 6 Recordings of classroom lectures	3.058	1.271
Template 7 Recordings of lectures with a whiteboard or a screen display	3.337	.955

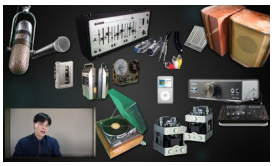
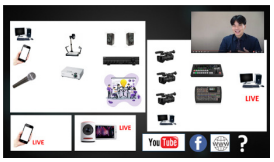
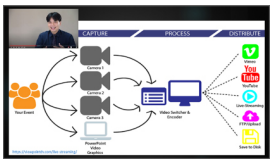
Considering the opinions of the pre-service teachers toward specific positions of visual elements in instructional videos, it appeared that 161 (67.1%) pre-service teachers preferred instructional videos which contained presentation slides and a lecturer video, with a transparent background in the bottom right corner, while 94 respondents (39.2%) were attracted to instructional videos that had presentation graphics, with a lecturer video in a square in the bottom right corner and 72 (30%) preferred screen recordings of online classroom lectures, respectively, as displayed in Table 4.

Table 4. Frequencies and percentages of opinions of pre-service teachers toward different presentation templates (n = 240)

Presentation Template	Level of Response					Total	M	S.D.
	1	2	3	4	5			
Template 1 A lecturer video without graphics							***1.966***	***1.050***
1. A lecturer video without images, graphics or other videos 	102	70	50	10	8	240		
	(42.5)	(29.2)	(20.8)	(4.2)	(3.3)	(100.0)		
Template 2 Presentation graphics with a lecturer video in a square							***3.272***	***.921***
2.1 Presentation graphics with a lecturer video in a square in the bottom right corner 	2	12	60	72	94	240		
	(0.8)	(5.0)	(25.0)	(30.0)	(39.2)	(100.0)		

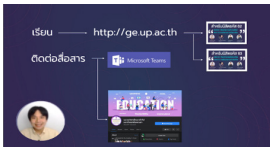
(Continued)

Table 4. Frequencies and percentages of opinions of pre-service teachers toward different presentation templates (n = 240) *(Continued)*

Presentation Template	Level of Response					Total	M	S.D.
	1	2	3	4	5			
2.2 Presentation graphics with a lecturer video in a square in the bottom left corner 	30	38	84	54	34	240		
	(12.5)	(15.8)	(35.0)	(22.5	(14.2)	(100.0)		
2.3 Presentation graphics with a lecturer video in a square in the upper right corner 	36	65	67	34	38	240		
	(15.0)	(27.1)	(27.9	(14.2	(15.8)	(100.0)		
2.4 Presentation graphics with a lecturer video in a square in the upper left corner 	30	49	75	42	44	240		
	(12.5)	(20.4)	(31.3	(17.5	(18.3)	(100.0)		
Template 3 Presentation graphics with a lecturer video with a transparent background							***3.554***	***.893***
3.1 Presentation graphics with a lecturer video with a transparent background in the bottom right corner 	0	1	8	70	161	240		
	(0)	(0.4)	(3.3	(29.2	(67.1)	(100.0)		

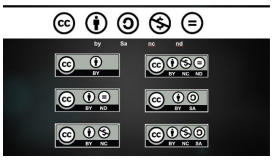
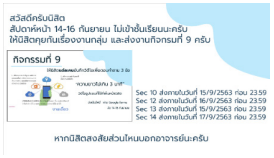
(Continued)

Table 4. Frequencies and percentages of opinions of pre-service teachers toward different presentation templates (n = 240) *(Continued)*

Presentation Template	Level of Response					Total	M	S.D.
	1	2	3	4	5			
3.2 Presentation graphics with a lecturer video with a transparent background in the bottom left corner 	20	30	60	78	52	240		
	(8.3)	(12.5)	(25.0)	(32.5)	(21.7)	(100.0)		
Template 4 Presentation graphics with a lecturer video in a circle							2.803	1.157
4.1 Presentation graphics with a lecturer video in a circle in the bottom right corner 	30	43	62	53	52	240		
	(12.5)	(17.9)	(25.8)	(22.1)	(21.7)	(100.0)		
4.2 Presentation graphics with a lecturer video in a circle in the bottom left corner 	56	51	71	30	32	240		
	(23.3)	(21.3)	(29.6)	(12.5)	(13.3)	(100.0)		
4.3 Presentation graphics with a lecturer video in a circle in the upper right corner 	50	20.8	50	20.8	50	240		
	(65)	(27.1)	(65)	(27.1)	(65)	(100.0)		

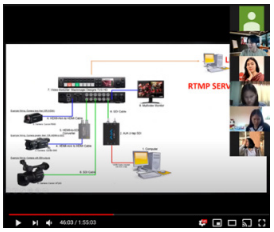
(Continued)

Table 4. Frequencies and percentages of opinions of pre-service teachers toward different presentation templates (n = 240) *(Continued)*

Presentation Template	Level of Response					Total	M	S.D.
	1	2	3	4	5			
4.4 Presentation graphics with a lecturer video in a circle in the upper left corner 	52	63	75	24	26	240		
	(21.7)	(26.3)	(31.3)	(10.0)	(10.8)	(100.0)		
Template 5 Presentation graphics without a lecturer video							***3.058***	***1.271***
5.1 Presentation graphics and voice over without a lecturer video 	50	53	44	43	50	240		
	(20.8)	(22.1)	(18.3)	(17.9)	(20.8)	(100.0)		
5.2 Presentation graphics, texts, and voice over without a lecturer video 	40	45	66	35	54	240		
	(16.7)	(18.8)	(27.5)	(14.6)	(22.5)	(100.0)		
5.3 Infographics and voice over without a lecturer video 	28	57	54	55	46	240		
	(11.7)	(23.8)	(22.5)	(22.9)	(19.2)	(100.0)		
Template 6 Recordings of classroom lectures							***3.058***	***1.271***
6.1 Recordings of onsite classroom lectures 	22	39	63	54	62	240		
	(9.2)	(16.3)	(26.3)	(22.5)	(25.8)	(100.0)		

(Continued)

Table 4. Frequencies and percentages of opinions of pre-service teachers toward different presentation templates (n = 240) *(Continued)*

Presentation Template	Level of Response					Total	M	S.D.
	1	2	3	4	5			
6.2 Screen recordings of online classroom lectures 	14	30	52	72	72	240		
	(5.8)	(12.5)	(21.7)	(30.0)	(30.0)	(100.0)		
Template 7 Recordings of lectures with a whiteboard or a screen display							***3.337***	***.955***
7.1 Recordings of a lecturer in front of a whiteboard or a screen 	10	32	90	56	52	240		
	(4.2)	(13.3)	(37.5)	(23.3)	(21.7)	(100.0)		
7.2 Recordings of a lecturer writing on a screen display 	20	46	76	56	42	240		
	(8.3)	(19.2)	(31.7)	(23.3)	(17. 5)	(100.0)		

3.3 Part 3 opinions of pre-service teachers toward appropriate lengths of instructional videos

In respect of the opinions of pre-service teachers toward the appropriate lengths of an instructional video for each topic, most pre-service teachers (31.1%) thought that each video should be between three and five minutes in length, while 25.4% preferred a video that lasted five to seven minutes, and 25.4% found a video that is nine to eleven minutes in length suitable, as illustrated in Table 5.

Table 5. Frequency and percentage distribution of respondents' opinions on the appropriate lengths of instructional videos (n = 240)

Length of Instructional Videos	Frequency	Percentage
1–3 minutes	10	4.20
3–5 minutes	77	32.10
5–7 minutes	61	25.40
4–9 minutes	38	15.80
9–11 minutes	44	18.30
11–15 minutes	10	4.20
Total	240	100.00

4 Conclusion

Overall, the pre-service teachers preferred instructional videos with presentation graphics and a lecturer video, with a transparent background, and many respondents preferred recordings of a lecturer in front of a whiteboard or a screen display, as well as those videos with presentation graphics and a lecturer video in a square.

More specifically, pre-service teachers preferred instructional videos with presentation slides and a lecturer video with a transparent background (in the bottom right corner), while some enjoyed instructional videos with presentation graphics and a lecturer video in a square in the bottom right corner and, screen recordings of online classroom lectures.

Concerning the length of each instructional video on one topic, the pre-service teachers surveyed wanted mostly to view a video of three to five minutes duration, while many preferred a five-to-seven-minute video and some opted for a video that lasted nine to eleven minutes.

5 Discussion

According to the survey of the opinions of pre-service teachers toward different templates of instructional videos, it was found that most pre-service teachers preferred Template 3 which contained presentation graphics and a lecturer video, with a transparent background. This preference is possibly due to its creative impacts, as set out in the following ways.

In terms of learning, videos with pictures and narrations were better than the those with pictures and texts [26, 27]. When it came to increasing the understanding of content, videos with pictures and narrations were more effective than those with pictures and texts. In respect to presentation, videos with pictures and narrations enabled a better understanding of content, compared to those with pictures and texts [28, 29].

Template 3 created greater connection and interaction between media and lecturer, as a lecturer video attracted learners' attention through making its contents easier to remember and the images helped learners develop a deeper understanding, by creating the meaning of what they viewed faster than they did reading. In addition, viewing of

images helped strengthen memory over listening alone, and the images assisted learners to visualize and understand the contents better [29].

Concerning the opinions of the pre-service teachers toward specific positions of visual elements in instructional videos, the preference was for instructional videos that contained presentation slides, and a lecturer video in the bottom right corner utilizing a transparent background.

The placement of a lecturer in the bottom right corner is in line with the well-known principle of composition, the rule of thirds. Accordingly, the preferred position of a lecturer in a video was the bottom right corner [9, 10], which added a balance to the video and allowed viewers to maintain focus for a longer period [18]. This also conforms with the golden triangle principle, which emphasizes that positioning of objects at the points of intersection or along the diagonal line brings about a satisfying movement and flow on the screen [16, 17]. When applying the golden ratio principle, a lecturer in a video is on the curve which is better than using the rule of thirds' straight line, as learners can view the overall picture with a leading line that ends at the most interesting point in the bottom right corner, resulting in harmony and natural balance. Moreover, such position enables learners to see visual elements that are important and interesting [19, 20, 21]; therefore, major contents are ideally placed at this position, where the objects best catch the eye [23].

For a lecturer video, the headroom rule should be observed, by leaving adequate space above the lecturer's head. However, excessive space would make the video less appealing; therefore, it is important that teachers ensure appropriate headroom space before recording the video [30]. Placing a lecturer in a video in the upper left or right corner may result in insufficient headroom. Although video editing, downsizing, and cropping could help fix the problem, examining the space is a crucial step of making videos.

The eye line of a lecturer is connected to the points of interest which is consistent with the rule of leading lines. For example, with a lecturer video in the lower right corner, when the lecturer looks or points to his/her right, the left side of the screen from student view, audience attention is led to the space where texts, images, graphics, and videos are displayed, to clarify the topic being discussed. This means that teachers should use eye and hand gestures to guide students' visual attention to relevant objects on the screen [31]. Conforming to the long side principle, putting a lecturer video in the lower right corner leaves the screen with a space on the left, and the lecturer may slightly turn to his right to direct the audience eyes to the space and look straight every now and then. As a result, students can feel that the lecturer is talking to them directly [32].

In terms of the appropriate type of shot sizes for instructional videos, a medium shot, also known as a mid-shot (MS) or a waist shot, which highlights a person and a setting equally, is recommended. It is usually used for dialogue scenes, as it equally shows a speaker's facial expression, emotions and gestures as well as the surroundings. In addition, a medium close-up shot is also appropriate since it is better at capturing the detailed facial expressions and emotions compared to a medium shot, allowing students to quickly connect with the teacher [33, 34].

Further, a lecturer video with a transparent background was preferred by most pre-service teachers surveyed. Being able to see the teacher's face clearly, while lecturing or speaking, learners can better relate to the lecturer's feelings and intention to pass on the knowledge. Emphatic facial expressions, voice tones and emotions help create empathic engagement, which are often seen in the introduction videos of online

courses [35]. Also, instructional videos with the appearance of the teacher can capture more student attention, compared with those of PowerPoint presentations or recordings of a lecturer writing on a screen alone. Additionally, using appropriate facial expressions at the right moment increases learners' interest in the video, making it appear as if the teacher is standing in front of a lecturer room.

In terms of communication, teachers should use informal language that they normally used in the physical classroom, as students pay attention to the lessons more when the moods and tones of the videos are casual. Unlike an unfamiliar professional studio setup, having friendlier surroundings as a background enables students to feel comfortable and learn better.

As for the background of a lecturer video, the double exposure effect and the green/blue screen keying technique can be used to create a lecturer video with a transparent background, leaving the space behind for inserting texts, images, graphics, and videos related to the topic. Students are interested and engaged in videos with this template, as the technique makes it appear as if the lecturer was in the actual setting [36]. This is in line with the idea of Jonathan Shead [37], who used a chroma key or a green screen in his video production to improve students' motivation, engagement, and self-directed learning. In the study conducted by Hughes, Pan, & Kendrach [38], on student outcomes and perceptions related to the use of the chroma technology, the students found that the green-screen video modules helped with their learning [39], and they wanted further future courses to incorporate this technology as well.

The analysis of pre-service teachers' opinions revealed that the appropriate length of an instructional video for each topic was between three and five minutes. The video duration is one of the main factors that affects learners' attention, determination and interest in the content presented. This is also found relevant to the findings of many previous studies. Most learners preferred instructional videos that lasted between three and six minutes [40, 41], with the preferred length of videos for online learning at six minutes and no longer [42, 43], as the average length of engagement was six minutes. Moreover, shorter videos were more persuasive and effective than longer ones, as learners tended to lose concentration and interest after six minutes of viewing an instructional video [44]. Therefore, the key to producing more successful instructional videos is to maintain their duration at between three and six minutes.

In addition, instructional videos in which the lecturer speaks enthusiastically at the right speed can lengthen the attention span of learners, while slow paced videos cannot. However, when a lecturer speaks too quickly, students may find it difficult to follow at first. Fortunately, students can replay, pause or rewind videos at a later time. To conclude, it is important that a lecturer determine an appropriate rate of speech and keep the videos short in length and concise in information. The use of short form videos, or micro-videos, is an effective strategy that helps to increase learning and motivation [42]. Therefore, the most appropriate length of each instructional video is three to five minutes. The video should include an introduction, body of content and a summary at the beginning or the end. An instructional video can be one to two minutes shorter or slightly longer, and the additional minutes should be spent on preparing students, reviewing previous lessons, mentioning future lessons, and introducing resources.

The findings of this study can be used as a guideline for developing instructional videos. In brief, instructional videos should contain a video of a lecturer in front of the slide presentation, consisting of topic-related images, texts, and videos. The lecturer in

a video should be positioned in the bottom right corner. In addition, the background of a lecturer video should be transparent, leaving enough space for images, texts and videos to be displayed, and each video should be of three to five minutes duration.

6 Limitations of the study

This study addressed the opinions of pre-service teachers on different positioning of visual elements in instructional videos only. The survey did not include the types of instructional videos they preferred.

7 Recommendations

Considering the opinions of pre-service teachers on different positions of visual elements in instructional videos obtained through this study, some suggestions and recommendations are as follows:

Recommendations for implementation

1. Teachers, students, pre-service teachers, and others responsible for producing instructional videos, can apply the findings of this study in the designs of instructional videos by placing visual elements in appropriate positions to increase audience interest.
2. Teachers, students, pre-service teachers, and others responsible for producing instructional videos, should include related graphics, texts, images, and videos in their instructional videos and place the lecturer in any video, with a transparent background, in the bottom right corner, which allows enough space for the display of texts images, graphics, and videos on the left.
3. The findings of this study indicate that a medium shot should be used for a lecturer video. Since a 16:9 aspect ratio is more attractive to audience, teachers, students, pre-service teachers, those responsible for the production of instructional videos should carefully determine the size of a lecturer video and the aspect ratio of a screen, as well as the composition of visual elements on other screen aspect ratios, such as 4:5 and 1:1.

Recommendations for future research

4. Future studies should investigate how images, texts and graphics placed at various positions, along with different text colors used in instructional videos, affect learners.
5. It would be interesting to investigate the types of contents appropriate to be delivered through instructional videos. Also, it would be useful to find additional elements that help improve learners' perception, memory, and interaction of certain types of contents.
6. A study on different types of instructional videos, such as tutorial videos, micro-videos, scenarios videos, and interactive videos, examining how they can be used to deliver contents and achieve learning objectives can also be conducted.

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