



# Application of Visual Design Principles and Motion Graphic in Re-Design Interactive Learning Video

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## ARTICLE INFO

Received October 28<sup>th</sup>, 2020  
Revised January 7<sup>th</sup>, 2022  
Accepted January 7<sup>th</sup>, 2022  
Available online January 9<sup>th</sup>, 2022

### Keywords

Visual Design Principles, Motion Graphic, Interactive Learning Video.

## ABSTRACT

E-learning-based learning has been widely applied in several educational institutions, one of which is Telkom University (Tel-U). Through the Center of e-Learning and Open Education (CeLOE) program established by Tel-U, network-based learning can be enjoyed by students. However, along the way, CeLOE encountered several obstacles, including the very rigid teaching materials that could have an impact on the reduced learning power of students. To solve this, it is necessary to improve the content of the material, especially learning videos by providing designs and animations for lecturer materials which on average contain full text. The approach used is the principle of visual design by utilizing motion graphics as the main aspect of material content with the ultimate goal of making learning videos more interesting and animated. Thus, the material presented can stimulate interest in learning for students at Telkom University.

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<https://doi.org/10.25124/ijait.v5i01.4264>

Paper\_reg\_number IJAIT000050106 2020 © The Authors. Published by School of Applied Science, Telkom University.  
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## 1. Introduction

Media is a place to store messages [1] [2] in form as material that will be delivered to students in the learning process so that the goals that have been determined can be achieved and run well in the learning process. In other words, media is a tool that is used by lecturers to students for facilitating the delivery of material to achieve an expected learning outcome.

There is a variety of learning media that can be used to design teaching materials, one of them is interactive learning media in the form of learning videos. The use of interactive learning media can support the creation of an interesting and effective learning process atmosphere [3] because the material can be visualized with the help of the media.

One of the universities that implement this variety is Telkom University (Tel-U). By the establishment of a Center for e-Learning and Open Education (CeLOE) as a container in facilitating the implementation of distance education both from the infrastructure and content side. In managing material or content, CeLOE's development unit experiences many problems, one of which is less effective and less attractive learning content due to the limitations of course lecturers in creating content, especially video learning independently. Based on this problem, re-design learning video content is carried out using the principle of visual design by adding a graphic motion that decorates a learning video that is comfortable to see and more interesting with the visual elements in it [4] [5].

## 2. Research Method

The principle of visual design is an approach in changing an object so that the focus on the sense of vision (eye), with the aim that information or designer intentions can be conveyed through visual media such as drawings, charts, grooves, paintings, and others. There are 3 principles of visual design [6].

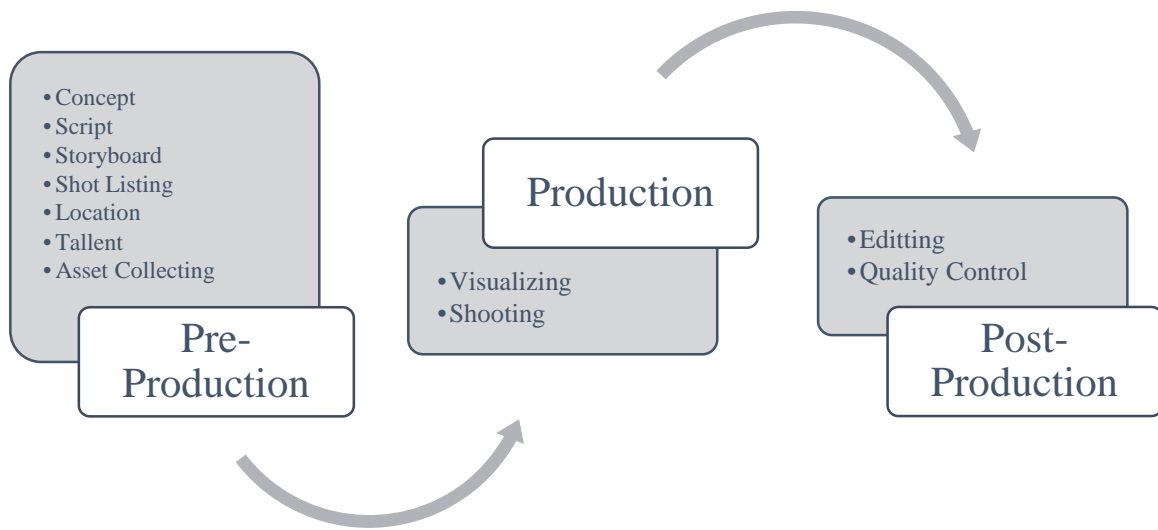
1. Simple. The simple meaning to the point in designing the material, a designer must make the material as simple as possible and focus on the essence of information.
2. Visual. In designing the material, the designer also needs to pay attention to the visual aspects by adding images, graphs, tables, or diagrams.
3. Contrast. Designing contrasting material means showing emphasis on the material. This can be done by distinguishing sizes, colors, or even font.

This video learning content redesign process uses software and hardware that are commonly used by regular users, including:

1. Hardware
  - a. Personal Computer minimum spec Intel Core i3 RAM 2GB 64 bit / 16 GB HDD Free Space CPU
  - b. Wacom Cintiq 16
2. Software
  - a. Windows 10 Home Edition
  - b. Microsoft PowerPoint 2019
  - c. Video Player

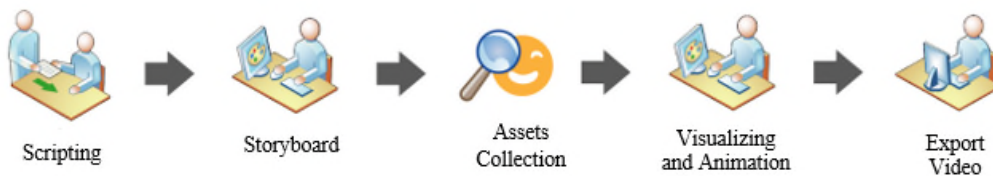
The stages in the process of redesigning video learning content are part of the overall learning video production process in the CeLOE Content Development

Unit. Figure 1 is an overview of the position of the redesign stage at the video learning production stage.



**Figure 1** Learning video production steps

Figure 2 is the redesign stage carried out in the application of the principles of visual design and graphic motion at the Pre-Production stage and the video production stage.



**Figure 2** Re-design of Learning Video Production Steps

The explanation of each of the redesign stages is as follows.

1. Scripting. This stage is an adjustment of sentences or material from the source of material obtained from the lecturer in the form of PowerPoint files (.pptx) in each slide of material from the lecturer to be simpler. At this stage the first visual design principle, Simple is applied. The narrative of the excess material will be converted into the main points presented in the slide so that it will get the essence of each material point.
2. Storyboard. After determining the material points of each slide, a layout will be carried out between the text and visual elements such as images, graphics, icons, etc. At this stage the second visual design principle, Visual, is to convert material points into visual elements such as illustration images, graphics, began, icons, and others. The principle is that images can replace thousands of words, by looking at images then the reader quickly understands what material is delivered.
3. Assets Collection. This stage will look for the right visual asset for each material. In addition, it will accentuate the main information contained in the material, so that the reader will quickly capture the intent of the material submitted. At this stage, the third design principle is contrast, which is

applied means showing emphasis on important information in the material. This can be obtained by distinguishing the sizes and the colors of both the image and font.

4. Visualizing and Animation. After the layout of the text/image and asset elements is obtained, then create animations from the text and image elements to make them look more attractive and attractive. The animation applied can be in the form of motion animation, character animation, and transition. At this stage, the principle of graphical motion is applied, which is to move (animate) elements of material content to be more alive [1].
5. Export Video. The final stage is to turn the entire material slide into a video, at the export stage this video is made green material background like a greenscreen at the shooting stage. The results of this video export are then handled by the video editor to be combined with the results of shooting at the video production stage [7].

### 3. Result and Implementation

The process of re-designing material content on learning videos has resulted in more attractive and animative material content with the aim that students more easily understand the material through visual elements that support lecturer material.

Examples of applying visual design principles can be seen in Figure 3.



**Figure 3** The Material Redesign Uses The Principle of Visual Design

In Figure 3, the first picture (on the left) shows a slide of material from the lecturer which only contains text with excess narration, it makes students will be bored when reading the amount of text. Whereas the second picture (on the right) is the result of redesign by changing the material layout, adding the asset in the form of a shape and illustration image, and accentuating only important information for the reader to immediately capture. Other information on the material has been explained verbally by the lecturer through the shooting stage, so students will immediately use the sense of sight and hearing at the same time in understanding the material [8].

Figure 4 is the application of a graphical motion using features that are in Microsoft PowerPoint software.

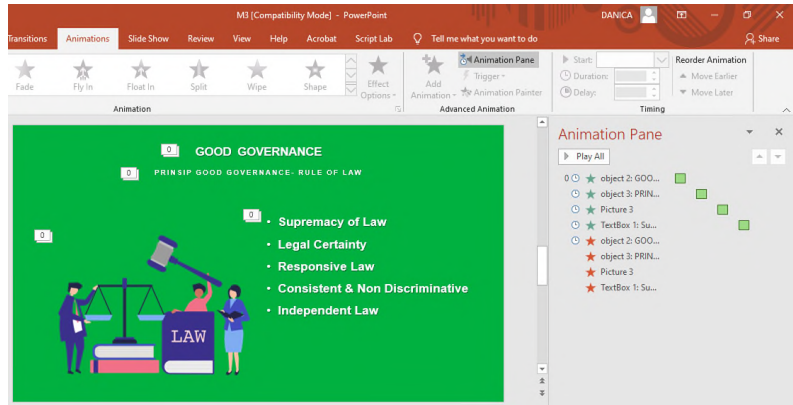


Figure 4 Application of Graphic Motion to The Material

The animation process is applied to elements that are considered worthy of being turned on (animate), both text and images. The type of animation provided is arguably simple, such as Zoom Out/In, Fade, Swipe, and others. In Figure 4 an Animation Panel is created to move the text and images contained on the slide.

In the final stage, there is a video export with a green background which will later be transformed into a setting that has the characteristics of the Telkom University campus. This process is carried out by a video editor through chroma key techniques. Figure 5 shows final result of video export.

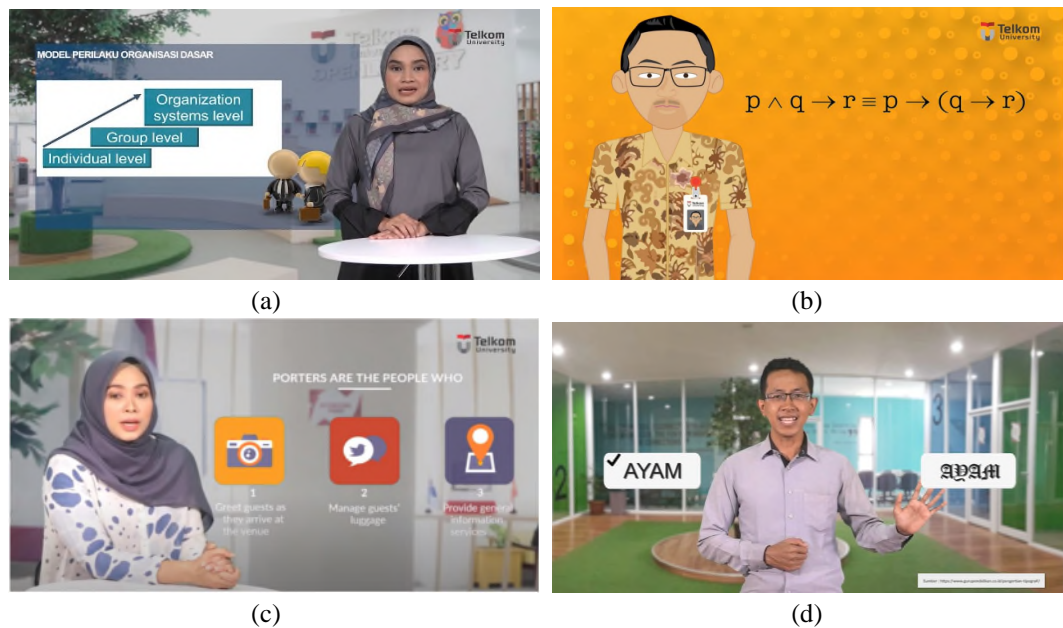


Figure 5 Final Result of Video Export

After going through the video editing and quality control stages at the production stage, video learning will be produced which has video content standards with typical Telkom University elements and interesting material because it has applied the principles of visual design and graphic motion.

Figure 6 is the final display of a learning video that has been completed by applying the principles of visual design and graphic motion.

1. Motion animation in explaining the groove.
2. Animation of a substitute character lecturer.
3. Use of icons instead of bullets.
4. Talent interactions and material content.



**Figure 6** Final Results of Application of Visual Design Principles and Graphic Motion

#### 4. Testing

Learning videos that have been produced by applying graphic design principles will be used as content for the learning media in the LMS (Learning Management System). The CeLOE Content Development Unit has conducted a survey to 82,345 Telkom University students regarding the satisfaction of LMS content and services. One of the components is the clarity and ease of understanding the images and/or videos presented by the lecturer in providing the material. Table 1 is the result of student satisfaction obtained in the survey [9][10].

**Table 1** Results of student satisfaction survey on LMS

No	Question	Percentage (%)
1	The ability of lecturers to operate the features in the LMS.	82.35
2	Completeness of the provision of course materials such as files, videos, and URLs.	82.44
3	Completeness of providing information and course content outside of material such as Course Identity, Course Profile, Learning Outcomes, and References.	82.47
4	Clarity of lecturers in giving assignments or quizzes through LMS.	82.28
5	Lecturer's punctuality in providing content or lecture material.	82.41
6	Clarity and ease of understanding the text presented by the lecturer in providing the material.	82.27
7	Clarity and ease of understanding the images and/or videos presented by the lecturer in providing the material.	82.35
8	The suitability of the content and material format provided by the lecturer.	82.54
9	Transparency of assessment of assignments or quizzes given by lecturers.	82.2
10	Feedback and interaction facilities (forum) provided by lecturers at LMS.	82.14

Based on Table 1, it can be seen that 82.35 students of Telkom University were satisfied with the clarity and ease of pictures and videos provided by the lecturer in presenting learning materials.

## 5. Conclusions

Learning videos are the main material in online learning and have become common to lecturers in delivering learning material [11][12]. The limitations of lecturers in making video concepts and designs independently produce monotonous material content and tend to be full of text that can result in students quickly getting bored and reluctant to continue viewing videos [13]. The application of visual design and graphic motion is needed to support the material and facilitate student understanding and learning, because students tend to focus on the first 10-20 seconds of the video to enjoy the next part, if at the beginning of the video it feels boring then students tend to leave videos that are ultimately not delivered [12].

The content redesign process has been applied to lecture-subject learning videos at Telkom University to be displayed through the LMS (Learning Management System) as a media learning online between lecturers and students [14][15]. The results of this learning video redesign process were measured through a survey and showed that the majority of Telkom University students were satisfied with the clarity and ease of the images or videos displayed.

## Bibliography

- [1] R. Mamase, "Pemanfaatan Visual Animasi Sebagai Media Interaktif Untuk Meningkatkan Minat Belajar," *Jurnal Abdimas Gorontalo (JAG)*, vol. 2, no. 2, pp. 88–94, 2019.
- [2] S. B. Sartika, "Pengembangan Perangkat Pembelajaran Fisika Berorientasi Model Pembelajaran Pemaknaan untuk Meningkatkan Hasil Belajar Siswa," *PEDAGOGIA: Jurnal Pendidikan*, vol. 1, no. 1, p. 65, 2011.
- [3] Brinkmann, Ron. *The art and science of digital compositing: Techniques for visual effects, animation and motion graphics*. Morgan Kaufmann, 2008.
- [4] Betancourt, Michael. "Experimental Animation and Motion Graphics." *Experimental Animation: From Analogue to Digital*, Taylor & Francis, 2019.
- [5] Sidhartani, Santi. "Elemen Visual Dan Prinsip Desain Sebagai Bahasa Visual Untuk Menyampaikan Rasa, Studi Kasus: Aplikasi Elemen Visual dan Prinsip Desain pada Karya Nirmana Dwimatra." *Deiksis* 2.02, 2015, p. 82-95.
- [6] Meyer, Chris, and Trish Meyer. *Creating motion graphics with After Effects: Essential and advanced techniques*. Taylor & Francis, 2013.
- [7] Zhu, Hao, et al. "Deep audio-visual learning: A survey." *International Journal of Automation and Computing*, 2021, p.1-26.
- [8] Hartsell, Taralynn, and Steve Chi-Yin Yuen. "Video streaming in online learning." *AACE Journal* 14.1, 2006, p.31-43.
- [9] Mandasari, Rizza Indah Mega; Pudjoatmodjo, Bambang. Player Experience Measurements Using Immersion Experience Questionnaire on Pewayangan Game. *IJAIT (International Journal of Applied Information Technology)*, [S.l.], v. 3, n. 01, p. 10-17, oct. 2019. ISSN 2581-1223
- [10] Artwodini Muqtadiroh, Feby; Ma'ady, Mochamad Nizar Palefi; Rizal Rahman, Faisal. Ensemble Measurement Model of E-Learning Implementation Readiness for Higher Education Institution. *IJAIT (International Journal of Applied Information Technology)*, [S.l.], v. 2, n. 02, p. 74-82, dec. 2018. ISSN 2581-1223
- [11] Ismail, M. E., et al. "The use of animation video in teaching to enhance the imagination and visualization of student in engineering drawing." *IOP conference series: materials science and engineering*. Vol. 203. No. 1. IOP Publishing, 2017.
- [12] Hapsari, Angganingrum Shinta, and Muhammad Hanif. "Motion Graphic Animation Videos to Improve the Learning Outcomes of Elementary School Students." *European Journal of Educational Research* 8.4, 2019, p. 1245-1255.
- [13] Tiberghien, Andrée. "Video studies: Time and duration in the teaching-learning processes." 2012, p.141-179.

- [14] Aisyah, Nabillah Nur. "Animasi Interaktif Prosedur Kerja Praktek Mahasiswa Berbasis Motion Graphic di Politeknik Negeri Sriwijaya." PhD diss., Politeknik Negeri Sriwijaya, 2020.
- [15] Annisa, S., and Muchammad Fajri Amirul Nashrullah. "Pembuatan Dan Analisis Motion Graphic Teknik Kinetic Typography Sebagai Media Edukasi Protokol Pencegahan Covid-19 Di Pt. Uni Metaltech Industry." *Journal Of Applied Multimedia and Networking*, Vol.5 no. 2, 2021, p.9-19.

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**Last-minute issue(s):**

- Figure 5 is never mentioned in the manuscript.