1.1 Video-Length, Attention Spans, Recall and Retention of Information

Findings:

✓ Short videos are more engaging. The authors recommend to plan on segmenting videos into 6-minute chunks or less (Guo, Kim & Rubin, 2014).

✓ This study’s results suggest that videos should not be more than 10 minutes long, as was identified by the literature. Sixty-seven percent suggest less than 10 minutes, while 15% of the studies suggest 10 to 15 minutes, and finally 7% of the literature suggests 15 to 20 minutes in length (Mihai, Vlad & Radu, 2015. p. 67).

✓ “Khan-style tablet drawings tutorials (see Figure. 1) are more engaging than PowerPoint slides or code screencasts” (Guo; Kim & Rubin, 2014, table 1. p.41). Code screencast refers to “the video screencast of the instructor writing code in a text editor, IDE, or command-line prompts (Guo; Kim & Rubin, 2014, table 1. P.44).

✓ The videos used in the study were well received by the students, and the videos had a perceptible influence on improving student retention (Wen-Jun, &Cigas, 2013).

✓ The students’ withdrawal and fail rate dropped once the chat/whiteboard sessions were introduced in 2005. Video clips were introduced between 2009-2011 also showing a drop in the fail rate (Wen-Jun, & Cigas , 2013).

✓ Retrieving information with embedded questions during the pauses can enhance the learners’ schema construction and recall, and transfer into a test (Cheon, Crooks, & Chung, 2014).

✓ Adding video clips in a lecture for segmenting lecture length may increase students’ understanding and their learning process. Additionally, the results indicated that adding videos in the middle of the lecture’s presentation increases the efficiency of learning (Ljubojevic, Vaskovic, Stankovic & Vaskovic, 2014. p.285).

✓ The mean (3.01) for retention of variable in hedonic (humorous) videos with congruent content was higher than hedonic videos and no congruent content (2.61) and utilitarian videos with congruent or no videos. Thus, the control and comparison groups showed significant differences in the levels of retention (Steffes & Duverger, 2012).

✓ “Most of the participants perceived that the video-based learning instruction was more effective than the text-based instruction in regard to remembering the content” (Choi & Johnson, p.222), as well as eight of nine students mentioned that the video-based learning was more memorable than just text-based learning (Choi & Johnson, 2005, p.222).

✓ An eye tracking study’s results indicated that watching a video has a high percentage of precision and recall (80%) compared with other activities as web browsing or writing on a paper. This means that users (students) might be more “concentrated on a relatively small field of view” while watching a video (Bulling, Ward, Gellersen & Troster, 2010, p.13).

✓ Longer videos result in significant drop-out rates, with drop-outs defined as the percentage that a student starts watching a video but then leaves before the video finishes. Additionally, the study
investigates the factors of creating peaks in viewing the video instructions, and presents a set of design implications for designing a video instruction, based on their findings (Kim et al, 2014, p. 39):

- “Avoid abrupt visual transitions” as well as “excessive visual transition.”
- “Make shorter videos” determine point of segments if the video is too long.
- “Enable on-click access for the steps in tutorial videos.”
- “Provide interactive links and screenshots for highlights.”
- “Consider video summarization for selective watchers.”

✓ The study’s findings suggest that designed video-based learning environment, by the authors study, was more effective on scaffolding to activate students’ self-regulatory behaviors than common video environments. It allows students to have better retention as well as engaging learning (Delen, Liew & Willson, 2014).

✓ The study is consistent with findings from previous studies, where it was found that “when students are supported and guided to use self-regulatory learning strategies, they tend to engage in deep learning processes” (Delen, Liew & Willson, 2014).
Figures

**Figure 1: Video length graph**

![Video length graph](image)

**Figure 4.** Median normalized engagement times vs. length for tutorial videos. Students engaged more with Khan-style tablet drawing tutorials (a.) than with PowerPoint slide and code screencast tutorials (b.). Error bars are approximate 95% confidence intervals for the true median [14].