1.3 Benefits of Segmentation

Findings:

✓ Video segments that are more attractive to students are those which students find the answer to the assessment, or where the presenter gives the solution to a problem. In other words, the ‘attractive’ segments are rich on the amount of useful and transferred information and (Giannakos, Chorianopoulos & Chrisochoides, 2015, p. 273).

✓ Instructional designers should consider either to use pre-defined segments or to allow to pause the animation at any time. This will help students’ understanding. However, and speed of these segments play a critical role. (Hasler, Kersten & Sweller, 2007)

✓ Students performed better, with a 3.1% improvement, when the educational video implemented Segmenting, Signaling and Weeding (SSW) design principles compared to students whose videos were not following any SSW design principles. Additionally, students with an SSW educational video scored higher on the retention test and knowledge transfer test compared to the group with the no-SSW model. Overall, the study’s results indicate that the SSW improves the total structural knowledge by 6.2%. (Ibrahim, 2012)

- Segmenting: Breaking down sections of a presentation of video. It is also a design principle that suggests that the learning material should be divided into short units and distributed.
- Signaling: “Highlight essential material” (Mayer, 2014) (see. Section 2.2). This design principle helps students to focus in specific and important elements in the learning material.
- Weeding: This design principle is the removal of irrelevant content to reduce negative effects in the cognitive process.

✓ Segmented videos allow students “to stop and reflect between each segment” (Hasler, Kersten & Sweller, 2007; Ibrahim, 2012). One of the approaches used for the study was to use a 140-second animation, where students can continue on getting through 16 segments. Additionally, the study experimented with different video lengths, 30 minutes and 52 minutes video, which had eight segments.

✓ Segmented videos can contribute in gaining a more compressive and formative self-assessment (Koumi, 2015, p.18).

✓ Students take more time engaging with a multimedia tutorial (i.e., instructional designed video-based presentation, video of 9 minutes that was divided in 1, 7, 14 or 28 segments), when “the degree of segmentation is increased.” However, the study mentioned that there was not significant increase from SCIM14 (video segmented in 14 parts) to SCIM28 (Video segmented in 28 parts). The segments addressed four historical inquiry processes of Summarizing, Contextualizing, Inferring, and Motoring (SCIM) (Doolittle, Bryant & Chittun, 2015).

- Summarizing: This means the first process in a historical inquiry process. It addresses questions such as “what does the source talk about?” and prompts students to give details about a source that is analyzed.
- Contextualizing: This is the second historical inquiry process. It addresses questions related to when, where, why, and how was the source produced.
- Inferring: The third historical inquiry process addresses questions focused on what the source suggests and gives insights and thoughts from the sources.
- Monitoring: The last historical inquiry process addresses questions such as what else would the student like to find out, or what new questions came up from the historical inquiry process.

✓ “In instructional environments that utilize video for content engagement (e.g., massive open online courses and flipping), high levels of segmentation should be used to facilitate student learning,” Additionally, the students’ disposition for segmented videos were generally positively perceived as a way of facilitating their learning and making the process easier. Contrastingly, if the video has a large degree of segmentation, it can be perceived as annoying for the students (Doolittle, Bryant & Chittun, 2015).

✓ The “response success” on students was positive when the experiment used macro-level scaffolding. For example, organizing the learning material in a way that table of contents is near to the video. The students recalled more of the chapter’s information by using this method. In contrast, the study’s findings also determined that the micro-level scaffolding allows the students to feel more in control of the video, while the macro scaffolding provided students with information about the segment. Overall, the study indicates that both levels are complementary to each other and using them combined can potentially have a great impact on the students’ performance while seeking information in a video (Cojean & Jamet, 2017).