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**Transmediating argumentation: Students composing across written essays
and digital videos in higher education**

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Transmediating argumentation: Students composing across written essays and digital videos in higher education

Abstract

This comparative study examined how university students built an argument in written essays and multimodal digital videos, and how their argumentation transmediated across these two mediums. Data analysis involved 1) analysis of content in both written essays and digital videos; 2) the development of transmediation visualizations to elucidate how ideas were transformed from essays into videos; and 3) multimodal analysis to understand the communicative affordances and constrains for argumentation with each medium. The findings revealed that the most common type of content in both essays and videos was supportive argumentation; however, the videos did not include any counter-argumentation. Students transformed different amounts of ideas in different ways when transmediating their argumentation from essays into videos. Both assignments offered unique affordances for building an argument based on their modes of communication.

The argumentative essay is the most common genre that students are assigned to write in higher education (Wingate, 2012), perhaps because it is viewed as an effective vehicle for constructing knowledge in a wide variety of disciplines (Tynjälä, 1998; Wu, 2006). When argumentative essays are approached holistically, as in this study, a *written argument* refers to the whole text (see Wingate, 2012), and *building an argument* to the way in which writers construct “a connected series of statements intended to establish a position and implying response to another (or more than one) position” (Andrews, 1995, p. 3).

According to Wingate (2012), the process of building an argument in a written essay consists of three components: (1) the analysis and evaluation of content knowledge, (2) the writer’s development of a position, and (3) the articulation of that position in a coherent manner. First, writers are required to distinguish relevant from irrelevant information and to identify different, conflicting viewpoints drawn from multiple sources. They should also be able to evaluate which ideas are useful in providing sufficient evidence for the essay. Second, writers

need to be able to compare and contrast evidence found in the literature when establishing their own position. When achieved in a sophisticated manner, writers will have evaluated, weighed, and combined arguments and counter-arguments in support of their position they are seeking to establish (Nussbaum & Schraw, 2007). Finally, the evidence should be organized as a logical text structure so that it clearly establishes the position taken.

Digital multimodal compositions—which interweave text, sound, visuals, and movement—can also be used to construct knowledge in different disciplines (Ho, Nelson, & Müller-Wittig, 2010; Kucirkova, Messer, Sheehy, & Panadero, 2013; Looi, Chen, & Ng, 2009). Such multimodal projects (e.g., digital videos, podcasts, websites), when assigned in academic contexts, can also integrate Wingate's (2012) three components for building an argument; however, these compositions may take different shape when constructed through multiple modes and digital tools.

Despite the fact that a growing majority of youth communicate multimodally outside of school (Lenhart, 2015; Rideout, Foehr, & Roberts, 2010) and many educators have begun to integrate multimodal projects into the curriculum (Miller, 2013), there is a paucity of research examining how students build an argument using multiple modes in digital environments. Furthermore, little to no research has examined the relationship between written and multimodal argumentation. That is, how ideas *transmediate*—or translate content from one sign system into another (Suhor, 1984)—between argumentative written essays and argumentative digital videos.

This study addresses these unexplored areas by examining how university students built and transmediated argumentation across these two different mediums. Through comparative analysis (Stake, 2006), we examined how argumentation was constructed in each medium, traveled across them, and the unique communicative affordances offered by each medium.

2. Theoretical Framework

Multimodal theoretical frameworks were used to understand how students built and transmediated arguments across written essays and digital videos. In the following section, we describe how these theoretical lenses were employed and relevant research.

2.1 Multimodality

Although there are different approaches to multimodality (Jewitt, 2009), including multimodal discourse analysis (O'Halloran, 2005) and multimodal interactional analysis (Scollon & Scollon, 2003), this study employs a social semiotics framework to understand how students built an argument with different modes. Vital to a social semiotics framework (Halliday, 1978; Hodge & Kress, 1988) is the understanding that various modes are integral in meaning-making. Modes are socially shaped and culturally given resources for communication—encompassing a variety of elements, including but not limited to text, speech, visuals, animation, gesture, and sound (Kress, 2010).

When applied to multimodal literacies, the social semiotics framework reframes composition and emphasizes how meaning is created through the synergistic relationship between modes in communication ensembles (Stein, 2009). Within these ensembles, the interaction between modes is significant for meaning-making and the unique combination of different modes communicates messages that no single mode communicates on its own. Composers “orchestrate meaning through their selection and configuration of mode. The meanings in any mode are always interwoven with the meanings made with those of all other modes co-present and co-operating in the communication event” (Jewitt, 2009, p. 15). These intersemiotic relationships between modes are a main focus of inquiry in multimodal literacy research, which includes analyzing how co-occurring modes align to emphasize a

complementary message (Dalton et al., 2015) or diverge to create dissonance and convey different messages simultaneously (Unsworth, 2006).

Social semiotics also elucidates how modes are shaped by sociocultural factors that influence how they are employed in communication. A mode carries with it specific communicative histories and affordances for making meaning, which also interact and contribute to the constructed multimodal message (Van Leeuwen, 2005). These affordances of a mode, offer potentials that make it better for certain communicative tasks than other modes (Kress, 2003). For example, a composer might be able to build an argument through visuals and sound in a way that is not possible solely through writing (Jewitt, 2009).

2.2 Argumentation through Multiple Modes

Despite the debate among researchers in the field of argumentation as to whether visual representation alone can build an argument, there seems to be a general agreement that visuals and imagery can play an important role in argumentation especially when combined with other modes (Kjeldsen, 2015). Blair posits (2015) that an argument—a claim and a reason or group of reasons supporting it—can be expressed verbally, visually, or multimodally. Others, like Roque (2012), focus on the different relationships between verbal and visual modes in argumentation. The visual can be intended merely as a “visual flag” to draw readers’ attention without having any specific argumentative function (Roque, 2012). Alternatively, the visual and verbal mode can present the same, parallel argument. Finally, the visual and verbal can be either combined (joint argument) or juxtaposed (contrasting argument). Birdsell and Groarke (2007) also point out that images can be used for rhetorical purposes, for example, to appeal to readers’ emotions or identify with the point of view of the writer. These different types of interplay between the visual and verbal modes can be used to develop and articulate a position when composing a

digital video. In addition to words and images, the multimodal argument can include any combination of words, images, movements, and sounds (Author, 2012; Blair, 2015) thereby employing the force of two or more means of conveying arguments (Birdsell & Groarke, 2007).

According to Rapanta, Carcia-Mila, and Gilabert (2013), an argument can be approached either as a form, strategy, or goal. The *form* approach concentrates on the structure of the argument (i.e., claims, grounds, and warrants). When argument is viewed as a *strategy*, the focus is on social discourse activity in which individuals advance competing claims with the argument moves during a discourse. Finally, an argument can also serve the specific *goal* or function, such as persuasion or negotiation of the joint understanding of the issue at hand. For example, Tseronis (2012) approaches multimodal argumentation as a communicative activity, in which more than one mode plays a role, with the goal of convincing another party of the acceptability of an established position. As this approach provides a more holistic lens to interpret the interplay of multiple modes that a composer employed to build an overall argument in a digital video, we adopted this approach in the present study.

In this study, an argument refers to either an essay as a whole text or to a multimodal composition as a whole video. The focus is on how students communicate a taken position in these two mediums by engaging in the three processes of argumentative composition suggested by Wingate (2012). Thus, students were instructed to compose first an essay and then a video by drawing upon relevant research literature. After analyzing and evaluating relevant literature, they developed and articulated their position using the specific modes available for written essays and digital videos.

2.3 Transmediation

The practice of transmediation involves translating meaning from one sign system to another (Siegel, 1995; Suhor, 1984). These sign systems represent a variety of modes (e.g., visuals, text, sound, and movement) or modal orchestrations (e.g., picture book, digital video, choreography) and offer unique communicative affordances and potentials for meaning (Eisner, 1994).

Research explains how transmediation challenges students to use and think about multimodal meaning-making in new ways (Harste, 2000; Magee & Leeth, 2014; McCormick, 2007). Siegel (2006) contends that instead of merely mapping content from one modality onto another, it is a generative process that involves innovative and reflective thinking on the part of the composer as they transform meaning across modes. Suhor (1984) suggests that through the transmediation process, “a constellation of cognitive, aesthetic, and psychomotor skills is brought to the surface when we consider students’ abilities to understand and perform in numerous sign systems” (p. 229).

Although some research has examined the transmediation process of students, the heft of this work has focused on K-12 students who transmediate and reinterpret literature. These studies (McCormick, 2011; Smagorinsky, 1997; Whitin, 2005) emphasized how transmediating literary interpretations across modes fostered abstract and critical thinking for students. Students generated multilayered interpretations of the content (Whitlin, 2005) and gained a new understanding of the rhetorical organization of a text (McCormick, 2011). A few studies have explored pre-service teachers’ transmediations—explaining it as a reflective practice for confronting personal beliefs and understanding critical issues in education (Magee & Leeth,

2014; Whitin, 2006). As far as we are aware, no research has examined how university students transmediate argumentation from written essays into digital videos.

This study aimed at addressing these unexplored areas by examining how university students built and transmediated argumentation across these two different mediums. Through comparative analysis (Stake, 2006), we investigated the following research questions:

1. How do students build an argument in their written essays and their multimodal digital videos?
2. How are ideas transmediated from students' argumentative essays into their argumentative digital videos?
3. What are the communicative affordances for argumentation with written essays compared to multimodal digital videos?

3. Method

3.1 Instructional Context

This study was conducted in a graduate course focused on learning in digital environments at a Finnish School of Education. The course consisted of six classes (five lasting 90-minutes and the final class of 135-minutes) comprised of an introductory session, four interactive lectures covering a variety of digital literacy topics (e.g., learning and literacy in a digital age, online inquiry, and multimodal communication), and a final reflection session. An additional 50 hours of coursework was allocated for independent work in small groups outside of the classroom.

A culminating assignment of the course was the composition of a short (3–5 minute) digital video in small groups of two to four peers. Each group was asked to choose a teaching method or a reform concerning digital literacies and name a pedagogical target audience for their

video. The purpose of the video was to convince their target audience about the usefulness of the teaching method or need for the reform. Students were also asked to discuss some implications for practice in their video.

Each small group worked in three phases. In the first phase, they developed a written “idea paper” containing information about their topic, the target audience for their video, their main arguments for the selected teaching method or educational reform, and suggested literature for more in-depth exploration of the topic. The idea papers were introduced and discussed in the second class. In the second phase, the groups engaged in analysis and evaluation of related literature and composed a short argumentative essay that was intended to provide a theoretically justified background for their videos. In addition, they composed an initial script for their video that utilized the research literature. We asked students to compose the essay first because we wanted to ensure that they possessed the requisite theoretical content knowledge before composing their videos. The aim of the course was that students learn to communicate their educational expertise through multimodal compositions and explore creative ways for communicating that expertise through multiple modes, not composing a video per se. The students submitted their essays and initial scripts before the fifth class, around which the teachers organized a short dialogic feedback session (20 to 30 minutes) for each group.

The third phase began in the fifth class meeting, when students began to develop their videos in small groups. After that class, students had five weeks to produce their final video. During the sixth and final class, all students watched, analyzed, and discussed the argumentativeness of each other’s videos and reflected on their video composing process.

3.2 Participants and data

The participants consisted of five small groups (with 2 to 4 members in each) who were enrolled in a Master's level course on digital learning in either 2013 or 2014. This subset of small groups was chosen from among 11 groups according to two selection criteria. First, we only included the small groups who gave us permission to use their products in the study. The second inclusion criterion was related to the genre of the video. The corpus of nine videos with research permissions represented five different genres and we wanted to include one video from each genre in the study (Table 1). The five groups contained 18 total students. Among these students, 13 were females and 5 were males between the ages of 22 to 37; 14 were pre-service teachers and 4 were enrolled in an adult education program.

The study data consisted of the five groups' written essays and digital videos. Overall, the written essays spanned 2 to 4.5 pages without references, and the length of videos ranged from 3:03 to 5:15 minutes. Three of the videos represented topics concerning teaching methods that utilize digital or media literacies (e.g., digital storytelling, movies, wikis) in the classroom, one video dealt with the use of blogs to foster communication in work places, and one video advocated the need for reform in teacher education to better prepare pre-service teachers to embed Information and Communication Technologies (ICT) in their teaching.

The videos were grouped into five different genres according to their overall script, which consisted of a series of events and story progression (Walker, 2012). The *news genre* relied on the typical framework of a news broadcast where news anchors introduce different perspectives on a topic followed by expert interviews. The *documentary genre* provided authentic experiences and voices of people representing different roles related to the topic of the video. The *narrative genre* employed temporally sequenced events leading to attitude change in a main

character. The *presentation genre* consisted of sequences of facts and examples that did not form a particular storyline but were tied to an overall theme. The *cumulative genre* presented a succession of short examples at a high tempo, with the aim being to strengthening the core message of the video. To give an overview of the videos, Table 1 shows how the videos representing the five aforementioned genres incorporated different media elements in building their argument.

---TABLE 1---

3.3 Data analysis

Qualitative analysis of how students built the overall argument in their essays and videos followed an inductive approach (Bogdan & Biklen, 2003). Emerging analysis was employed in which the conceptual tools were created little by little during the analysis process. We also used constant comparative methods (Strauss & Corbin, 1998) to derive overall themes. This process involved creating categories of the affordances for argumentation each genre possessed. We did this by first identifying themes within student examples separately for each medium. Next, we compared these themes for both mediums to identify similarities and differences. This coding process was iterative and involved several rounds of analysis across each researcher.

3.3.1 Analysis of content in the essays. Analysis of the essays was performed in two phases. The aim of the first phase, episodic analysis, was to clarify what kinds of content students included in their essays. To do this, the essays were divided into episodes that represented five kinds of content: 1) supportive argumentation, 2) counter-argumentation, 3) problematizing, 4) building relation to a reader, and 5) description. Content representing supportive argumentation was further divided into three sub-categories: providing supportive

reasons, providing favorable comparisons, and providing benefits. All episode categories, including those also utilized in the digital video analysis, are described in Table 2.

----TABLE 2----

The boundaries of episodes—where one episode begins and where it ends—were determined when writers shifted from one paragraph to a new paragraph or when they shifted from one content type to another in the middle of the paragraph. Two researchers' independently coded the episodes in all the essays and reached an agreement of 79%. All disagreements were resolved through discussion.

In the second phase of analysis, the content of each episode was divided into *idea units*. An idea unit corresponds typically to a single verbal clause that expresses an action, event, or state (Mayer, 1985). Initially, two researchers segmented one of the essays this way by indicating the boundaries of each idea unit. The agreement percentage for these decisions was 91%. Next, the remaining essays were segmented independently. The idea units contained in each episode category were counted to determine the proportion of the ideas reflecting each content type.

3.3.2 Analysis of content in videos. In order to compare the content of the essays and videos, we conducted similar content analysis for clarifying how student built an argument in their videos. To do this, we first created multimodal transcripts (Flewitt, Hampel, Hauck, & Lancaster, 2009) for each of the five videos. This process involved dividing each video into separate shots by using the kineikonic mode (Burn & Parker, 2001), or digital video mode, as the anchor mode (Flewitt et al., 2009; Nelson, Hull, & Roche-Smith, 2008). This means that units of the video were separated by the sharp change from one video shot to the next one. Between these separate shots were video sequences that ran without interruption. We isolated each co-occurring mode, including visuals, text, sound, and spoken language related to each anchor video shot.

Written and spoken modes were also translated from Finnish into English. Next, each transcript was divided into episodes and categorized utilizing the same episode categories applied for the analysis of the essays. Boundaries of episodes were determined by considering how the orchestration of several modes shifted to a new idea in the digital videos. These shifts were sometimes indicated by a change in the verbal narration or written text on the screen. However, they were also sometimes demarcated by an aural or visual shift. For example, some videos organized ideas by a change in music or a visual cue (e.g., a black screen between videos or animation to new scene). Two researchers categorized the episodes with 90% of agreement. Finally, the shots included in each episode category were counted and also measured in seconds to determine the proportion of each content type in the videos.

3.3.3. Analysis of transmediation of the ideas from the essays to the videos. To clarify whether and how ideas from the essays transmediated to the videos, we compared each idea unit in the essay to the content of the shots in the videos. Transmediation was apparent in two ways. First, an idea from the essay was made explicit in one or multiple shots. This was apparent, for example, when the same concept was used in both the essay and video. Second, an idea in the essay could implicitly inform the composition of the video. This occurred when the idea drawn from the essay was illustrated in the video through an example. Each idea unit and corresponding shot or shots in the video were then paired by creating a *transmediation visualization* (see Figures 1 & 3).

After developing this comparative visual analytic tool, we were able to count the proportion of idea units transmediated from the essay to the video. We also counted the intensity rate of the utilization of ideas (total number of appearances of transmediated ideas/total number of transmediated idea units) in order to better understand how ideas were reflected in the videos.

This intensity rate showed how many times, on average, each idea drawn from the essay appeared in the video. An intensity rate of 1 meant that each transmediated idea appeared only once (in one shot) in the video. The greater the intensity rate is, the higher the average number of appearances of each idea utilized in the video.

4. Results

4.1 Building an Argument in Written Essays and Digital Videos (RQ1)

Table 3 shows the main types of content students included in their essays to build an argument convincing their audience to use a particular teaching method or of the need for an educational reform. Most of the content supported the established position (64% of episodes) and this supportive argumentation included 69% of all idea units. Descriptive content was the second most common category, consisting of 17% of all the episodes. This covered a slightly smaller proportion of idea units (15%) in the essays. Counter-argumentation played quite a minor role in students' essays, accounting for 9% of the episodes. Almost the same proportion of episodes (8%) involved problematizing, and included 4.5 % of the idea units. By problematizing the prevailing situation, writers provided a solid foundation for presenting supportive argumentation for their position.

----TABLE 3----

As in the essays, supportive argumentation was the most common content type in students' digital videos (see Table 4), comprising 19 episodes out of 32 (59 %). These episodes were present in 61% of all shots. Slightly more than one-fourth of the episodes (28%) were descriptive in nature, accounting for one-third of the shots. Problematizing was present in 6 % of the episodes, while counter-argumentation was not included in any of the videos.

Table 4 indicates that students' videos differed significantly in the number of shots they included. Whereas one video consisted of only 9 shots, on the other side of the continuum another video included 41 shots. This wide range in the number of shots is partly explained by the length of the videos but also by the use of multiple shots—each of very short duration. While the average duration of a shot was 9 seconds, in one video some shots lasted only one second.

Although the same types of content were common to both the written and video formats, we found key differences based on the modes of communication. Students utilized all the same argumentative means in the videos as in their essays, with the sole exception of counter-argumentation, which was not present in any of the videos. In addition, the videos included more description than the essays (33% of all shots vs. 15% of all idea units).

---TABLE 4---

4.2 Transmediating Arguments from Written Essays into Digital Videos (RQ2)

Examination of the transmediation of ideas from essays into one or more shots in the videos revealed that a total of 25% of the idea units in the essays could also be found in the videos (Table 5; see also Figure 1 for an example). The proportion of transmediated ideas among the digital videos ranged from 12% to 33%, showing that the groups utilized different amounts of the ideas presented in their essays when building an argument in their videos.

---TABLE 5---

This proportion, however, is only one way to look at the transmediation of ideas. We also calculated an intensity rate that demonstrates in how many different shots, on average, each transmediated idea was represented in the video. The intensity rate ranged from 1.2 to 4. In the video with the intensity rate of 1.2, the utilization of ideas from the essays was relatively

straightforward, with each idea unit mainly informing just one shot in the video. In contrast, the utilization of ideas in the video with the intensity rate of 4 was more complex. A majority of the transmediated idea units were present in multiple shots in the video. In the following, we present two contrastive examples of how students transmediated ideas from their essays into their videos.

4.2.1 Transmediation example: “Eyes open for wikis”. The group of four students focusing on the pedagogical potential for integrating wikis into the curriculum transmediated the most ideas: 33% of the ideas in their essay were transmediated into the video with an intensity rate of 1.4. The transmediation visualization of this video (see Figure 1) demonstrates how many of the idea units developed in the written argumentative essay were translated into a particularly rich segment of shots at the beginning of the video (shots 4–6).

----FIGURE 1----

The students’ written essay was organized by overarching questions (e.g., “What is a wiki?”, “How can Wikis be utilized in teaching?”) and 1–4 paragraphs of related explanations. They built their argument by explaining the functions of wikis and used supportive evidence to show how they can be used as a learning tool in the classroom.

However, their video took a different approach for building an argument by seeking to persuade the viewer in a less overt way through narrative. With students acting out various scenes across the passage of time (Figure 1), the video presented the story of a teacher who initially possessed a negative attitude towards integrating wikis in the classroom (episode 1), but eventually changed her view (episode 4) as a result of learning more about wikis (episode 2) and witnessing their benefits firsthand (episode 5). One persuasive element included in the storyline was developed by comparing learning with books and wikis (episode 3), contrasting one fixed interpretation provided by a book with the multiple interpretations provided by Wikipedia.

Some of the key argumentative elements in the essay were also transmediated into the video; however, the sequence and manner in which they were presented was transformed. For example, sixteen of the idea units described in different sections of the essay (Figure 1) were communicated in a dense segment at the beginning of the video (Figure 2). In a three-scene sequence of the video lasting 34 seconds, the teacher's voice is heard asking questions about wikis (e.g., "What is a wiki?") while a student narrator arranges and moves colorful sticky notes on a chalk board to explain key aspects, as well as some of the benefits of the technology. Here, the group condensed and interwove description and supportive argumentation (benefits) contained in their essay through visuals, movement, and voice narration.

----FIGURE 2----

4.2.2. Transmediation example: "Seeing the world through movies". The two students who focused on how movies can be used to promote critical media literacy skills transmediated fewer ideas than the students who composed the video about wikis: 12 % of ideas in the essay were transmediated into the video, with the highest intensity rate of 4. The transmediation visualization of the video (see Figure 3) demonstrates how a few selected ideas were repeatedly translated and represented in different sections of the video.

The main claim of the essay centered on how images mediated by the media have a strong effect on public conceptions of the world (IU8). They emphasized this point in the essay by presenting examples of how perceptions of race (IU 9) and cultures (IU10) are reified through movies.

These few central ideas provided in the written essay served as an organizing framework for their video. However, students leveraged the multimodal nature of the video to show 30 clips of popular movies as examples. These clips were interspersed with black slides containing white

text—often posing questions (e.g. “Who are we?”, “Who are the others?”, “What if you don’t fit in?”)—with a voiceover echoing the same questions. The rhetorical questions together with carefully selected movie clips that were presented with rhythmic intensity created an emotional ensemble. As depicted in Figure 3, idea units from the written essay were more widely scattered throughout the video than in the wiki example.

Both of these student examples illustrate how transmediation can be actualized in various ways. The video on wikis utilized narrative elements whereas the video on movies relied on the analytical categorization of representative examples. In both videos, showing through examples was an essential element in building an argument. In addition, both videos aimed at an emotional appeal through a narrative structure, the written/spoken message, and/or multimodally.

----FIGURE 3----

4.3 Communicative Affordances for Building an Argument with Written Essays Compared to Digital Videos (RQ3)

Although the central message of the written essays and digital videos remained the same, aspects of the argumentation were transformed multimodally, temporally, and narratively through the transmediation process. Both the written essay and digital video mediums possessed unique communicative affordances for building an argument based on the mode(s) of communication (Table 6).

----TABLE 6----

4.3.1 Affordances for building an argument in the written medium. As mentioned, argumentative essays are a familiar academic genre for students and one that are often assigned throughout schooling (Wingate, 2012). In contrast to the dynamic and multimodal nature of digital videos, writing is a more stable and fixed form of communication. Essays provide a

communicative space where readers can digest information at their own pace and revisit previous sections an unlimited number of times. Furthermore, ideas can be communicated through specific phrasing and word choice—often offering narrow room for interpretation.

As a result of these specific modal traits, students' written argumentations were more organized and linearly constructed than their digital videos. In their essays, students built carefully articulated arguments where meaning was mediated through conceptualization, abstraction, and reasoning. The essays also appealed to academic authority by integrating specific research evidence to support claims, which was only occasionally present in the videos. For example, the group focusing on the pedagogical benefits of digital storytelling in the classroom developed an argument in their essay by connecting digital stories to sociocultural theories of learning and presenting "pedagogical justification" for classroom integration. These points were supported with in-text citations of relevant research. This group also provided counterarguments underscoring the possible challenges teachers can face when using digital stories. While their video included some of these general points, it contained no citations from the literature or any discussion of the "challenges" that were articulated in the essay.

The communicative affordances for students when building an argument through the familiar academic essay were that the stability and specificity of the medium allowed students to focus on appealing to scientific authority and reasoning. They did this by pointing to specific evidence, organizing their papers linearly, and providing counter-arguments. Students were able to conceptualize complex phenomena and also make the relations between concepts explicit.

4.3.2 Affordances for building an argument in the digital video medium. Although the videos presented less in-depth argumentation and counter-argumentation, the multimodal format of the digital video offered unique affordances over the essays. Students had greater

flexibility in how they structured their argumentation, as well as how they leveraged the specific communicative possibilities of the multiple modes available—including sound, images, movement, and text—when orchestrating their arguments.

The open nature of the digital videos also offered students freedom in how they communicated and organized their argumentation. Each video told a unique story, drawing on a variety of structures—ranging from a news show, to incorporating exemplar multiple movie clips, and acting out different scenarios. Furthermore, the multimodal format of the digital videos allowed students to interweave multiple ideas in ways not seen in the linearly structured essays. Finally, the videos also exhibited awareness of a larger audience. Many infused entertaining elements, often relying on humor, connections to popular culture, or storytelling to build an argument.

Students leveraged the unique communicative affordances of multiple modes to support and extend their argumentation in creative ways. As opposed to the essays, text was the least prominent mode of communication, with most videos relying heavily on visuals and voice narration—usually from multiple perspectives. Rather than directly presenting their arguments, the multimodal videos allowed some students to also *show* their arguments through narratives that conveyed a scenario. These examples varied from recording acted-out vignettes to integrating a variety of pre-fabricated video clips. Students led the viewer to understand the argument through example rather than solely through overt claims, opening up room for affective response and interpretation.

In accord with previous research, (Authors, 2012; Authors, 2016), sound (e.g., music, sound effects, voice intonation) often served as an affective layer in the digital videos. In these examples, sound cued the viewer to how they should feel about the scenario presented. In the

video focusing on wikis, for example, upbeat music was used to signal the positive change in the teacher's opinion of the technology by the end of the video. At the beginning of another video about digital story telling, the narrator explained the historical role of stories, supported by images of cave paintings and a campfire along with music played on the Finnish zither, a traditional instrument. Together these elements helped the viewer to make a transition in time, while music also served a meditative moment.

Across the videos, multiple modes were used to develop engaging argumentation through different modal structures. There was variation in how students orchestrated modes. Within the same video, different modes (e.g., sound, visual, movement) emerged as the main mode of communication. Furthermore, the amalgamation of modes and relationship between them often created a rich semiotic space for building an argument that was connected to storytelling, emotion, and entertainment.

5. Discussion

This comparative study sheds new light on how university students built an argument in written essays and digital videos, and how they transmediated meaning between these two mediums of communication. Thus far, argumentation has not been a focus of multimodal research in literacy and learning communities, with the majority of studies examining self-expression (Hull, Stornaiuolo, & Sahni, 2010; Ito, et al., 2010; Jenkins, 2008), collaboration (Ho, Nelson, & Müller-Witig, 2011; Jocius, 2013; Looi, Chen, Ng, 2010), or the benefits of multimodal projects for culturally and linguistically diverse K-12 students (Author, 2015; Black, 2009). Furthermore, multimodal practices have often been examined in isolation and rarely connected to written processes or products in academic settings (cf. Miller, 2013). These results

expand our knowledge of multimodal composition and argumentation and contribute empirically, methodologically, and pedagogically.

This study emphasizes how transmediation was a transformative process (Siegel, 2006), in which ideas were remediated and restructured. Findings demonstrate that students utilized the same types of content when building an argument in both essays and digital videos, with the one exception of counter-argumentation, which was absent in all of the videos. Although there was similarity in types of content presented in both mediums, this study deepens our understanding of how the extent, structure, and communicative mode of ideas differed when transmediated from essay into video. Students were selective about which ideas to transmediate into their videos (12–33%) and focused on these specific ideas in more depth. Students also disrupted the linear structure of the essays when creating their videos. This restructuring of ideas was particularly apparent in the transmediation visualizations, which provide a new, fine-grained view into the complex and varied ways specific ideas were transmediated during the process. The visualizations demonstrated how several idea units from an essay could be condensed and conveyed simultaneously through just a couple of video shots (Figure 1). Or conversely, the visualizations showed how only a few of idea units drawn from the essay could be expanded upon and reinforced throughout numerous video shots (Figure 3).

Both mediums—the written essays and digital videos—possessed unique modal affordances (Jewitt, 2009; Kress, 2010) for building an argument based on their mode(s) of communication. The difference between these two mediums offers new insights into understanding the possibilities for building an argument through orchestrating multiple modes in an educational context. The familiar written essay offered a stable and linear space for students to construct supported and more balanced argumentation. Alternatively, the multimodal nature of

the videos offered students more semiotic flexibility to orchestrate modes, design unique narratives, and appeal to entertaining and affecting their audience. Multimodal analysis revealed that not only was there variation in the transmediation of ideas, but the malleability of working with multiple modes allowed students to foreground and background visuals, sound, movement, and text in unique ways to build their argument. As one of the first studies to compare argumentation in essays and videos and trace the transmediation of ideas between them, this work offers a valuable starting point for research. In the future, it would be beneficial to also gain students' perspectives on their transmediation processes and views on argumentation with different mediums. For example, how do students' backgrounds, preferences, and experiences with using different modes affect their final multimodal products? Research is also needed to closely examine the composing process (Author, 2016; Bruce, 2009) as students move content between and amongst modes.

This study also contributes methodologically. We developed an analytical framework that allowed us to categorize and compare types of content across essays and digital videos. As described by Siegel (2006), content does not merely map on during the transmediation process—it transforms—across sign systems. The creation of transmediation visualizations as a form of analysis and representation illuminated this complex process. Multimodal transcripts were also used to understand the communicative role of specific modes and how they worked in combination with surrounding modes to build an argument. Currently, the representation of research findings in the field of digital literacies is confined by print-centric practices (cf., Author, 2016; Domingo, 2012; Hull & Nelson, 2005). New methods for analyzing and publishing research on multimodal composition are needed to adequately understand and communicate students' rich digital practices.

These results are situated in a particular instructional context and were no doubt constrained by multiple factors, including the assignment requirements, the available digital tools, and students' technical expertise (to name a few). Furthermore, the sequence students were required to follow of first researching their topic, then writing, and finally creating a digital video could be viewed as a limitation. However, this study presents valuable pedagogical contributions. The findings demonstrate how different mediums offer different possibilities for argumentation. Whereas written essays provide a familiar space for students to construct both supportive and counter-argumentation, digital videos offer flexibility for orchestrating modes, as well as the narrative freedom for conveying argumentation in an entertaining manner that is not always fostered in academic settings. This study also provides new pedagogical implications for the flow of ideas from writing to multimodal composition. Students were able to research and formulate their arguments through traditional means before embarking on their videos. However, the counter-argumentation they developed in essays did not transfer to their digital videos. Additional important pedagogical questions to consider include: How do ideas transmediate across a variety of mediums and in different compositional directions? For example, what would students' argumentation look like if they first created videos and then transmediated their ideas into writing? How would explicit instruction on how to use non-discursive modes in building argumentation affect their final products? Future areas to explore also include sequencing and scaffolding the transmediation process.

It is also important for teachers to consider the affordances of different mediums and modes when designing and assessing argumentation assignments. When composing multimodally, students need support (Dalton, 2013) to move beyond simple supportive illustrations (see Murray, 2009) to consider how they could embed theoretical justifications and

counterarguments in their videos. Very little research has examined the pedagogical potential for multimodally composing-to-learn. That is, using multimodal projects as a tool for thinking (Archer & Newfield, 2014). More research is needed that examines the semiotic potential modes possess for representing and learning content (Moje, 2009). In particular, how student understanding reveals itself, travels, and transforms across modalities.

6. Conclusion

As the digital horizon continues to expand (Leu, Kinzer, Coiro, & Cammack, 2004), it is increasingly important to consider how multimodal practices can be effectively integrated into higher education. This study demonstrates that building an argument across different mediums of communication and multiple modes might be a powerful way to enhance university students' learning. Transmediating ideas from traditional writing assignments into digital multimodal products adds additional cognitive and creative layers that require students to think about learned content in innovative ways. Furthermore, combining multiple modes of communication may also provide teachers with opportunities to help students understand and leverage the modal affordances of different mediums in building an argument for diverse audiences. These insights are valuable for students in enabling them to communicate effectively through multiple modes in digital environments—skills that will become increasingly important in their personal and professional futures.

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Table 1

Media incorporated in the videos representing different genres

Video topic	Genre	Min.	Media Incorporated					
			Music	Embedded video	Animation/transitions	Voice-over	Textual overlay	Images
Digital storytelling as a learning method	Presentation	3:03	•		•	•	•	•
Wikis in education	Narrative	3:35	•	•		•	•	
ICT in teacher education	Documentary	3:51	•		•		•	
Movies in learning	Cumulative	5:15	•	•	•	•		
Blogs as communication medium	News	3:06	•		•		•	•

Table 2.

Content categories used for building an argument in the essays and digital videos

Content category	Description
<i>Supportive argumentation</i>	
Providing supportive reasons	Content providing reasons for the position adopted in the essays.
Providing favorable comparisons	Content comparing suggested solution (position) to prevailing solution in a preferable manner.
Providing benefits	Content explicating benefits that support the position in the essay.
<i>Counter-argumentation</i>	
	Content refuting the position taken in the essay.
<i>Problematizing</i>	
	Content showing that prevailing situation or view needs reexamination or reevaluation (see Barton, 1993).
<i>Building relation to the reader</i>	
	Content that relates to experiences or emotions of the audience.
<i>Description</i>	
	Content describing objects or phenomena in terms of their parts and functions or appearance of these parts (see Hatch, 1992) or explaining the meaning of concepts or interrelations of words (see Werlich, 1982).

Table 3.

Mean proportion of different types of content in students' argumentative essays

Content category	Number of episodes	%	Min-Max	Number of idea units within the episodes	%	Min-Max
<i>Supportive argumentation</i>						
Providing supportive reasons	39	60.94	5-11	385	67.19	70-93
Providing favorable comparisons	1	1.56	0-1	8	1.40	0-8
Providing benefits	1	1.56	0-1	3	0.52	0-3
<i>Supportive argumentation total</i>	41	64.06	5-13	396	69.11	70-93
<i>Description</i>	11	17.19	0-5	86	15.01	0-38
<i>Counter-argumentation</i>	6	9.38	0-2	56	9.77	0-22
<i>Problematizing</i>	5	7.81	0-3	26	4.54	0-12
<i>Building relation to the reader</i>	1	1.56	0-1	9	1.57	0-9
Total	64	100.00	7-22	573	100.0	71-159

Table 4

Mean proportion of different types of content in students' digital videos

Content type	Number of episodes	%	Min-Max	Number of shots within the episodes	Min-Max	%	Mean length of the shots
<i>Supportive argumentation</i>							
Providing supportive reasons	15	46.88	1-6	62	4-36	51.67	8
Providing favorable comparisons	1	3.13	0-1	6	0-6	5.00	17
Providing benefits	3	9.38	0-1	5	0-3	4.17	11
<i>Supportive argumentation total</i>	19	59.39	3-6	73	5-36	60.84	9
<i>Description</i>	9	28.13	1-3	40	2-18	33.33	8
<i>Problematizing</i>	2	6.24	0-1	5	0-3	4.16	8
<i>Building relation to the reader</i>	2	6.24	0-1	2	0-1	1.67	22
<i>Counter-argumentation</i>	0	0	0	0	0	0	0
Total	32	100.00	5-8	120	9-41	100.00	9

Table 5

Idea units transmigrated from students' essays to their videos by content type.

Content type	Number of idea units	Transmediated ideas	%
<i>Supportive argumentation</i>			
Providing supportive reasons	385	95	24.7
Favorable comparisons	8	5	62.5
Providing benefits	3	3	100.0
<i>Supportive argumentation total</i>	396	103	26.0
<i>Description</i>	86	30	34.9
<i>Counter-argumentation</i>	56	1	1.8
<i>Problematizing</i>	26	1	3.9
<i>Building relation to the reader</i>	9	6	66.7
Total	573	141	24.6

Table 6

Modal affordances for building an argument in written essays and digital videos

	Written essay	Digital video
Genre	Follows a stable academic genre.	Flexibility in choosing a genre (e.g., documentary, narrative, news broadcast, etc.).
Organization of ideas	Logical organization of ideas.	Multilayered, flexible organization of ideas.
Mediation of meaning	Meaning is mediated through conceptualizing and abstraction.	Meaning is mediated through interplay of multiple modes.
Rhetorical means	Focus is on appeal to scientific authority (embedding in-text citations) and reasoning.	Flexibility in mixing rhetorical means: appeal to affective reactions, identification, cultural sense of affinity, authority, and reasoning.
Critical voices	Counter-argumentation is a natural element of an academic essay.	Counter-argumentation seems to be difficult to embed without interrupting the flow of the digital story.

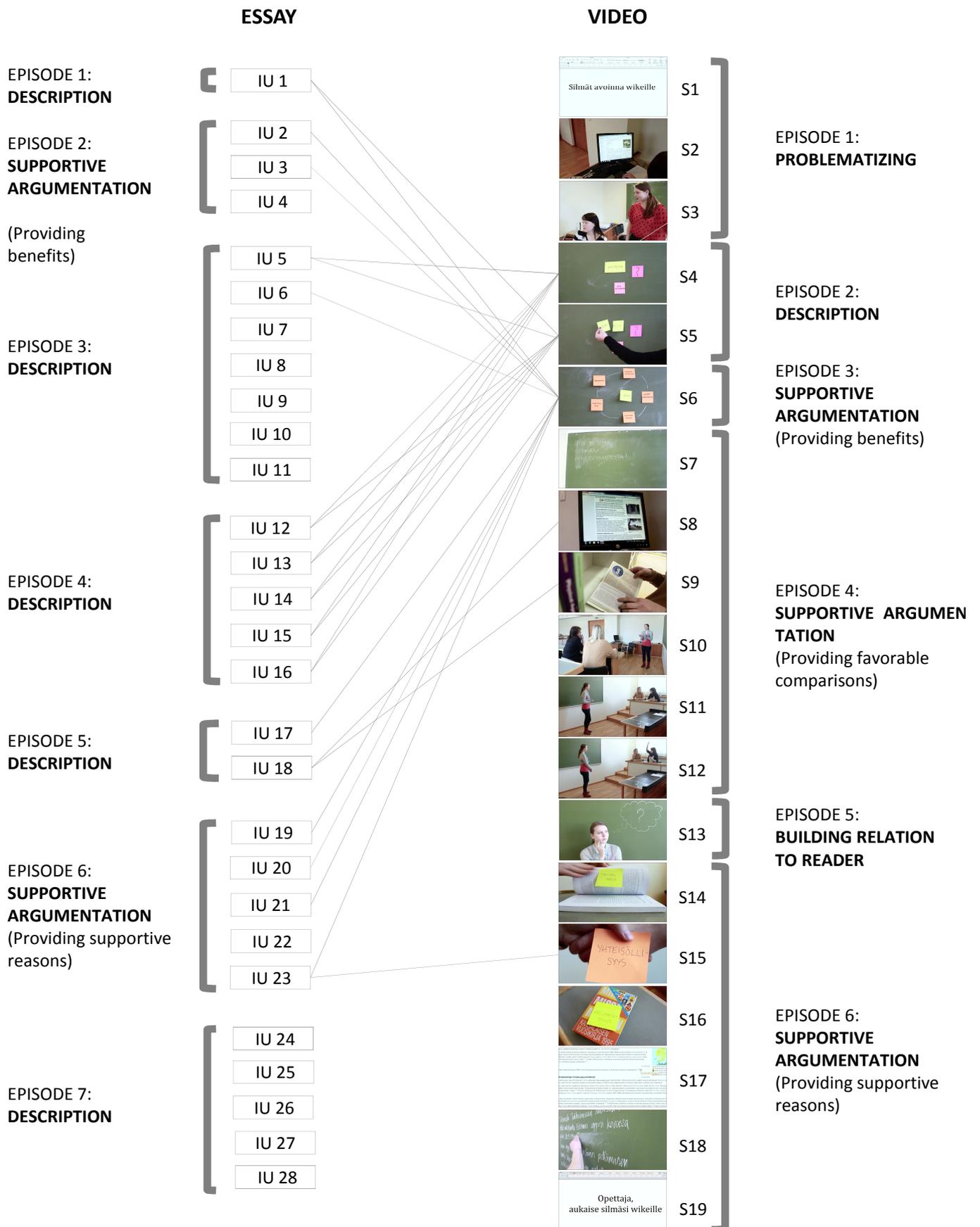


Figure 1. A transmediation visualization of the ideas from the essay into the video. The visualization displays the first seven (out of 22) episodes in one of the essays covering 29 of all 142 idea units. IU refers to the idea unit in the essay and S to the shot in the video.

TRANSMEDIATING ARGUMENTATION

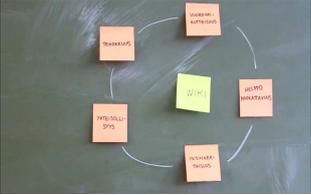
Time	Representative visual frame	Movement on screen	Spoken language (translation)	Sound
00:32		Student's hand places a sticky note with "Wikipedia" in the center of the chalkboard with two other sticky notes ("?" and "free dictionary")	Teacher: What actually is Wikipedia? Narrator: Wikipedia is a free, Internet-based and freely-edible encyclopedia. It is based on wiki technology.	Slow, jazzy piano music ↓
00:44		Hand separates "wiki" from the "wikipedia" sticky note	Narrator: A wiki is a website; the content of which users can quickly and easily edit the way they want.	
00:48		Hand moves the "wiki" sticky note to a new area of the chalkboard with surrounding sticky notes that list different features ("interactive," "can be modified," "simplicity," "collaborative," and "efficient")	Narrator: The wiki is reliable and efficient. Its activities are based on the community of users. People, who are interested in the same subject, share information and participate in the discussion of the content and quality of the article. Teacher: Hmm	

Figure 2. Multimodal transcript for from the video "Eyes Open for wikis." This transcript represents Episodes 2 and 3 (Description/Supportive argumentation: Providing benefits) and Shots 4-6 from the multimodal transmediation visualization (Figure 1).

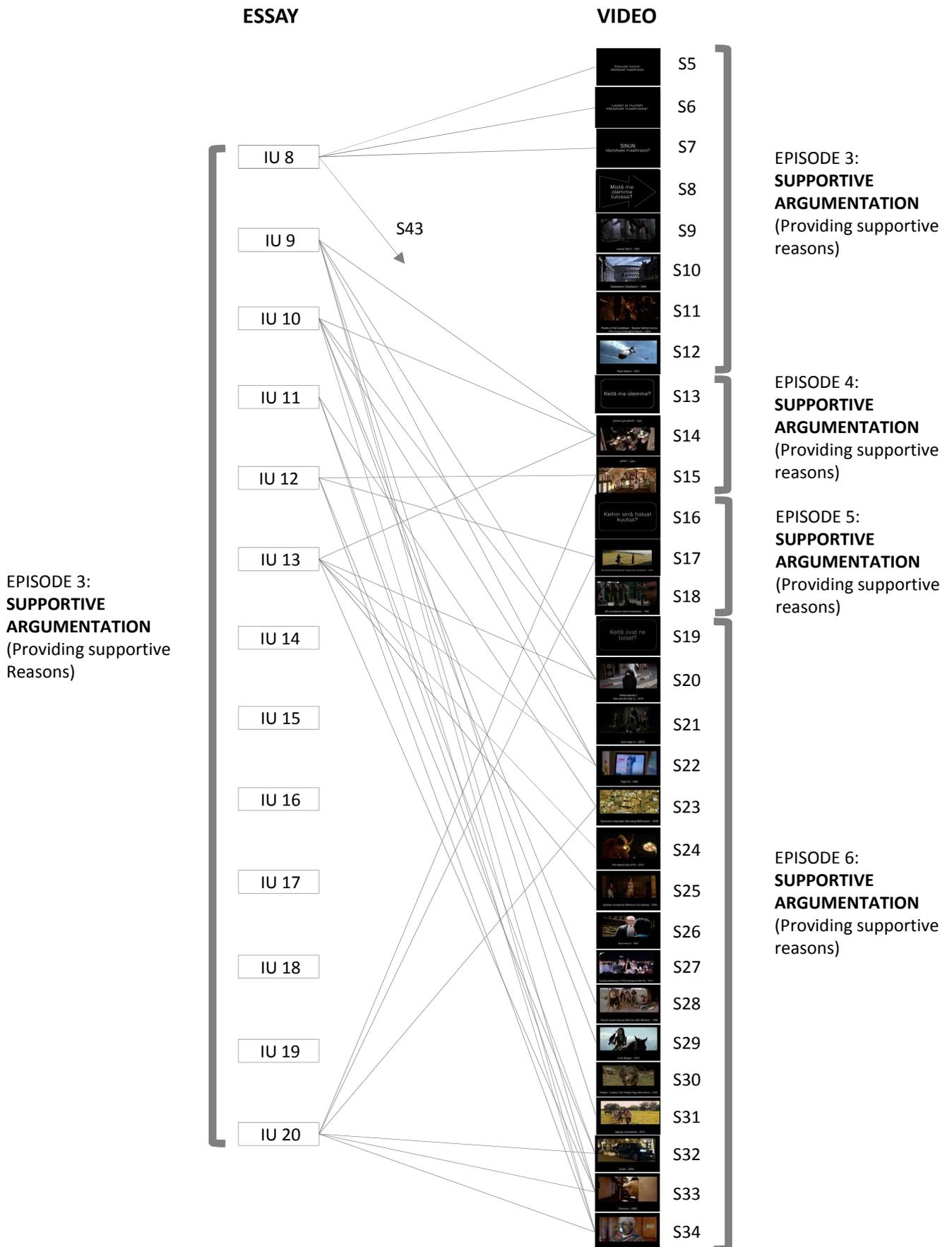


Figure 3. The transmediation visualization of the ideas from the essay to the video. The visualization displays one episode (out of 8) in the essay that covered idea units from 8 to 20 (of 82 idea units in the essay). IU refers to the idea unit in the essay and S to the shot in the video.

**Transmediating argumentation: Students composing across
written essays and digital videos in higher education**

Research Highlights

- Ideas were transmediated in a variety of ways across essays and multimodal videos
- Counter-argumentation seemed to be easier to embed into the essays than into the videos
- Essays offer stable communication where arguments can be logically organized
- Videos offer flexibility in mediating argumentation through multiple modes
- Combining two communicative genres in teaching seems to deepen students' learning