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Rethinking academic literacies:

Designing multifaceted academic literacy experiences for pre-service teachers

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Rethinking Academic Literacies: Designing multifaceted academic literacy experiences for pre-service teachers

Definitions of literacy have been and continue to be contested spaces for thinking about why and how people read, write, and learn in academic settings. Social forces, and the technologies they produce, often define the changing nature of literacy today, just as they have in the past (Leu, Kinzer, Coiro, Castek, & Henry, 2013). Today, literacy, for some, is linked to school-based reading, writing and technical skills (see OECD, 2000), while other scholars have focused on the application of these skills in relevant ways that vary by social and cultural context (see Barton & Hamilton, 2000). Nevertheless, in both cases, the explosion of the Internet and rapidly emerging new technologies continually raises questions about the changing nature of literacy and meaning-making practices in a 21st century community.

At the same time, new policies (Greenleaf, 2007), rigorous standards (Common Core Standards Initiative, 2010), and innovative assessments (OECD, 2011) challenge secondary school educators to keep up with changing notions of literacy while considering how best to prepare students to analyze, reason, and communicate effectively so as to continue learning throughout their lives.

In this paper, we introduce a multidimensional framework for academic literacies to help instructors become more aware of different aspects of literacies and how they might be used to plan and orchestrate meaningful, multifaceted literacy experiences in their classes. More specifically, this broad framework for literacy and learning explicitly considers the overlapping role of argumentation, digital inquiry, collaboration, and innovation as they are applied to continuously evolving disciplinary literacy practices. With this framework, we seek to move beyond deficit views of literacy skills (see Wingate, Andon & Cogo, 2011) to consider other ways of helping students expand their literate repertoires to meet their future career demands. We illustrate the framework by

describing a course designed for pre-service teachers that integrates several aspects of academic literacies and offers some pedagogical guidelines to support their literacy development. Finally, we summarize the different domains of academic literacies and pedagogical guidelines to assist teachers in various disciplines and educational levels in applying the framework in their own instructional contexts.

Framework for academic literacies

Our framework for academic literacies, presented in Figure 1, is based on a set of practices in which cognitive, social and cultural aspects of literacies are tightly nested (cf. Purcell-Gates, 2012). The cognitive aspects of the framework are designed to focus attention on how to promote students' reading, writing and communication skills relative to a particular domain or discourse community (e.g. Shanahan & Shanahan, 2008). The social aspects of the framework aim to build awareness of how to foster students' ability to work together as they generate knowledge through dialogic interaction (e.g. Mercer & Howe, 2012). Finally, the cultural aspects of the framework serve to remind educators of the prevailing values, beliefs, and demands that are reflected in classrooms, for example, through the curriculum, school policies, and each teacher's personal conceptions of teaching and learning (e.g. Rogoff, 2003). By drawing on all three lenses to inform our framework for academic literacies, we can begin to address recent calls to integrate existing views of reading, learning, and instruction in ways that emphasize how cognitive skill learning and teaching is shaped by sociocultural contexts (Purcell-Gates, 2012).

INSERT FIGURE 1 ABOUT HERE

Each of these lenses informs the five domains of literacies that make up our framework for academic literacies (Figure 2). These domains include 1) disciplinary literacies, 2) argumentative literacies, 3) digital literacies, 4) collaborative literacies, and 5) innovative literacies. Indeed, these five domains are interwoven, but the framework allows instructors to consider academic literacies from the separate angles within which literacy is used and learned. Together, as shown in the center

of Figure 2, these five overlapping literacy domains are important means for building new knowledge and developing activity citizenship in today's digital world.

Our framework is also informed by an understanding that literacy is a social practice and always embedded in social and cultural contexts (Barton & Hamilton, 2000). This view identifies literacy practices as a set of purposeful events mediated by written texts and embedded in the broader social goals and cultural practices of particular groups. Literacy, therefore, is not a single set of generic reading and writing skills, and it can mean different things to different people at different times. Central to our framework for academic literacies is the contextual and situated nature of the knowledge-building practices used by experts in specific disciplines. Consequently, we refer to each domain as a set of multiple literacies rather than as a singular literacy skill. Next, we briefly describe what we mean by each of the five domains of literacies in our framework and why they are increasingly important for the future of our students.

INSERT FIGURE 2 ABOUT HERE

Disciplinary literacies

Disciplinary literacy practices are at the core of our framework for academic literacies. According to Shanahan and Shanahan (2008), disciplinary literacy refers to advanced literacy embedded within subject matter content. Hence, learning in a discipline requires adopting the vocabulary, text genres, literacy conventions, and ways of communicating associated with that specific discipline (cf. Geisler, 1994). Some researchers suggest that disciplinary literacies should be viewed more broadly as a space in which knowledge is constructed and shared as a result of human interaction within disciplinary contexts and genres. For example, Moje (2008) argues that the core function of disciplinary literacies is to build students' understanding of how texts represent both the knowledge and the ways of knowing, doing, and believing in different disciplinary communities. Informed by all of these ideas, we view *disciplinary literacies* here as the joint

understanding of discipline-specific literacy features through which knowledge is created and practices are shared.

Argumentative literacies

Argumentative literacies, a second domain in our academic literacies framework, refer to students' abilities to identify, evaluate, and produce arguments within a wide range of individual and social literacy events (Newell, Beach, Smith & VanDerHeide, 2011). As students work to establish themselves as contributing members of a domain-specific discourse community, argumentative literacy practices enable them to consider alternative perspectives, broaden and deepen their knowledge (Van Amelsvoort, 2006) and make judgements to inform their decision-making (cf. Graff, 2003; Newell et al., 2011). As a result, students are able to effectively compose, evaluate, and learn from arguments by adopting the social practices of the target discipline. Although argumentative literacies is one of the most essential skill sets students need to succeed in college (Conley, 2003), most high school students are not prepared for the argumentative culture of the university and beyond (Graff, 2003). This presents a challenge for educators seeking to prepare students for an ever more cognitively complex and socially demanding future.

Digital literacies

A third domain in our framework is that of digital literacies. We define *digital literacies* as situational and diverse meaning making practices wherein digital tools and multiple digital sources are used to make sense of the world, build new knowledge, and exchange ideas within and across communities. The importance of digital literacies in a framework for academic literacies is prompted by the many ways that information and communication technologies have changed meaning-making practices across disciplines. For example, nonlinear and multimodal information sources require new kinds of meaning making practices as part of online research and inquiry-based learning (Leu et al., 2013; Kress, 2010). Further, new digital meaning-making practices are situational and socially constructed for diverse audiences and unique literacy purposes (e.g.,

blogging, twittering, and online discussion) (Lankshear & Knobel, 2007). These rapidly changing representations of texts, audiences, and their associated meaning-making practices introduce additional challenges that influence our conceptions of academic literacies in a digital information society.

Collaborative literacies

Collaborative literacies refer to those literacy practices where two or more persons engaged in reading and/or writing together are equally responsible for negotiating meaning through talk. The goal of collaborative literacy practices is to produce a joint interpretation of a text (Coiro, Castek, & Guzniczak, 2011; Kiili, Laurinen, Marttunen, & Leu, 2012) or to compose a joint text together by means of interaction (Giroud, 1999). In addition, engaging with collaborative partners with varying perspectives provides authentic opportunities to practice argumentative literacies while learning new content in the target discipline. Collaborative literacies are central to preparing a generation of students ready to work together as active citizens (Council of Europe, Education for Democratic Citizenship, 2004). However, individually oriented literacy practices continue to dominate in mainstream classroom settings (Mercer & Howe, 2012). Consequently, it becomes important to apply instructional practices that rely more regularly on collaborative work.

Innovative literacies

The fifth and final domain in our framework of academic literacies is innovative literacies. The problems we face now and in the future are so complex that it will not be possible to solve them without creativity and innovation. Instead of emphasizing efforts to acquire and reproduce knowledge, literacy practices should encourage students to solve complex problems collaboratively and create new knowledge that might even cut across multiple communities. For our framework, we have adopted Gregory and Kuzmich's (2005) definition of *innovative literacies* as reading, writing and discussing for the purposes of solving complex problems and inventing something unique. As such, innovative literacies emphasize the exploratory literacy practices prompted by one's

curiosities, inquiries, and experiments (cf. Lin, 2011) while "playfully coming up with lots of new and different ideas, connections, and ways of seeing things regardless of whether or not these are socially valuable" (Wegerif, 2010, p. 38). This conception of innovative literacy builds on the idea that all individuals have the potential to be creative (Lin, 2011) and that creative insights often occur when existing ideas are combined or reinterpreted in unexpected ways (National Advisory Committee on Creative and Cultural Education, 1999). Consequently, an important aspect of developing academic literacies is to ensure students have opportunities to engage in reading and interpreting texts through "creative lenses", talking about the ideas inspired by reading different texts and developing and communicating new ideas through writing or multimodal composition.

Integrating Literacy Practices to Build New Knowledge and Active Citizenship

When we consider our proposed framework in its entirety, it is within these innovative practices that we best see each of the other academic literacy domains playing out in overlapping ways. That is, argumentation, digital inquiry, and collaboration can be used to enable creativity and innovation within and across disciplines. We believe that disciplinary literacies provide the context for creative work within which digital inquiry can be used for finding facts upon which students can build new ideas and connections. Argumentative literacy practices are needed for evaluating novel ideas and for convincing others about the usefulness of these new ideas. Finally, collaborative literacy practices play an important role, as collaboration fosters creativity. Together, we propose that these overlapping domains of literacy practices empower students to take a more active role in their local and global academic communities while collaboratively building new knowledge for the betterment of society.

Applying the framework in practice

So far, we have concentrated on arguing why we found these five domains of academic literacies particularly important for our students. The next important question to address is how learning within these literacy domains can be woven into content-area teaching practices. We

sought to answer this question by designing a course for pre-service teachers and revising it over three semesters on the basis of observations from learner participation and products along with information from discussions and questionnaires.

The course, focused on teaching and learning in new digital learning environments, was taught in one Finnish education program for pre-service teachers. The course was co-taught by the first author and her colleague. Rather than applying a more traditional lecture-based format where students' achievement was measured with an exam, pre-service teachers were offered an experience to engage with key content through inquiry and digital video composition. This experience was designed to empower them to apply their new knowledge of learning in digital environments to authentic work-related topics.

Learning goals

Learning goals in the course were established for both content knowledge and academic literacies. Content goals focused on building pre-service teachers' theoretical knowledge and methods for teaching in new digital learning environments. The literacy-learning goals were aligned to the multiple domains of academic literacies; hence, students were expected to:

- adopt key content for building knowledge (e.g., theories of digital learning) and for engaging in professional discussions about teaching in digital environments
- compose a multimodal text (a digital video) while learning how to interpret meanings created through different modalities and jointly negotiating the purpose of the text, target group, materials used, design, and production of the video
- compose a convincing argumentative text by identifying, producing, and evaluating arguments
- use creative means for expressing their ideas in their multimodal texts.

Course task

All five domains of our academic literacies framework were embedded in the course task. The pre-service teachers were asked to compose a three-minute digital video with Movie Maker

(digital literacies) in small-groups (collaborative literacies). Groups were asked to choose a method of teaching in a digital learning environment and then name a pedagogical target group for their video. The purpose of the video was to convince the target group of the usefulness of the selected teaching method (argumentative literacies). Groups were expected to compose a traditional essay as theoretical background for their video and to utilize it when designing the video (disciplinary literacies). Finally, the pre-service teachers were encouraged to be innovative when choosing their topic and composing their digital video (innovative literacies).

One example of a final product was a video titled, "Teacher, Open Your Eyes To Wikis," that highlighted different perspectives on using Wikis at schools. The video described differences between Wikipedia and Wikis, and the principles of collective knowledge creation. It also explained how Wikis can provide space for students to collaboratively construct knowledge and justify their thinking about the information found online. To address aspects of argumentative literacies in their video, the group created a narrative about a teacher with a negative attitude toward Wikipedia who started to reconsider her attitudes after being challenged by a student.

INSERT TABLE 1 ABOUT HERE

The flow of the course

The course consisted of six classes (5 x 90 minutes + 1 x 135 minutes) and pre-service teachers' independent work in small-groups (see Table 1). In the first class, instructors explained the core features of each domain of academic literacies and demonstrated how each domain should appear in the course task. Interactive lectures were designed to offer support by providing theories to inform content development and examples of how to use different modalities in their video productions.

The small-groups prepared their videos in three phases. First, each group prepared an idea paper with information about the topic (selected teaching method), the target group of their video, and their main arguments for the selected teaching method. Second, groups composed a short essay

as a theoretical background for their video and prepared an initial script for their video. Third, the groups continued developing their ideas for videos, and finally produced their digital videos. There was a five-week break between the last two classes so that the pre-service teachers had enough time to work on their ideas. In the last lesson (135 min), all the videos were watched, analysed, and discussed in the class by all the students together.

Feedback and evaluation

Throughout the video development process, the groups were given feedback on their products during discussions with their instructors and other learners. In the fifth class, instructors arranged a fifteen-minute individualized session with each group, in which learners had an opportunity to discuss their background paper and script. In the last meeting, the groups received feedback on their videos from their peers, who acted as an audience for the video. The peers gave explicit feedback on the plausibility of the videos and the use of different modes of meaning.

Finally, the instructors evaluated each group's products with a grade along with written feedback. The feedback focused on the groups' proficiency with various aspects of each domain of academic literacies. The pre-service teachers also wrote a self-evaluation report in which they reflected on their learning and collaborative literacy practices during the composition of their multimodal text.

Pre-service teachers' reflections on the course

In general, the pre-service teachers experienced digital video composing as an innovative and social practice, which actually integrated two domains of our academic literacies framework. For example, one student explained in her self-evaluation:

> A group has power - when working alone, there are fewer creative ideas. We really thought about different ways to show how to use Wikipedia for teaching collaboration and argumentation skills.

Pre-service teachers also reported that, unlike their work in other "collaborative" tasks where work is usually divided among group members, the digital video composition experience fostered much richer levels of group collaboration.

Teaching the course has shown us that hands-on-experiences have the potential to empower pre-service teachers to apply digital literacy practices in their future work, as reflected by another individual:

> Because of this group work, I have the courage to try new digital tools. And what is best, I will bring this new attitude with me into my future workplace when I work with my own students.

Many pre-service teachers also explained that composing a digital video was a useful way to build disciplinary knowledge. For instance, in the final classroom discussion, one student reported:

> In the process of doing our inquiry and producing the video, we realized that a three-minute video includes as much information as a 20-page long essay. Video is very versatile and efficient.

Furthermore, the opportunity to compose and analyze each other's videos appeared to equip our pre-service teachers with strategies for teaching argumentation in their own class, as described in this student's self-evaluation:

> During the course, I got some ideas that I can use in my class. [I learned] how to teach students to identify and critically evaluate multimodal means that are used for argumentation. It is important to consider what source is credible and what multimodal means are used and for what purpose.

Self-reports also indicated they were able to analyze their academic literacies from different angles. In summary, our pre service teachers' reflections illustrated that academic literacies might best be learned by engaging in diverse and meaningful literacy practices integral to knowledge building in the discipline of interest (see Gee, 2010).

Embedding Pedagogical Practices in Our Academic Literacies Framework

On the basis of the practical experiences gained from learning how to support pre-service teachers' development of academic literacies, we were able to expand our framework of academic

literacies by adding five areas of pedagogical guidelines into it, as illustrated in Figure 3. These guidelines, loosely informed by Gagné's (1985) principles of instructional design, include effective practices for 1) setting and sharing learning goals, 2) designing the task, 3) making requirements explicit, 4) specifying a sequence of learning activities, and 5) providing feedback through dialogue.

Next, we examine how previous literature suggests the details that emerged from our experiences with pre-service teachers might be effective in supporting learners' literacy development more generally as part of any content-area course.

INSERT FIGURE 3 ABOUT HERE

Setting and sharing learning goals

In our course, the learning goals for both content and academic literacies formed the foundation upon which all the other pedagogical activities were built. Ideally, learning goals should direct attention away from task and completion goals and toward student learning goals that include real-world criteria for their achievement (cf. Gagné, 1985; Shindler, 2010). When instructors communicate relevant learning targets for both content knowledge and specific literacy domains, students acquire both a sense of purpose and a clear vision of a successful result. However, any shared set of literacy and learning goals should be flexible enough to allow students to customize them to meet their personal goals (Marzano, 1998). Thus, having appropriate and precise, but flexible, learning goals will maintain students' satisfaction and engagement in learning (Gettinger & Kohler, 2006).

Designing the task

When designing tasks, instructors can embed one or more academic literacy domains into the learning task to help students see the connections between literacy and content-area learning. Structuring content in organized and connected forms fosters engagement as learners view their task as related to gaining or expanding expertise in a relevant area of work (Guthrie, McRae, & Klauda, 2007). In addition, an engaging task involves the creation of a meaningful product and provides

opportunities for students to make meaningful decisions while accomplishing the task (Ainley, Pratt & Hansen, 2006). Consequently, in our case example, we embedded all five literacy domains into a collaborative video production task in order to enhance learning and foster connections to a range of relevant applications in their future work as teachers. In addition, the pre-service teachers reported that they found the task meaningful, while they also had an opportunity to share and discuss their videos with a real audience at the end of the course.

Making requirements explicit

Students benefit when the literacy practices of successful readers and writers in specific disciplines are made more explicit for them (Shanahan & Shanahan, 2008; Wingate et al., 2011). Students need to know what quality performance looks like in order to critically compare their actual performance with expected performance (Nicol & Macfarlane-Dick, 2006). Furthermore, making literacy requirements explicit can help clarify differences in instructors' and students' understanding of the task requirements (Wingate, 2012). At the beginning of our course, the pre-service teachers were given an overview of all five literacy domains and explanations of how these domains should appear in their products. The instructors elaborated specific requirements at precisely the point when the pre-service teachers were dealing with certain literacies. Thus, instead of just telling students what to do, the task requirements were communicated to students in a just-in-time fashion.

Sequencing learning activities

One way to guide students' literacy practices is, first, to sequence the learning activities (Gagne, 1995; Van Merriënboer & Kirschner, 2007) and then link these sequences to form a meaningful whole. Sequencing learning activities supports learners, in particular when they engage in complex, multilayered literacy practices. In our case, pre-service teachers' work was sequenced as phases of idea generation, inquiry on the selected topic, and development and production of a digital video. There are at least three reasons why we think that helping students to accomplish the

task in a step-by-step fashion is important. First, learning sequences offer students a basic structure for accomplishing literacy tasks within which they can be given the freedom to make their own meaningful decisions (cf. Ainley et al., 2006). Second, sequencing the task might help learners cope with any emotional stress that may be associated with initiating what appears to be a complex task. Third, sequencing the learning activities helps instructors to allocate their guidance appropriately through dialogic feedback, as we describe next.

Providing feedback through dialogue

The development of literacies should be approached as a gradual process that can benefit from systematic experiences with formative, developmentally appropriate feedback. First, feedback given during the process is probably more effective than feedback given at the end of an assignment (Nicol & Macfarlane-Dick, 2006). In our course, feedback was offered during each phase of the process; thus, groups received feedback related to their initial ideas, their theoretical background papers, ideas for their script, and their final product. Moreover, when formative feedback is accompanied by continuous collaborative dialogue around texts (Lillis, 2006), students are more likely to monitor, reflect on and regulate their thinking, motivation and behavior during learning (cf. Nicol & Macfarlane-Dick, 2006; Pintrich & Zusho, 2002). In our case, the instructors discussed pre-service teachers' products in general during class, but also with each group separately in their individualized feedback sessions. Overall, as instructors, we found these brief 15-minute individualized sessions very useful; they ensured that each group had an equal amount of time for a collaborative exchange of ideas with their instructors in addition to getting written feedback.

INSERT TABLE 2 ABOUT HERE

Conclusion

In this article, we introduced a framework for academic literacies that teachers can utilize to support literacy-based learning in their classrooms. Although our case example dealt with supporting pre-service teachers' academic literacies, we believe the framework can be applied to

various content-area courses at the middle and high school level as well. In order to help teachers think about how to apply the framework in their own teaching, in Table 2 we show, in integrated form, the five domains of academic literacies and the sets of guidelines for effective pedagogy. By integrating different aspects of literacies in their classes, teachers can simultaneously provide students with multifaceted, meaningful literacy experiences and powerful learning tools for building knowledge and for actively taking part in the global dialogic society (Wegerif, 2013).

TAKE ACTION

When you are making your lesson plan:

- ü Choose one or multiple domains of academic literacies that your students need to practice.
- ü Create a task that is as authentic task as possible while requiring your students to engage in literacy practices that are typical to the targeted literacy domains.
- ü Think about productive ways to accomplish the task and then sequence the task into central phases accordingly. Prepare to explain and justify for your students the steps that they need to take in order to complete the task successfully.
- ü Prepare to discuss task requirements with your students by carefully considering the most important criteria for success and different ways that successful accomplishment may be represented in the task.
- ü Find time for dialogic feedback during different phases of the task.

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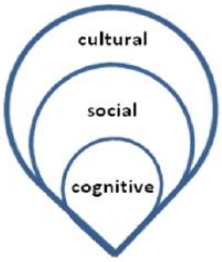

Figure 1. Aspects underlying the framework for academic literacies

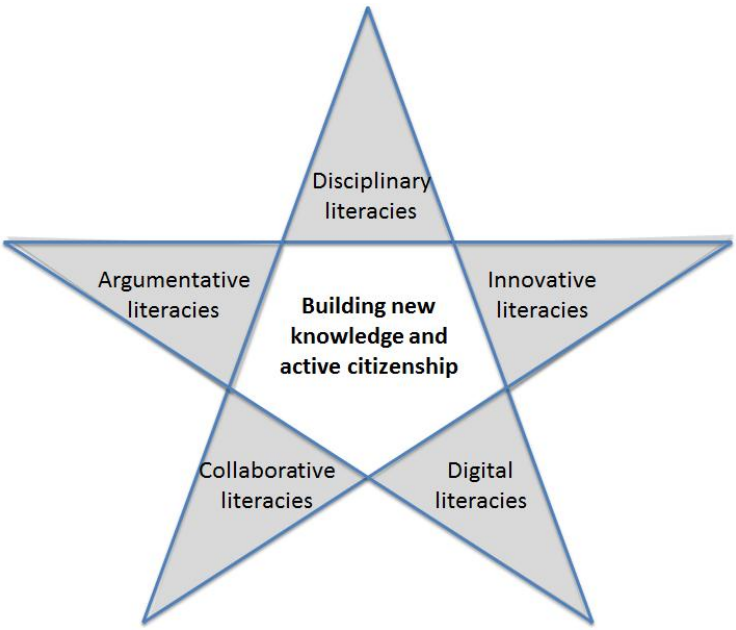

Figure 2. Framework of academic literacies

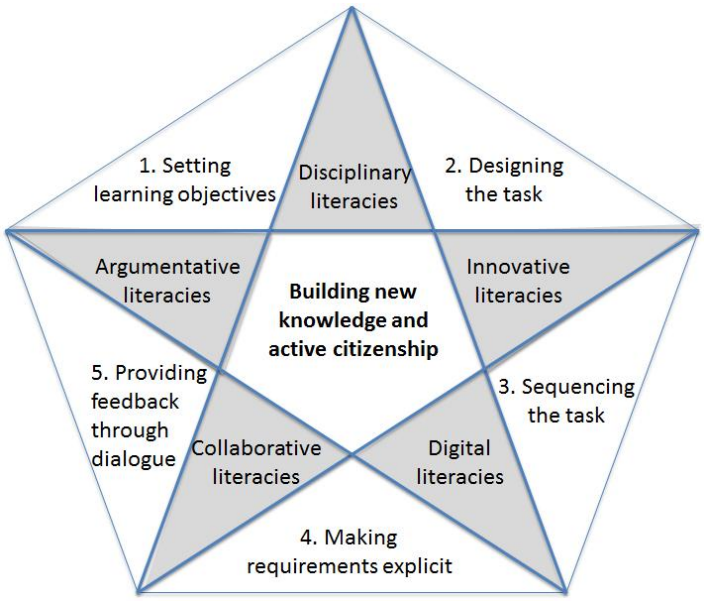

Figure 3. Framework for academic literacies: Overlapping domains of academic literacies and five guidelines for embedding them in content area teaching.

Table 1. The flow of the course

Week	*Content covered in face-to-face class sessions*	*Small group work outside of class*
1	· Introduction to learning and literacy in a digital age · Introduction to five domains of academic literacies and the course task · Formulated small groups	
2	· Interactive lecture on collaborative learning in new learning environments · Small group brainstorming session on the topic for their videos	Group members worked on writing an idea paper for the video
3	· Interactive lecture on online inquiry · Discussed groups' idea papers	During Weeks 3 and 4, group members composed a theoretical background paper and initial script for the video.
4	· Interactive lecture on multimodal meaning-making · Watched three short videos and discussed features of argumentation and multimodal meaning making	
5	· Began work to develop videos in small groups · A fifteen-minute individualized feedback session for each group was lead by instructors	During Weeks 5-10, groups developed and produced their videos.
6-10	· Face-to-face classes did not meet during these weeks	
11	· Watched, analyzed, and discussed groups' videos	

Table 2. Embedding different domains of academic literacies into content area teaching

Literacies	**Setting and sharing learning goals**	**Designing the task**	**Sequencing learning activities**	**Making requirements explicit**	**Providing feedback through dialogue**
Disciplinary literacies	Students learn to participate in the discourses of a certain discipline or even across disciplines.	Task requires adopting key concepts and practices of the discipline and applying them to knowledge building.	Sequence the phases of identifying and adopting the key concepts and using them in accordance with literacy conventions of the discipline.	Highlight the discourse features of the discipline (e.g., language used, authors' voice) in the classroom.	Discuss concepts and practices that students find difficult, and help them to revise and internalize their understanding.
Argumentative literacies	Students learn to consider different perspectives on the target issue by identifying, evaluating, and producing arguments.	Task requires consideration of pros and cons of a controversial issue, informed decision making, and/or convincing an audience.	Sequence the phases of identifying different perspectives from multiple sources and sharing the reached understanding with others.	Draw students' attention to the structure of argumentation (claims, warrants, supporting evidence and counter-arguments) and how to critically evaluate others' argumentation and their own.	Challenge students' thinking to help them reach an understanding of the target issue that recognizes different perspectives and includes supporting and contradictory evidence.
Collaborative literacies	Students learn to make meaning in pairs or in groups by negotiating the purpose, interpretation and content of the relevant texts.	Task includes elements that require collaborative work, so that it cannot be split into individually conducted subtasks.	Sequence individual and collaborative working phases.	Create ground rules together for collaborative work.	Provide space for students to describe and evaluate their contributions to the joint product in the different phases of the learning process.
Digital literacies	Students learn to utilize digital tools and multiple digital sources for making and sharing meanings.	Task requires digital inquiry, meaning making through multimodal means, and/or exchanging ideas in social media.	Sequence the use of digital sources and digital tools to be used in producing a final product.	Discuss phases of digital inquiry, use of different modalities in meaning making, and/or literacy conventions of social media.	Discuss with students any difficulties they may have in using digital sources or adopting discourses specific to digital spaces.
Innovative literacies	Students learn to create new ideas, new connections between ideas, or solutions for complex problems.	There is no single, immediately apparent solution for the task.	Sequence the task into phases of fact finding, idea generation, evaluating ideas, and choosing and developing the best solution.	Outline and discuss the features and process of creative work in class.	Encourage students' creativity and if needed, direct their creative work by asking open-ended questions.