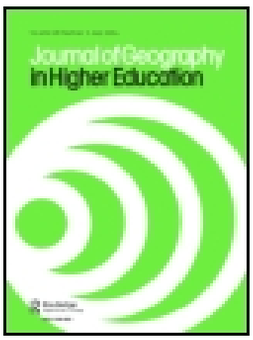

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Teaching energy geographies via videography

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ABSTRACT
In our digital age of information acquisition, multimedia information streams are constant, constantly changing and often contain multiple messages about topics important to everyday life, such as energy geographies. Recognizing that college students are prime consumers of digital information, it seems that crafting of academic engagement for and with students that is in touch with the knowledge networks they utilize and will continue to be part of today and into the future is important. Engaging students in the production of videos about important topics, such as energy geographies, aids them in becoming critical producers of knowledge.

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Introduction

Lights on. Drive. Emit CO_2. Extract more oil. Mobilize more gas. Fill up. Lights off. Repeat.

Multiple forms of energy illuminate and fuel every moment of our modern lifestyles, and geographic understandings of how it is extracted, refined, mobilized, or consumed across local to global scales are becoming more important as we seek to make sense of the environmental and human implications of our energy choices. Indeed, because of the attention to the interactions of people, places, and phenomena across time and space, geographers are well situated within the academy to engage with the multiple places, people and socio-ecological phenomena associated with the wide range of energy concerns including energy production in extractive regions, energy flow along numerous kinds of transportation corridors, and energy use and waste in sites of consumption. While geographers have long been concerned with energy and the implications of our modes of its production and consumption, a new generation of geographers seeks to create critical engagement with this field, seeing the "geographic systems of energy production, technology, distribution and consumption [as] thoroughly entwined social-environmental interactions occurring as networks and in territorial configurations across multiple scales" (Zimmerer, 2014).

Discussions of peak oil; increasing environmental ills due to fossil fuels, increased militarization worldwide regarding energy production; and recognition, but not widespread realization, of alternative energy sources have dominated the news and realities of this

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generation of college students. Making sense of energy technology advancements – let alone the research behind them – seems like a full-time occupation. This study examines one teaching intervention that attempts to have students become not only consumers, but also producers, of digital knowledge in a more-than-textual world for academic purposes and for a wider public. The dual aim is to have students become more critical consumers of knowledge production as well as to provide them with a new way to create and disseminate knowledge in their own futures beyond the classroom. It is achieved by engaging with multimedia knowledge about energy geographies using videography. While students digest and analyze information about the multifaceted field of energy from multiple sources (texts, multimedia, social networks), transnational giants (e.g., BP, Exxon) market their energy companies on television and in magazines; municipal governments and corporations tout the value of renewable energy on the web and through residential marketing campaigns; the plight of humans and the environment are depicted in movies, the news and by environmental and indigenous activist groups; and politicians engage different aspects of energy in different ways, and places, depending on geopolitical circumstances. Simply put, information about energy surrounds us in multiple forms in our everyday lives. Acknowledging our everyday engagement with the more-than-textual world, then, seems imperative in crafting a new kind of academic engagement for and with students that is in touch with the knowledge networks they utilize and will continue to be part of today and into the future. This is especially important when considering what some geographers consider to be of utmost importance: to recognize students as the vehicles for disseminating "geography into all walks of life" (Ward, 2006).

Click. Open. Digest image. Swipe. Digest text. Click. Close. Repeat.

Knowledge consumption in a digital manner is familiar to all of us and widely favored by today's youth, including college-age students, who are keen consumers of knowledge, leisure and economic goods and services via digital technologies. Younger generations seem to be so comfortable with digital technologies that the future of this mode of engagement appears limitless and, potentially, fruitful for garnering change in how we acquire and create knowledge for multiple audiences and, hopefully, interact with global humanity to address matters of crucial importance. Indeed, these "digital natives" – younger generations raised on digital technology – comprise the student body in our institutions of higher education and, some say, "think and process information fundamentally differently from their predecessors," or us, the "digital immigrants" who were not raised on digital technology but who have adopted it to some degree in our personal and professional lives (Prensky, 2001).

Indeed, the current generation is understood by many as highly technologically savvy and with a strong ability and desire to work interactively and in image-rich environments (France & Wakefield, 2011; Oblinger & Oblinger, 2005; Prensky, 2001). However, while college students appear at ease with technology for completing many of their everyday tasks, it is time to turn their attention past the consumption of information to the *production* of knowledge. Some scholar-teachers have asked whether student engagement with social media increases the learning and sharing of ideas (Jarvinen, Jarvinen, & Sheehan, 2012). Others are confident that if students are embedded in the production of knowledge when using social media, then they indeed exhibit "deeper levels of content analysis and comprehension" (Young & Raskinski, 2013). Others, introducing technology in fieldwork courses,

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find that its use helps develop technological skills for everyone (Mavroudi & Jöns, 2011; Welsh, Mauchline, Park, Whalley, & France, 2013), thereby diminishing any technological divides within groups of students.

Potentially, the use of technology by students can also be understood as a way to have them participate in digital discussions that move society further toward participatory democracy. Indeed, recognizing our geography students as our "first public" (i.e., those we as educators must reach first) is paramount, for they are the ones that "carry geography into all walks of life" (Castree, 2003). By asking students to engage in the production of knowledge that is so ubiquitously consumed by them, the hope is that students (the public) will become savvier knowledge producers, which can only aid our overall use of information in this increasingly digitalizing and globalizing world.

Videographic geography in the classroom

Within the discipline of geography, the dominant mode of communication is text. In the liberal arts setting, not all students in geography courses are geographers, and students from other disciplines bring multiple perspectives and difference knowledge sets, including interest in multiple media choices for thought expression, to enrich the classroom. This videographic teaching module seeks to engage all students enrolled in geography courses in the more-than-textual world to expand the reach of geographic knowledge for academic and non-academic audiences. From personal experience as a professor at a liberal arts college, most students do not seek academic careers after graduation and providing them with skills that may be of use to them in their futures, outside academia, is equally as valuable as providing them with traditional academic venues (e.g., essays, research papers) for expression. With the current interest in Geohumanities and the increasing ability to employ digital technologies in the classroom, many geographers have argued that the time has come to open up the academic engagement to other forms of expressions. Increasingly of interest to geographers is engagement with the more-than-textual, but especially with the visual, such as maps, paintings, photography, video (di Palma, 2009; Latham & Mccormack, 2007; Rose, 2003; Sanders, 2007). Growing interest among geographers in videography (Crang, 1998; Garrett, 2010; Witmore, 2005) suggests that the time to engage students in videography is ripe, especially in engaging the question that Lukinbeal and Zimmermann (2006) pose: "what new ideas manifest when geographers become filmmakers?" To this might be added, "what new understandings about the content of videos arise after producing one?" Asking such questions ostensibly should create students, and hopefully student projects, that engage critically in topic formation, creation, and consumption.

Making videography part of the research process for students can have both scholarly value (Garrett, 2010) and expands the reach of academic geography into the visual (Anderson, 2013) and, possibly, public (Ward, 2006) realms. Indeed, Witmore (2005) argues that videography offers "an alternative form of representation, something inherently different in terms of both production and consumption from text, photographs, performance, aural media, etc." This is of value for budding scholars as well as for creating greater interest in geography among the wider audience of non-geography students enrolled in geography courses. Some scholars even go so far as to emphasize that engagement with other modes of communication is "imperative" (Garrett, 2010) to engage the public and encourage critical engagement with the surrounding world.

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Becoming producers of video asks students to engage actively with technology, learning hands-on skills that deepen their digital knowledge base while also providing a foundation for engaging a wider public audience. Active knowledge production of the course subject, critique of films on relevant topics, and learning the technological ropes of video production ensures that teaching addresses content and technical matters. In this mode of pedagogy, videography may give students new abilities to "touch more lives, inspire more change and gain more momentum than other contemporary forms of publication" (Garrett, 2010).

The videographic module

In two separate third-year undergraduate geography courses (*Ecologies of the City* and *Arctic Transformations*), videography has recently been introduced into the curriculum due to the professor's desire to engage, with and for students, with new modes of knowledge production in this digital age. Approximately one-third of each course was focused on the topic of energy. Each time these courses were taught, numerous students decided to focus their final project efforts on energy issues (although this was not a requirement for these courses). Examples of the energy issues addressed in each course included hydrocarbon extraction processes and concerns for extraction environments and populations residing in/near them, the social flow and circulation of hydrocarbons from resources peripheries into cities, and the physical geographic implications of the movement of hydrocarbon resources between physical reservoirs (lithosphere, hydrosphere, etc.). In each course, students were asked to create individual 3–5 min films following the digital storytelling model, an intensive workshop-style engagement in which students were focused on listening to each other to produce "stories that emerge to serve as effective tools for change amidst a world of technology and media overload" (storycenter.org). In later iterations of these courses, students completed production of their films about two weeks before also producing a final term paper based on the same material as their videos. Detailed instructions about and a timeline for the individual and teamwork components of this project were provided early in the semester. The weight of this project was approximately one-third of the overall course grade and included assessment of multiple components (e.g., participation, critical reflection, editing workshops, final product, and group discussion of final projects) toward a final grade. Six phases comprised the video project. Approximately 20 students were enrolled each semester in these courses and to emphasize to students the importance of knowledge production for the classroom but also for the wider public in their lives beyond the classroom, student-produced videos were uploaded to the university's YouTube website.

Phase 1: topic selection

The following instructions were provided to students to outline the video project:

> In this course [Ecologies of the City OR Arctic Transformations], we are focusing on the production and consumption of [urban ecologies OR changes in the Arctic human-environment system]. In so doing, we are recognizing the need to understand how "glocal" human processes shape nature and natural processes. For this project, you are tasked with creating a video that explores the socio-ecological issues related to [urban ecologies OR changes in the Arctic human-environment system]. You must address both human and environmental elements. Your final video must include audio and video components and understandings of the following: (a) disciplinary and interdisciplinary understandings, (b) the roles of society and

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nature as related to [urbanization OR Arctic change], and (c) how socio-ecological [urban OR Arctic] systems work to produce power relations, spatial (in)justice, or sustainability related to [cities OR the Arctic region].

Part of the task for students was to create a research question that they sought to answer in the digital project. Students in each course were provided with a few examples of prior final project topics and the web link to videos produced by former students. In conversation with the instructor, topics and research questions were chosen approximately 6 weeks into a 14-week course.

In the *Arctic Transformations* course, examples of projects from students who pursued energy topics included questioning how hydrocarbon development of Yamal Peninsula in the Russian Arctic has transformed the livelihoods of indigenous Nenets; examining the flow and circulation of hydrocarbons and water in the development of the Alberta tar sands region; and historical and current development of nuclear power in the Russian Arctic. In *Ecologies of the City,* student projects included how oil development is related to cultural transformation in the Democratic Republic of Congo and energy choices considered for the building of stadiums in Qatar for the FIFA World Cup 2022.

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Phase 2: thesis statement and information/image gathering

After initial topic formulation, students continued to collect information and images related to their topic. In this way, textual and visual prompts informed the backbone for a thesis statement for their videos and term papers. They were asked to keep a digital folder with all text and images that they might consider valuable to their projects, especially noting the provenance of the scholarly literature and images they collect. Students worked with the instructor and in small groups in the classroom to refine and clarify their theses and to ensure that textual and visual information are reliable and reproducible sources.

Upon receipt of the instructions for the videographic project, students were quite comfortable with the requirements of phases 1 and 2, as they were generally quite similar to what might be expected in most classes requiring a research paper. The most significant difficulties with these phases were associated with sufficiently narrowing a topic so that it could be completed within the project timeframe (approximately two-thirds of a semester). While creating a manageable topic and a suitable thesis statement is a challenging task for students in any course that requires a research paper, it was especially important for the videographic project because of the need to provide succinct information with a clear thesis in a short amount of time (3–5 min).

Phase 3: first narrative draft

By week eight of the course, students were asked to turn in, digitally, a 400-word narrative with academic references. Prior to handing this in, students learn about the art of storytelling, but for academic purposes. Topics addressed are narrative arcs, gauging the amount of audial vs. visual information needed for the audience to understand the points being made, the importance of quickly introducing the thesis statement and defending an argument, and finally, attention to citations for videographic works. The instructor worked quickly to return this first draft to students, usually with extensive comments related to the topics above. From the professor's viewpoint, the beauty of this phase was the ability to

provide quick feedback on a thesis statement and to see where a student was headed with the assignment before a full video was created or term paper was written (remember, the video and term paper were both required in these courses). It also allowed the chance to edit students' actual voices early in the process of developing a topic for succinctness, clarity, and impact, something that is not usually available to professors through the classic term paper but that is important in creating highly literate, capable citizens. After the professor returned heavily edited drafts to students, students worked in small groups (3–4) again to refine each other's narratives and craft a final draft.

From the student perspective, Phase 3 was a moment in the course when they realize that crafting a short yet informative and insightful text that would be spoken can actually be quite a difficult task. Receiving heavily edited first drafts from the professor served as a notice that they must work hard to get the right wording, order of contents, and tone in order for their text to have the impact that they wanted it to have when spoken aloud. These are skills not often stressed in academe, where the focus has traditionally remained on the research paper. For these reasons, Phase 3 can be stressful for students, and providing additional time to answer student questions (e.g., in the classroom, in office hours) can be useful.

Phase 4: storyboarding

After heavy attention to the narrative in Phase 3, students returned to a consideration of how visual material will augment the audial. With assistance from the library staff (traditional librarian and digital technologies librarian), students delved into understanding image and video copyright laws in order to choose acceptable still or moving images to incorporate into their video projects. At this point, the technique of storyboarding was used to assist students with the pacing of the narrative and augmentation with visual cues. Further editing of the narrative based on images was conducted to remove extraneous or duplicative ideas from the narrative arc. A storyboard is a graphic organizer of images to be used in a media sequence. Digital storyboarding is easily accomplished in multiple programs. Most students have access to PowerPoint, so this was used in all of these courses.

The instructor also experimented using VoiceThread, an online platform that allows group conversations around images and spoken text, to conduct storyboard exercises. This tool allowed students to create a first-cut video without having to use video-editing software, which was an icebreaker into this mode of academic production, as it allowed them to produce a first version of their video easily (i.e., without the technological lead-up time needed for learning video-editing software). Additionally, the instructor and other class members were able to provide instant, verbal feedback on videographic ideas due to the application's recording function. The only downside to VoiceThread is that it is not freeware and use requires an annual subscription assigned to one person (learn more at VoiceThread.com). Whether using PowerPoint or VoiceThread, the students continued to work in small groups to provide feedback for each other on individual storyboards. Once the professor and students have provided feedback to individual students, a final narrative draft was produced and turned in with full references to textual and visual sources used in the video production.

For students, Phase 4 helped make sense of the professors' close attention to wording, tone, and content order in Phase 3. Because students were working with both text and images in Phase 4, it became clear to them just how important the structure of the argument they choose to make actually is. In this phase, there was usually a sense of relief and

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euphoria as the written/spoken and visual components of the project really began to take a more final shape.

Phase 5: videography workshop

For the videographic module, the instructor was fortunate to have a digital technologist who is based in the university library system dedicated to teaching students how to create videos using the program Final Cut Pro. In week 10 of the semester, students were asked to attend a 75-min session, during class time, in which the digital technologist taught students how to use the software. The instructor remained present for the training sessions to provide assistance, when possible, and to field questions specific to the course project, not the technology. Two follow-up, in-class sessions in the videography laboratory were included in the class time, to ensure that students had enough dedicated hands-on video creation time, with the digital technologist and the professor available for questions about the technology or about their individual projects. Additional time in the laboratory was available for students outside of class sessions.

Without the support of a digital technician or a videography laboratory, iMovie (for Macs) and MovieMaker (for PCs) provide sufficient (albeit reduced) video creation capabilities. Both come installed with newer computer models and many students have used them in their personal lives. If they have not, the learning curve of these relatively simple programs is reduced and free web-based instructions exist via Apple, PC makers, or on YouTube.

While some students took learning new software in stride, many students were quite anxious about learning Final Cut Pro for this project. It can seem like an intimidating program for those unfamiliar with any kind of movie-making software. Due to the hands-on learning sessions in the videography laboratory, however, most students expressed the ability to get past their fears and to learn at least the basics of video production. Some worked harder than others to master the basics, while others learned it quite quickly. Most said, after project completion, that they were glad to have had the opportunity to learn it even if they were not sure they would use it again. As the professor, I reminded them, at the very least, that it is a professional skill that they can now list on their resumes.

Phase 6: final viewing of videos via YouTube

Part of the instructor's goal in these courses was to have students move from being consumers of information to producers of academically informed, rigorously researched digital information that is available to, and understandable by, the wider public. For these reasons and with student permission, projects were uploaded to the university's YouTube channel in folders dedicated to the courses in which they were enrolled. In a two-hour evening block with dinner provided, the class, instructor, digital technologist, and librarian viewed the movies. To assess the final products, each viewer was provided with a rubric that allowed them to evaluate multiple aspects of the videography (e.g., purpose of the narrative, choice of content, audial, and visual; clarity of voice and soundtrack, pacing, references, additional comments). Alongside more detailed feedback from the instructor after the final viewing session, the instructor gave these assessments to individual students for their perusal. Final videos from prior courses can be viewed at http://www.youtube.

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com/watch?v=D1APJbrTQbc&list=PL4C1F11295F321CD0 and http://www.youtube.com/watch?v=hgrC2w4R36Q&list=PLHpyQGsS4HzIrL0aijruOkMpNCjmr40i6.

In this final phase, all students – including those who had difficulty understanding the value of academic videography, struggled to learn Final Cut Pro, or listened with trepidation to their own voices as they created, edited, and refined the audio component – enjoyed the final viewing. As the culmination of the nearly semester-long engagement, students were able to see and hear their own creations, and those of their peers, in a supportive group setting due to the built-in teamwork throughout the semester. For many, this was a first experience, and it was powerful to be among students as they supported each other through multiple emotional stages while viewing and discussing individual videos. For example, students seemed to experience some anxiety while watching their own videos with the class, relief once their video was over, nervousness when answering questions, and, finally, pride once they realized they had completed the project. After the end of each course, individual videos continue to get hits on YouTube and some students have even listed them on their resumes for jobs, and one even reported that a potential employer viewed their video before an interview.

Student response

Based on answers to the required course review forms provided at the end of each semester, the majority of students who completed a final video project reflected positively on the forms about their experiences with this videographic module. From their reflections, there seem to be multiple positive reports of engaging with film production and the group work requested to achieve it. Most students welcomed the videography assignment because it was novel to them and provided them with an additional tool to add to their geographical skillset. Some students did not enjoy the group work required in the course, or the actual process of videography. Indeed, some students did not see the value of this type of engagement instead of the traditional term research paper. Overall, however, it seems that while students are well versed in the traditional modes of engagement in the classroom (e.g., exams, essays, research papers), most had never created an academically informed video before and were excited about the challenge of doing so. Student remarks are provided in Table 1.

What I have learned, from my student's responses, is that many are indeed craving academic engagement that relates directly to their digital world. Many students found the project to be easy to manage and while the FinalCutPro software challenged all of them, most were comfortable navigating its intricacies because of their ease with navigating multiple computer systems (Mac, PC) and types of gadgets (smart phones, voice recorders, cameras, etc.). Some were not as comfortable with the digital technologies used in this module and either could not understand them technically (i.e., found the software difficult to master) or academically (i.e., did not see the reason to engage a non-traditional form of learning). Overall, their use of Final Cut Pro, VoiceThread, and multiple voice recording applications to complete the project was at least satisfactory, in a few cases, and often excellent, in many cases. The ability to combine their own academically informed interpretation of an energy issue with relevant photographs, graphs, charts, music, and shorter video clips gave them the space to explore and craft in a new way, which sparked many creative and deeply engaged conversations. For example, in one course, a session-long discussion developed around the ideas of image copyright, the digital commons, and intellectual property. While not

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Table 1. Student remarks derived from anonymous course review forms from the end of each semester.

Response in relation to	Student experience of videography module		
	More positive experience	Neutral experience	More negative experience
Technological skills development	I appreciated learning the Final Cut program, as I believe it provides valuable presentation skills	I was pretty mortified to hear my voice in the final viewing. But after, it was cool to know I had done something where others might hear my voice in the future	I was taken out of my comfort zone by making a movie
	Final Cut Pro was a fun and interesting new tool to learn how to use. I never thought about how text and images could complement each other. The [professor] showed me how important this is	While [the instructor] definitely did push us out of our comfort zones and challenged us, I never felt lost because of the step-by-step explanations	The course did not meet my expectations because of time spent on the video
	The work with Final Cut Pro challenged me in a beneficial way. Skills learned in this class earned me an internship for the summer where videography is a requirement. What more could I ask for? It's cool to have a line on my resume that says I can make movies. It's one more thing that distinguishes me in this tough job market		
Overall knowledge gain	I loved the final project; while it seemed like a daunting task, especially the group work, everything worked out so well by the end of the course	I learned a lot from this course – not only about the subject material but how to connect it with images and create a final video	I did not see the value of this project and am disappointed that I did not get to write a research paper on my topic
	The video project introduced me to a new way of thinking and way of learning. I learned new skills and improved other skills with all the group work		I thought it was an interesting topic, and something I could apply outside of the classroom … but I felt micromanaged throughout the semester
	I never thought much before about my efforts "going public." Now I see the value of writing and speaking beyond what I do for class		

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directly the topic of the course, the concern students showed about properly citing digital material was uncommon, in the professor's experience. Regarding creativity, students were confronted with how to use textual and audial material complementarily, which required them to consider they might avoid repetition in videos. Because of the multimedia nature of videography, students learned how emotion, when properly expressed (written, spoken, seen), can be a valuable tool in the representation of knowledge and arguments. The use of VoiceThread to produce storyboards in Phase 4 allowed both visual and audial inspection of video drafts by individual students, the professor and peers before the final draft was created in Final Cut Pro. This allowed students to hear their spoken text before final production, giving them another moment for critical reflection on just what exactly they wanted to say and how they wanted to say it, for maximum clarity, impact, and academic believability (rigor). This is a skill not often taught in the classroom, but one often considered valuable

in any post-graduate career. In these ways, videography opens up news venues for exploring concise written and spoken expression and proper referencing and citation, things that have become mundane, uninteresting and that possibly remain under- or unaddressed in more traditional course assignments.

Reflections

The experience of introducing video production into geography courses has revealed that most students (geographers and non-geographers) are not familiar with interacting with software and technology beyond the standard suite of programs used in many college courses (e.g., Microsoft Office and perhaps Adobe Creative Suite). This means that a certain level of attention (time and expertise) to technical matters is necessary in a course with a videographic component. Introducing the video project early in the term and allowing plenty of structured time to complete the assignment accomplished this. Structured time, in this case, included required group work to refine the narrative and required time in the video lab with the professor and the digital technician to ensure learning of the video software.

Certainly, over the course of teaching video projects for several years, the responses vary from term to term and from student to student. Difficulties, from the student perspective, are finding time to conduct teamwork assignments, sticking with the nearly semester-long assignment, and seeing the light at the end of the tunnel through all six phases. Some students enjoy teamwork more than others and some like projects introduced in phases; others prefer solitary work and a complete, shorter assignment provided all at once. Not all students can be pleased all the time, and asking them to complete a traditional term paper in tandem with the video project eased the concerns of many students who were less comfortable with engaging in novel assignments. Likewise, informing students at the outset of the term that the course would entail time-intensive teamwork and openness to working with new technologies and computer programs also aided in providing full disclosure about course content, in the short run, and ease student trepidations about course components, in the long run.

Here, it is valuable to return to the underlying reasons for this engagement with videography in the geographic classroom. The desire was to engage students in the production of knowledge about topics that shape everyday lives and local–global geographies, and to do so in a way that created a lasting product that can be engaged by the public. Other teachers employing videography in the classroom have asked whether student exploration of social media extends to experience with video-making technology (Jarvinen et al., 2012) or whether videos made in the classroom are worth a thousand words (Pal, 2014). As an advocate for videographic engagement within geography, however, Castree (2003) writes "we need to ensure that pedagogy is not reduced to technical matters." Videographic capability gives all students – the future public – new proficiencies for making sense of human and environmental geographies. By engaging multiple senses and placing their productions in a public venue, the works of these students may be able to "touch more lives, inspire more change and gain more momentum" (Garrett, 2010) than more traditional college classroom engagements. Indeed, students raised with digital technologies do not see technological barriers, but rather technological portals to new ways of crafting and consuming knowledge. In this sense, use of technologically oriented modules, such as the one described here, can allow institutions of higher education to bridge the gap between "digital natives" (students)

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and "digital immigrants" (professors), something that is widely considered necessary today (Sioli, 2015; Smith, 2015). Using videographic methodologies for teaching responds to the skill set that today's "net generation" students already have, but builds on it by re-imagining what *use* of the internet means: here, use is not just consumption of the constant stream of audio and visual information; rather use becomes creation and critical, rigorous inquiry of it.

The videographic module described here has evolved through multiple iterations. With any new type of engagement in the traditional liberal arts setting, there is always concern that experimental pedagogy lacks rigor and, if new technology must be learned, that time for intellectual engagement becomes lessened in the classroom. To address such concerns, student video projects are accompanied by a list of scholarly references and visual images used. Additionally, a term paper was required in later course iterations to ensure that students had time and space to engage in more traditionally understood venues for academic expression. However, academe would do well to recognize that a majority of the population will only ever be exposed to short, multimedia engagements with important topics, such as energy, in our global and digital world. For these reasons, it is important for student to engage in videographic knowledge production *alongside* rigorous coursework (e.g., exams, research papers, etc.). Instead of understanding the acquisition of technical and presentation skills as detracting from engagement with intellectual ideas, the learning of these new skills for this academic module and for life beyond the classroom can be understood as augmenting a commitment to intellectual engagement.

Many topics are worthy of videographic investigation within geography, and the hope of some is that this form of engagement will continue to develop and become more refined as geographers and other scholars continue to deepen engagement with a more-than-textual way of knowing. Energy provides a rich subject matter for videographic engagement, because in one way or another we are all implicated in its production, mobility, consumption, and waste in our daily lives. Humanity's energy choices impact marine and terrestrial environments; all of Earth's creatures; human socioeconomic, political, and cultural systems; urban infrastructure; interpersonal interactions, health, and wellbeing; and almost too obvious to mention, climate changes, and climate futures. The future public will be faced with difficult energy choices to make in (and for) their long-term futures, which demands critical reflection about our current local to global energy actions. Geographers have re-engaged in a critical written examination of energy and its impact on people and environment over the past decade (e.g., Bridge, 2009; Huber, 2013; Le Billon, 2012), but with the rise of carbon dioxide concentrations above 400 ppm in early 2015 (it was 403.53 ppm on 13 March 2015; https://scripps.ucsd.edu/programs/keelingcurve/), we must all turn our attention to other senses, such as the sight of places and people impacted by the various stages of the energy cycle, to ensure that we grasp, with as many senses as possible, what the local-global impacts of our energy histories and futures might be.

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References

Anderson, J. (2013). Active learning through student film: A case study of cultural geography. *Journal of Geography in Higher Education, 37*, 385–398.
Bridge, G. (2009). Material worlds: Natural resources, resource geography and the material economy. *Geography Compass, 3*, 1217–1244.
Castree, N. (2003). Reclaiming pedagogy. *Geoforum, 34*, 283–285.
Crang, M. (1998). *Cultural Geography*. New York, NY: Routledge.
di Palma, M. T. (2009). Teaching geography using films: A proposal. *Journal of Geography, 108*, 47–56.
France, D., & Wakefield, K. (2011). How to produce a digital story. *Journal of Geography in Higher Education, 35*, 617–623.
Garrett, B. L. (2010). Videographic geographies: Using digital video for geographic research. *Progress in Human Geography, 35*, 521–541.
Huber, M. (2013). *Lifeblood: Oil, freedom, and the forces of capital*. Minneapolis: University of Minnesota Press.
Jarvinen, L. Z., Jarvinen, M. K., & Sheehan, D. N. (2012). Application of core science concepts using digital video: A "hands-on" laptop approach. *Journal of College Science Teaching, 41.6*, 16.
Latham, A., & Mccormack, D. P. (2007). Digital photography and web-based assignments in an urban field course: Snapshots from Berlin. *Journal of Geography in Higher Education, 31*, 241–256.
Le Billon, P. (2012). *Wars of plunder: Conflicts, profits and the politics of resources*. New York, NY: Hurst and Columbia University Press.
Lukinbeal, C., & Zimmermann, S. (2006). Film geography: A new subfield. *Erdkunde, 60*, 315–325.
Mavroudi, E., & Jöns, H. (2011). Video documentaries in the assessment of human geography field courses. *Journal of Geography in Higher Education, 35*, 579–598.
Oblinger, D. G., & Oblinger, J. L. (2005) Educating the net generation, educause e-book. Boulder, CO: Educause. Retrieved May 10, 2014, from www.educause.edu/educatingthenetgen
Pal, A. (2014). A picture worth a thousand words? Making a case for video case studies. *Journal of College Science Teaching, 43*, 63–66.
Prensky, M. (2001). *Digital natives, digital immigrants*. Retrieved May 10, 2015, from http://www.marcprensky.com/writing/Prensky%20-%20Digital%20Natives,%20Digital%20Immigrants%20-%20Part1.pdf
Rose, G. (2003). Just how, exactly, is geography visual? *Antipode, 35*, 212–221.
Sanders, R. (2007). Developing geographers through photography: Enlarging concepts. *Journal of Geography in Higher Education, 31*, 181–195.
Sioli, L. (2015). *Here is how we will improve digital skills and create more jobs in Europe: A digital agenda for Europe*. Retrieved May 13, 2015, from http://ec.europa.eu/digital-agenda/en/blog/here-how-we-will-improve-digital-skills-and-create-more-jobs-europe-0
Smith, A., (2015). The digital skills divide. Retrieved May 13, 2015, from https://www.insidehighered.com/news/2015/03/06/colleges-teaching-digital-skills-can-bridge-middle-skills-gap
Ward, K. (2006). Geography and public policy: Towards public geographies. *Progress in Human Geography, 30*, 495–503.
Welsh, K. E., Mauchline, A. L., Park, J. R., Whalley, W. B., & France, D. (2013). Enhancing fieldwork learning with technology: Practitioner's perspectives. *Journal of Geography in Higher Education, 37*, 399–415.
Witmore, C. L. (2005). Four archaeological engagements with place: Mediating bodily experience through peripatetic video. *Visual Anthropology Review, 20*, 51–71.
Young, C., & Raskinski, T. V. (2013). Student-produced movies as a medium for literacy development. *The Reading Teacher, 8*, 670–675.
Zimmerer, K. S. (Ed.). (2014). *The new geographies of energy: Assessment and analysis of critical landscapes*. New York, NY: Routledge.

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