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Teaching information literacy in an undergraduate class on the geography of the Middle East

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Abstract: Geography instructors have a role to play in helping their students to become more information literate. This is especially important today, given the complex and dynamic nature of our informational landscape, and given the evidence that young people lack much of the knowledge that is needed to engage with information critically. This paper reports on the effectiveness of an information literacy module that was included as part of a course on the Geography of the Middle East. It describes the design and rollout of the module, and the results of a study designed to assess the effectiveness of the module and the class on students' information literacy, and to better understand students' existing relationship to information about the Middle East. The findings of the study suggest several ways that future iterations of the module might be improved.

Introduction

Today's university students are coming of age in an information environment that is complex, fast-changing, and significantly different from the ones in which many of their instructors grew up. Ownership of old media has become increasingly consolidated, with implications for the type and range of information that gets relayed across our television and other screens as well as in print (Glastris, 2018;

Lutz, 2012; Matsa, 2017). And of course, new media has been on the rise for the past few decades, now eclipsing for many people—especially young people (see Newman et al., 2018)—old media as a source of news and information. While new media may have helped to democratize the dissemination of information and knowledge to an extent, it has also accelerated the growth and extended the reach of disinformation and of xenophobic and otherwise reactionary content (Cooke, 2017, 2018; De Saulles, 2015; Freedland, 2019; R. Hobbs, 2017; Newman et al., 2018; Noble, 2018). Moreover, while the social media platforms, messaging apps, and search engines through which so many of us receive information today enjoy an aura of immediacy and democracy, the firms that own them can and do shape the content that users encounter, both to further their own ultimate purpose of capital accumulation, and at the behest of the states in which they are used (see, inter alia, Ball, 2014; Epstein, 2016; Hobbs, 2020; Lewis, 2017; Noble, 2018; Pasquale, 2015; Thielman, 2016; Trielli & Diakopoulos, 2016; Unver, 2017). This article begins from the premise that universities and colleges, if they are serious about their often noted goals of promoting students' critical thinking and their responsible participation in civic life, should also commit themselves to helping to cultivate a core prerequisite of these: students' ability to capably navigate their informational environments. This is especially urgent given the current evidence that people, and especially young people, are not very good at discerning truth from fiction online, or at understanding the workings of the technologies we daily make use of (Fallows, 2005; Hargittai et al., 2010; Powers, 2017; Stanford History Education Group, 2016). And it is no wonder: we are up against a fast-changing information landscape, fast-changing information technologies, and a tech industry invested in the inscrutability of their practices and products (Hobbs, 2020; Pasquale, 2015). These contextual factors make information literacy education for students all the more urgent.

While librarians and Library and Information Science (LIS) and Media Studies instructors may impart to their students the knowledge and skills they need to navigate the current informational moment, universities cannot rely on these instructors alone if their aim is to promote critical thinking and

responsible civic participation among all students. Instructors in other disciplines, it is increasingly being realized, also have an important role to play in promoting students' information literacy (Association of College and Research Libraries [ACRL], 2000, 2016; Grafstein, 2002). But exactly how these university instructors should step into this role is not always clear, especially given the demands placed on classroom time by other curricular goals. The purpose of this intervention is to describe one effort to incorporate information literacy principles and training into a course on a topic not explicitly related to information or media, and to share the results of a study designed to assess the effectiveness of this attempt while also gathering data to inform future attempts.

The effort reported on here took the form of a two-and-a-half week information literacy "module" that I included at the start of a semester-long second-year level course on the Geography of the Middle East. Although "module" can refer to an entire course in some academic contexts, here it refers to a part of a course. I used such a modular approach to information literacy instruction in the hope that, if it proved effective, others might be able to adapt it in accordance with their own needs and concerns, and deploy it without having to substantially reorganize their classes. In the interest of creating a module that would be portable in this way, I grounded the module in general principles germane to information literacy and/or Geography (about this more below), while fleshing these principles out with examples relevant to the course's regional orientation.

This paper consists of two parts. In the first, I explain the process that I used to develop the information literacy module, and what it looked like as it was rolled out. In the second part of the paper, I describe a subsequent study and its findings. The questions I sought to answer with the study were broadly two: 1) how do students characterize their previous and existing relationship with information about the Middle East? And 2) did the information literacy module and the class improve students' information literacy with respect to the Middle East, as well as their understanding of information literacy? These questions represent, respectively, a "what is" research question, and a "what works" research question, both of

which are important components of Scholarship of Teaching and Learning (SoTL) scholarship (see Hutchings, 2000). In the case of this study, the purpose of both the "what is" and the "what works" research questions is to inform future efforts at information literacy instruction in this and other classes.

The study's methodology included both an anonymous electronic mixed-methods survey sent out several months after the course had ended, the responses to which were analyzed through descriptive statistics and qualitatively, and the qualitative analysis of two take-home assignments that students completed as a part of the module. The results of the former suggest that the module and the class were successful at fostering students' information literacy. Both aspects of the study also suggest ways that the module might be improved for future classes. I discuss these areas for improvement before concluding the paper.

The information literacy module: design and rollout

Design

In recent years, LIS and other scholars have called for an expansion of information literacy education beyond its traditional mandate of standards-based and skills-focused instruction and assessment. Several specific arguments have been advanced. Scholars have argued that librarians and instructors of information literacy should see and treat students as creators, curators, and disseminators of information and knowledge, not just as seekers and consumers of it (Mackey & Jacobson, 2011). They have called for instructors to equip students with an understanding of how the information industries work (De Saulles, 2015; Head et al., 2018). And they have called for instructors to help students to engage with the big epistemological questions that will help them to develop a "critical consciousness" about information (Elmborg, 2006, p.198; Luke & Kapitzke, 1999; see also Mackey & Jacobson, 2011; Marcum, 2002; Swanson, 2004), including by integrating information literacy training with education about disciplinary knowledge and standards (Grafstein, 2002).

The impact of these calls can be seen in the most recent set of guidelines for information literacy instruction published by the Association of College & Research Libraries (ACRL)—the flagship professional organization of college and research librarians in the U.S. The document, the Framework for Information Literacy for Higher Education (Association of College and Research Libraries[ACRL], 2016, hereafter, the Framework), emphasizes, for example, the importance of helping students understand their responsibilities as information and knowledge producers. Additionally, while the Framework does not itself go into detail about the workings of information industries, it does emphasize the importance of students understanding information as the result of a creative process that is influenced by "legal and socioeconomic" interests (Association of College and Research Libraries [ACRL], 2016, p. 16). Most dramatically, the Framework explicitly departs from the ACRL's earlier published guidelines (e.g. Association of College and Research Libraries [ACRL], 2000), by offering guidance for how instructors can help students to engage with what it calls information literacy's "threshold concepts"—those ideas that are "passageways or portals to enlarged under-standing or ways of thinking and practicing" within particular disciplines (Association of College and Research Libraries [ACRL], 2016, p. 7). Moreover, noting the potential for information literacy to be part of a "deeper, more integrated learning agenda" (Association of College and Research Libraries [ACRL], 2016, p. 26), the authors of the Framework encourage faculty from non-library science disciplines to explore how the ideas in the Framework relate to those in their own disciplines, and to integrate Framework elements into their courses and academic programs (Association of College and Research Libraries [ACRL], 2016, p. 27).

This expanded view of information literacy allows us to appreciate just how much information literacy geography instructors are already sharing with their students. We are teaching information literacy, to be sure, when we are teaching students information fundamentals like how to find and evaluate sources (e.g. Blake & Warner, 2011; Hulseberg & Versluis, 2017; Kimsey & Cameron, 2005; O'Tuathail, 1998; Price, 2010), but it seems we are also teaching it when we teach our students about the political-

economy of various types of media in courses on Media, Political, Economic, and Cultural Geography; when we teach them how to be proficient and responsible con-tributors to public discourse (Heyman, 2000, 2004; Longan, 2007; Pande et al., 2013; Somdahl-Sands, 2015); and when we share with them any of the many ideas in Geography that touch upon questions of information, knowledge, and representation— for example, when we share with students the fundamental geographical tenet that perceptions of people and places are mediated, and that geopolitics and political- economy shape the lenses through which we see them (see, inter alia, Ashutosh & Winders, 2009; Dittmer, 2006; Daigle & Sundberg, 2017; Jazeel, 2012; O'Tuathail, 1998; Orzeck et al., 2014; Somdahl-Sands, 2015; Sziarto et al., 2014).

But while an expanded view of information literacy allows us to see what Geography is accomplishing as a discipline, it worsens the predicament of any single instructor interested in creating a holistic and integrative information literacy curriculum, especially one that can be rolled out in a short period of time.1 I addressed this predicament by choosing not to focus on the role and responsibility of students as knowledge producers. Instead, I sought to design a module that would help students to develop and practice some of the skills associated with information navigation, assessment, and consumption; that would improve their understanding of the nature and workings of the information landscape today; and that would give them exposure to some important ideas about information, knowledge, and representation coming out of both LIS and Geography.

I began the module design process by surveying the LIS scholarship on information literacy, media literacy, and meta-literacy. These traditions are so interconnected, with prominent contemporary proponents of information literacy explicitly relying on ideas that emerged from media and meta-literacy (e.g. Association of College and Research Libraries [ACRL], 2016), that I did not distinguish between them as I developed the module.2 The resources that emerged as particularly important as I developed the module were the ACRL Framework document as well as the major document that it supplements,

Information Literacy Competency Standards for Higher Education (Association of College and Research Libraries [ACRL], 2000); articles and resources available on the Project Information Literacy website (https://www.projectinfolit.org/) and the Media Education Lab website (https://mediaeducationlab.com)—many of these authored by their respective directors, Alison J. Head (2018, 2019), and Renee Hobbs (2017a, 2017b, 2003, 2015); and the scholarship of several prominent information literacy scholars, in particular Nicole Cooke (2017; 2018), parts of whose book, Fake news and alternative facts: Information literacy in a post-truth era, I assigned to the students as readings.

As I surveyed this literature, I looked for ideas that resonated with geographical scholarship and geographical approaches to the social world, and did additional reading where necessary to round out my understanding of the arguments that geographers and others had made on these topics.

Also while surveying the LIS literature, I sought out strategies that would help me to address some of the topics and questions that had come up in previous iterations of the course, and which I knew I wanted to address head-on in the module—in particular, the idea that there are two "sides" to every issue, and an overly narrow understanding of bias, within which it is both inherently problematic and something that emerges solely from flawed or unscrupulous reporting (rather than from more structural factors).

Table 1. The six statements around which the information literacy module was organized.

Information literate people . . .	
1	can evaluate the choices made by information producers;
2	understand some of the reasons that might dictate information producers' choices;
3	know how to find information that is more complete or that offers a different perspective than what they happen to be encountering;
4	understand the complex nature of bias;
5	are self-aware when it comes to their own information practices, and do not necessarily follow all of their initial impulses when engaging with information;
6	understand that information can influence beliefs, behavior, and support for policies and practices that directly impact people;

In the end, I developed six statements about the knowledge or practices of information-literate people that would constitute the bones of the two-and-a-half week module (see Table 1). I then developed

readings, assignments, and lesson plans (that included lectures, small group and all-class discussions, and in-class activities) that I hoped would help the students and I to grapple with these statements and consider what they meant in particular for our understanding of the Middle East. Each statement took between a half and three-quarters of a 75-minute class period (of which the module had five) to work through.

Rollout

In what follows, I explain the six statements around which the module was organized, as well as some of the exercises and discussions associated with them. I then describe the module's two assignments. All course materials are contained in a Dropbox folder to which I am happy to give fellow instructors access.

In-class lectures, exercises, and discussions

With the first statement, "information-literate persons can evaluate the choices made by information producers," my goal was to focus on the basic-level ability of information consumers to think critically about news information. Building off of insights contained in both of the ACRL's major publications about information literacy (Association of College and Research Libraries [ACRL], 2000, 2016) as well as other sources (e.g. R. Hobbs, 2017b; Said, 1981), the students and I discussed how simple editorial choices such as those pertaining to title, terminology, images, choice of interviewees and experts, and extent and type of context provided, could shape the reader or viewer's understanding of what is being discussed. To illustrate this, the students read about and we discussed the U.S. health insurance industry's successful effort to normalize the phrase "Government-run healthcare" as a way of describing – and dampening public support for – single-payer health care (Corcoran, 2019; Palmquist, 2019).

Because students sometimes critique as biased articles and readings that they view as deviating from neutral fact delivery, I was interested in communicating the fact that editorial decision-making is an unavoidable part of creating information products that make sense. To help students understand this, we

discussed the central cartographic insight that all cartographers must tell “white lies” so that their maps can be intelligible and useful to their readers (Monmonier, 1991). Visuals of maps were used to help make this point. I then suggested to students that a similar process of emphasis and omission is at work with any coherent representation of events. The task of the information consumer is not to critique the fact of emphasis or omission, but to consider how particular wieldings of these hurt or benefit certain groups. In an in-class exercise, the students learnt some basic information about Burkini bans in France and then critically compared multiple online articles about them, reflecting on how particular editorial choices might affect readers’ understanding of burkinis and their assessment of the justice of the bans.

The second statement—that information-literate persons “understand some of the reasons that might dictate information producers’ choices”—created space for me to both offer students an overview of how the information industries work today (their political economy), and relatedly, to expose students to some of the structural factors that can influence editorial choices. These are less often noticed by information users, because they often effect the whole industry or major parts of it, rather than one or another outlet or employee. These structural factors include the news industry’s need not to alienate those in power—the “deep grammar” of the news industry (Rosen, 2017; cited in Cooke, 2018. p.3)—as well as the domestic and international political-economic factors that shape news and entertainment media industries and their products, a topic explored early on by Edward Said (1978; 1981) but to which geographers and others have devoted considerable attention (Adams, 2017; Alford, 2010; Christophers, 2009; Culcasi, 2006; Dittmer, 2010; Rosati, 2007; Scott, 2005; Shaheen, 2001; Sharpe, 2000). With respect to new media, we discussed how the need to generate user engagement, often to harvest user data, influences not only producer choices but algorithm results about what sites to present and suggest to media users (Ball, 2014; Epstein, 2016; Hobbs, 2020; Lewis, 2017; Noble, 2018; Pasquale, 2015; Thielman, 2016; Trielli & Diakopoulos, 2016; Unver, 2017).

The third statement presented to the students was that information-literate persons "know how to find information that is more complete or that offers a different perspective than what they happen to be encountering." We began this part of the module by referring to several of the features of the contemporary information landscape that make the ability to find multiple quality sources especially important including the power of social media platforms, apps, and search engines, and the related rise in the quantity and reach of disinformation on the internet (Cooke, 2017, 2018; De Saulles, 2015; Freedland, 2019; Hobbs, 2017a; Newman et al., 2018). We did some in-class exercises on identifying mistruths online based on the resources in Cooke (2018). I then conducted a review with the students on how to find academic sources using our library catalogue, and provided them with guidance on how to locate English-language Middle Eastern news sources, as well as English-language websites and podcasts by people of Middle Eastern descent.

While these skills (discerning mistruths, knowing where and how to find alternative sources) are important and widely endorsed in the literature (Association of College and Research Libraries [ACRL], 2000; 2016), there are certain risks associated with the teaching of them. First, resources that attempt to help information users to identify lies online often steer them in the direction of establishment information sources and can foster unwarranted credulity where these sources are concerned. Second, the frequently encountered emphasis on users seeking out "multiple perspectives during information gathering and assessment" (Association of College and Research Libraries [ACRL], 2016, p. 19) can inadvertently lead users to a kind of "both-sidesism"—the belief (or suggestion by the media) that there are two "sides" to political issues—and to the related view that the correct position lies somewhere in the center of these sides. The students and I discussed these pitfalls, and I shared with them some of the ways that the rhetorical frames of "balance" and "diversity" have been used to muddy the status of scientific consensuses (Oreskes & Conway, 2012), shift the balance of power within institutions (Orzeck, 2012), and confer legitimacy on reactionary ideas (Sultana, 2018).

The fourth statement was that information-literate persons "understand the complex nature of bias." My goal in this portion of the module was twofold. One goal, returning to the structural focus of statement two, was to encourage students to think of bias as something that emerged not just from individual actors but as something that was also embedded in particular structures as well. A second goal, circling back to the themes of statement one, was to encourage students to consider another implication of the fact that all representations are inevitably incomplete. One implication of this, already addressed in the module, is that the task of the critical reader or viewer cannot be to condemn the reality of editorial decision-making, but must be to consider who particular representations hurt or benefit. A second implication is that instead of seeking out information that purports to be either exhaustive or "a view from nowhere," information consumers should in fact be seeking out and engaging with representations from different perspectives, and especially the perspectives of people from marginalized groups, precisely because of the unique insights they may offer (Haraway, 1988; Harding, 1992; Rose, 1993; Simandan, 2019). To explore the idea that our subject positions and experiences can be not only limiting but also enabling, students conducted an in-class exercise in which they wrote about an aspect of the burkini ban story that their own life experience or subject position might lead them to want to conduct investigative research on and reflected on how this research could broaden popular understandings of the issue.

The fifth statement was that information-literate persons are "self-aware when it comes to their own information practices, and do not necessarily follow all of their initial impulses when engaging with information." This insight dovetails with the ACRL's emphasis, in the Framework, on developing awareness of one's own biases (Association of College and Research Libraries [ACRL], 2016. p. 13), and on the importance of "critical self-reflection" as a means to engaging with information in a more "self-directed" way (Association of College and Research Libraries [ACRL], 2016, p. 8). The starting point for our discussion in this portion of the class was the students' assigned reading by Cooke, who defines the

current “post-truth era” as one in which “audiences are increasingly likely to believe information that appeals to their emotions and their personal beliefs, as opposed to seeking and accepting information that is regarded as factual and objective” (Cooke, 2018, p. 2; see also Boler & Davis, 2021). While people have long been attracted to narratives that make them feel good and shore up their material interests, Cooke discusses the ways in which current media has deepened these tendencies, in part owing to the rise of iterative journalism and social media. In an in- class exercise, the students reflected in writing on the extent to which emotional factors influenced their information consumption habits. The students and I then discussed some of the social and political implications of this, especially for the spread of disinformation and xenophobic content.

The final statement explored in the module was that information-literate persons understand that “information can influence beliefs, behavior, and support for policies and practices that directly impact people.” The students were assigned an article reporting on three studies that found a positive correlation between negative portrayals of Muslims and increased perceptions of Muslims as aggressive, support for military action in Muslim countries, and support for policies that harm Muslims domestically and internationally (Saleem et al., 2017). We discussed these studies, and the students reflected in writing on the possibility that their information consumption patterns and experiences (in particular those they had written about for their autoethnography assignments, about which more below) shaped not only their understanding of the Middle East and people from the Middle East, but their support for particular U.S. policies towards or practices in the Middle East. After discussing these answers as a class, I shared with students some other examples of news and entertainment media having direct influence on peoples’ actions and their support for particular policies (e.g. Mayer, 2007; Rose, 2018).

We concluded the module by brainstorming a list of practical “tools” that the students could use to engage with information and entertainment media in a more information- literate way, including but not only where the Middle East is concerned. On this list were things like being aware of one’s own biases

and world view; maintaining an open-mind, looking at multiple sources of information about particular stories; identifying credible sources and checking information and news received elsewhere against these credible sources; engaging with longer-form journalism; looking elsewhere for context or history when this is not provided in sources; using fact-checking websites; engaging with information with "a critical perspective;" identifying and reaching out to knowledgeable people about issues; determining one's own questions about particular issues or events in advance, and searching for answers to those questions; and engaging with articles and podcasts that are about the media itself.

At-home assignments

Two take-home assignments were part of the module. Students who completed these assignments on time received full credit for them.

The first assignment, provided to students at the start of the module, was an "auto-ethnography" assignment the design of which drew upon existing geographical writing about this pedagogical technique (Somdahl-Sands, 2015 and Dando's contribution in Orzeck et al., 1998). For this assignment, students were asked to select and write about three moments in their life that they felt had a decisive influence on their view of the Middle East, to reflect on whether they thought these moments deserved this prominent role, and if they did not, to discuss what kind of information would deserve it.

The students' second assignment was presented to students as the module was ending. The students were asked to revisit their autoethnography assignments with the information literacy module in mind and to try to identify any overarching patterns or habits of information consumption that had led to the prominence of the three moments they had chosen to write about. They were then asked to contemplate what kind of information consumer they wanted to be, and to lay out a realistic and sustainable plan for becoming this type of information consumer.

In addition to their function as a source of data, these assignments served several pedagogical purposes. These were shared with students in the interest of pedagogical transparency and to promote student interest in them. First, having students identify and reflect upon the potential sources of their impressions of the Middle East can help to de- naturalize these, and loosen the power of their grip (Farrell et al., 2015; Jakeman et al., 2017). This, moreover, can be critical ground-clearing for the acquisition of new information. As SoTL and other research has made clear, existing misperceptions, especially when unexamined, can impede the acquisition of new knowledge. This is especially the case, moreover, when these misperceptions are not isolated incorrect facts but over-arching and deeply-entrenched ways-of-seeing (Ambrose et al., 2010, p. 25). Second, identifying the potential sources of their impressions of the Middle East can help students to grasp the social and contingent nature of ideas that we generally think about as unmediated reflections of reality. An awareness of the social and contingent nature of ideas is critical to self-understanding and can also help us to understand the social and cultural worlds that we inhabit (Gramsci, 1971; Roth, 2005; Said, 1978). The third purpose of these assignments was to facilitate students' ability to assess information "with a self-awareness of their own biases and worldview," as the Framework advocates (Association of College and Research Libraries [ACRL], 2016, p. 13), and make more pro-active choices about what sources they want to have shaping their views of the Middle East and beyond.

Methodology

Although this manuscript owes a great deal to LIS and Geography, its methodology is derived most squarely from the interdisciplinary world of SoTL scholarship.

SoTL scholars have struggled with questions of what are the methods appropriate to it. In spite of multiple interventions insisting that SoTL ought to remain a "big tent," in methodological and other ways, and exploring the best ways to achieve this (Bernstein, 2018; Chick, 2014; Felten, 2013; Miller-Young & Yeo, 2015), many scholars have lamented the fact that qualitative types of research have been

maligned in the field (Grauerholz & Main, 2013; McKinney, 2005; Poole, 2013) and have made the case that conventional empirical approaches and goals are not especially well suited to some of the questions SoTL scholars want to ask. Among other things, several of these scholars have questioned whether the goal of generalizability can be achieved without a too-high cost to the quality and subtlety of the questions being explored (Grauerholz & Main, 2013; Poole, 2013).

In contrast to the emphasis on generalizability, these scholars insist on the value of shifting our focus from "proof" to "understanding" and from "generalizable simplicity" to "representing complexity well" (Poole, 2013, p. 141). This emphasis on complexity and understanding allows scholars to do right by our most important "audience"—the students with whom, and on whose behalf, we are working to improve teaching and learning (Grauerholz & Main, 2013). But it is also of benefit to other scholars and instructors, even if their institutions, students, and teaching conditions are different from our own. As Kathleen McKinney (2005, p. 418) writes, there is value in "offering findings from students in one setting that provoke reflection, experimentation, and changes in practice by other instructors in their settings."3

SoTL scholars have further noted that SoTL research generally seeks to answer one or more of four questions critical to teaching and learning: "what works?," "what is?," "what's possible?," and "theory-building" questions that relate to all of these and under-pin teaching practices (Hutchings, 2000). The study being reported on here asks a "what is" question when it seeks to understand how students characterize their existing and previous relationships with information about the Middle East, and a "what works" question when it seeks to understand whether the information literacy module and the course improved students' information literacy.4

The study, which was approved by my university's Internal Review Board, relied on two main research methods to arrive at its findings: qualitative analysis of the two assignments that were part of the module, and qualitative and quantitative analysis of an anonymous mixed-methods electronic survey

sent out to all students in the class approximately five months after it had ended. The purpose of this timeline was to capture what students had to say about their information literacy improvement, and the influence of the module and the class on this, once the class was no longer fresh in their minds.5

While SoTL research often relies on students' own testimonies about their learning (Brookfield, 1990 Divan et al., 2017; Jacobs, 2015; Phelan, 2012; Saunders et al., 2016), this study's reliance on self-reports could be considered a potential limitation insofar as self-report studies are vulnerable to the possibility of social desirability bias—"the presentation of oneself in an overly favorable light" (Tracey, 2016, p. 224). I addressed this by disseminating the survey after the class had ended and by making it anonymous. I also tried to increase the students' comfort with sharing feedback with me during the semester by regularly soliciting feedback from them and, following Brookfield (1995), responding non-defensively to feedback when it was negative.

I also sought to avoid "leading" questions on the survey. Although one of my goals in the study was to understand whether the information literacy module helped to improve students' information literacy, for example, I nowhere asked that question directly so as to not unduly influence their answers. Instead, I gleaned the answer to this research question by the ways in which the students answered more generally-worded questions about the nature and the causes of changes to their information literacy.

The participants in this study were drawn from the students in a second year university course, at a public Midwestern university, on the Geography of the Middle East. There were 39 students enrolled in the class: 6 Freshmen, 8 Sophomores, 19 Juniors, and 6 Seniors. Most of the students were traditional college-aged students from in-state. 9 students were Geography majors and the rest had either not yet declared their major or were enrolled in other majors, including in the College of Arts and Sciences, in the College of Business, and in the College of Applied Science and Technology.

Incentives were offered to students willing to participate in the study. Students who consented to allow their assignments to be included as data for the study had their names entered into a drawing to win one of three university-branded mugs. A faculty member not involved in the research project collected consent forms and presided over the drawing. I did not know who consented to participate in this part of the study until after the semester had ended. 22 sets of assignments were included in the survey's data.

Students who completed the electronic survey received an electronic gift card with a small sum of money loaded onto it. To maintain anonymity, after completing the survey, students were invited to click on a link to a second, separate survey where they could share the email address to which they wanted their gift card sent. 20 students completed the electronic survey.

The quantitative data that the survey produced was analyzed using descriptive statis-tics. The study's qualitative data—both the assignments and the responses to open-ended questions on the survey—were coded and analyzed by myself and an undergraduate research assistant. In some cases we coded the data with specific questions in mind (closed coding), in other cases we engaged in open-style thematic coding. We always engaged in at least two rounds of coding. Both Dedoose and Atlas.ti software were used to code the data.

Findings

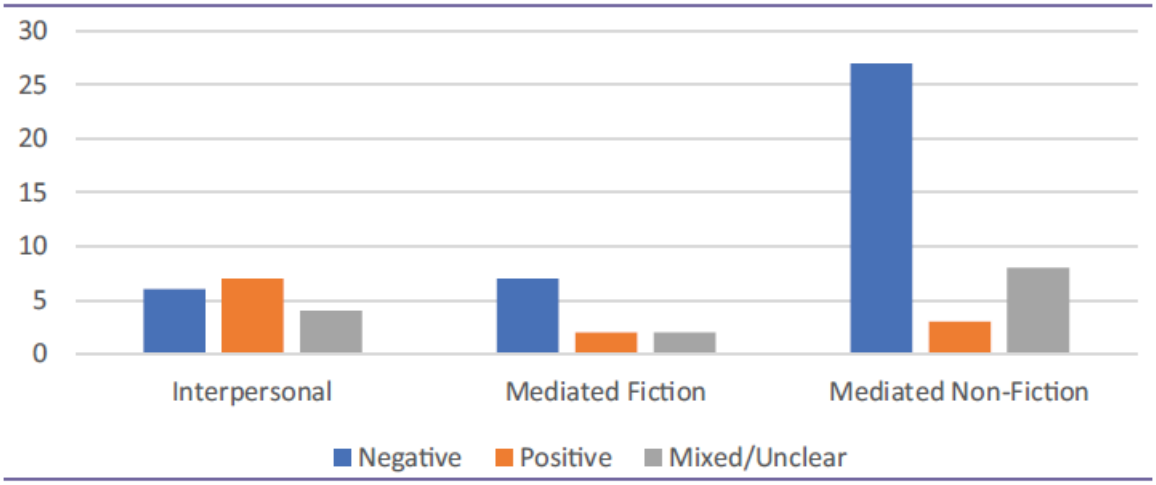
"What is:" participants' characterizations of their previous and existing relationship with information about the Middle East

The module's two assignments were analyzed in order to develop a picture of how respondents characterize their previous and existing relationships with information about the Middle East. While the findings for these questions could not formally inform the information literacy module of which they were a part, their purpose was to help the instructor to gain insights into how to develop the module and the course more generally in future years.

I and an undergraduate research assistant used closed coding to sort the 66 stories shared by students, in twenty-two autoethnography assignments, about moments that they felt had a decisive impact on their perceptions of the Middle East. We were interested in whether these stories revealed positive, negative, or mixed/neutral impressions of the Middle East; in the sources of these stories – whether they came from interpersonal experiences (e.g. meeting someone of Middle Eastern descent), from encounters with mediated fiction (e.g. watching a film), or from encounters with mediated non-fiction (e.g. watching the television news); and finally in the relationship between these two variables. The results, which can be seen on Table 2, are that a majority of stories (40 out of 66, or 61%) reported on the formation of a negative impression of the Middle East, the majority of the sources of students' stories overall were from experiences with mediated non-fiction (38 out of 66, or 58%), and that the majority of the negative stories were from this source as well (27 out of 40, or 68%).

We also used open or thematic coding to deepen our understanding of the experiences that students were sharing with us. Doing this allowed us to see that emotions featured strongly in many of the stories students shared, especially fear. Students wrote in vivid terms of being "terrified" during the time of the 11 September 2001 attacks on the World Trade Center and the Pentagon, or while watching the event "replayed in classrooms" later on. As one student wrote, "I remember being scared that something was going to happen to me as well, I did not feel safe." Or another: "I never fully understood the situation, but from the news I was under the impression that the Middle East was dangerous and that the United States had a lot of enemies there." Students also spoke of not understanding what was happening at the time but of seeing "the fear and concern" in the eyes of parents and other adults.

Table 2. Student vignettes about prior engagements with information about the Middle East.



The recurring theme of fear as experienced by the students dovetails with students' comments about how the Middle East is often depicted in the media they consume as being alien and unsafe. According to one student: "The Middle East has almost always been presented to me as this horrid, war stricken area of the world and it was nothing but an unsafe place to be." Describing their education, one student wrote: "Everything I was taught in school was always negative about the Middle East, unless we were talking about biblical times, then everything there was magical." According to another, describing video game depictions:

> There are many wars that are fledged (sic) in the Middle East but in the video games it looked like that's all that existed there. I couldn't understand how anyone could live in a place like this, something that I deemed dangerous and poverty stricken

Students reflected on how these sometimes emotional engagements with information about the Middle East may have had an enduring impact. Students discussed being fearful of "people with turbans and hijabs" because they "always heard bad stuff about them on the news." Specifically referring to September 11th, one student wrote: "though there are no Muslims in my area that I grew up, this event

made me question the Muslim people that I encountered throughout my years." About American Sniper, another student wrote,

> While the movie didn't really affect how I thought consciously, I feel like sub-consciously it did. I saw all the horrible things that some of the groups would do and while don't know how true they are, it is still a thought that goes on in the back of my head anytime I hear news on the Middle East.

We also coded twenty-two information literacy plan assignments to see how students characterized their information literacy to date. This assignment invited the students to revisit their autoethnography assignments and, zooming out from the particular moments that they discussed, to reflect on what kind of consumer of this information they had been thus far in their lives. After an initial round of coding revealed that the students described an essentially passive relationship with information about the Middle East—both as children and in more recent years—the research assistant and I recoded the assignments using closed coding to get a clearer account of what percentage of students characterized their relationship to information about the Middle East as passive or mostly passive and what percentage characterized their relationship to information about the Middle East as active or mostly active. Of the twenty-two information literacy assignments coded, twenty-one described a passive or mostly passive relationship to information about the Middle East. Reflecting on their engagement with information about the Middle East young people, many students mentioned the importance of the adults in their families or social circles. One student wrote, for example, that they "believed anything any adult told me." (Some similar themes were mentioned in the autoethnography assignments. For example, one student wrote: "Part of me felt that I had to follow suit with the way those around me felt, which made it easier to have that fear and hate.")

When they reflected on more recent information practices, the students shared both how they received their information (often through social media) and why they did not have a more active relationship with

this information. Several students referenced their busyness, and their tendency not to focus on the news "unless there is something that affects me specifically." For example, one student wrote:

> To be quite honest, I feel that I am not very intentional about keeping up with current affairs. As selfish as it may sound, I somewhat tend to try to stay in my lane and focus on things that are going to make me a better individual, such as striving to earn my degree, to eat healthy, to take my workouts seriously, and to use my spare time to do things that give me a creative outlet, such as producing music.

Like this student, several others discussed to their absence of an active relationship with information about the Middle East with some amount of shame or guilt, referring to their behavior as self-interested or lazy.

"What works:" the role of the module and the class in improving students' information literacy with respect the Middle East, and improving their understanding of information literacy

The results of the electronic survey were tabulated and analyzed so as to gauge the impact of the information literacy module and the class on the students' dispositions and practices with respect to information about the Middle East, as well as their under-standing of information literacy itself. While there are many things that might be considered to be consonant with information literacy, I focus in this analysis on those dispositions, practices, and understandings that came up in some way during the module. The research revealed three findings.

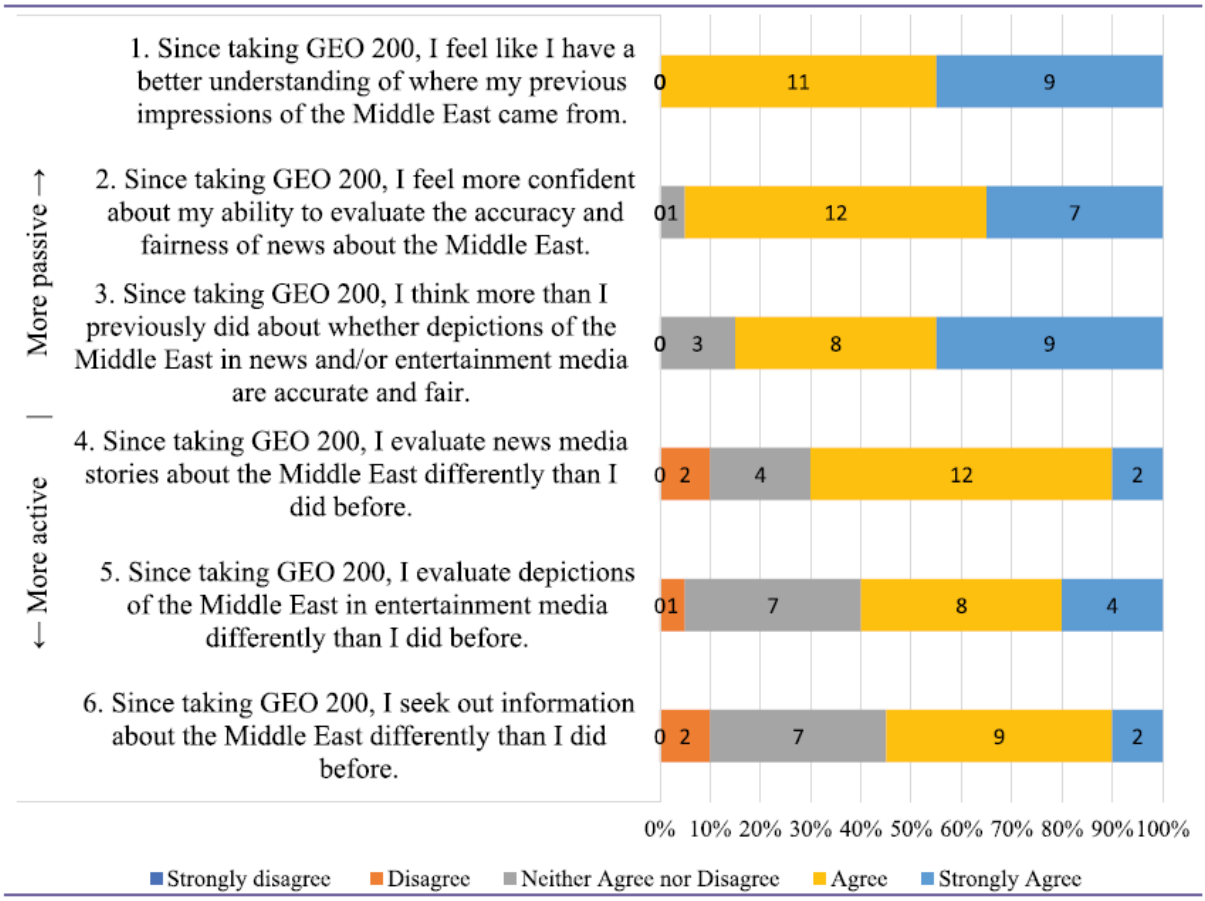
Finding 1: Respondents reported improvement to their information literacy since taking the class, but greater changes were reported in dispositions than in practices

The survey presented respondents with several statements with which participants were asked to indicate their level of agreement on a Likert scale. As Table 3 illustrates, all the statements were related to information literacy, but fell along a spectrum in terms of the level of activity to which they referred. At one end of the spectrum were statements about respondents' thoughts, understandings, or dispositions, (e.g. "Since taking GEO 200,6 I feel like I have a better understanding of where my previous

impressions of the Middle East came from"), while at the other end were statements about respondent behavior or practices (e.g. "Since taking GEO 200, I seek out information about the Middle East differently than I did before").

As Table 3 makes clear, survey responses suggest that the majority of participants believe their information literacy had improved since taking the class. The majority of participants selected Agree or Strongly Agree for all statements. However, the rate of agreement drops as the activity-level implied by the statement increases. So whereas 100% of respondents agreed or strongly agreed with the first statement—"since taking GEO 200, I feel like I have a better understanding of where my previous impressions of the Middle East came from"—only 55% of respondents agreed or strongly agreed with the last statement—"since taking GEO 200, I seek out information about the Middle East differently than I did before."

Table 3. Survey responses to closed-ended questions.



Finding II: Respondents reported that both the module and the class helped to improve their information literacy

The impact of both the class as a whole and the information literacy module was suggested strongly by participants' responses to the open-ended questions that followed up survey statements 1, 2, 4, 5, and 6.

The impact of the information literacy module was especially pronounced in students' responses to the questions that followed up statements 1 and 2. For example, respondents who agreed or strongly agreed with statement 1—that they felt they had a better understanding of where their "previous impressions

of the Middle East came from"—were asked to explain why they thought this was the case. While some responses were somewhat broad, pointing to a greater understanding of the region in general, 14 out of 20 referred to the information literacy module in some way, and seven of these responses referred specifically to the autoethnography assignment. Among respondents who agreed or strongly agreed with statement 2—that they felt "more confident" about their "ability to evaluate the accuracy and fairness of news about the Middle East" since taking the course—14 out of 18 referred to the course's information literacy instruction when explaining why they thought this was the case. Some samples of these answers can be seen in Table 4.

Table 4. Participants' self-reports on information literacy improvement concerning the Middle East: Some responses to open-ended questions.

Elaborations on statement 1: Since taking GEO 200, I feel like I have a better understanding of where my previous impressions of the Middle East came from.
1. I have been saturated by news sources and personal opinions my entire life without realizing where they come from. Now I am better equipped to think criticality.
2. We had an assignment where we analyzed our first impression in a form of vignettes, whether from family, prior education, media or real world experiences. This helped really decipher why or how we got our impressions from
3. The assignment we did on explaining our biases at the time made me realize that I never questioned why I had my thoughts on the Middle East. It made me analyze my thoughts and change them on what I learned.
4. After taking this class I see that my own biases came from T.V. the media, and trips to Israel with my family. When we wrote that intro paper about looking into our own preconceptions of the Middle East it really opened my eyes to how many prejudices I had.
Elaborations on statement 2: Since taking GEO 200, I feel more confident about my ability to evaluate the accuracy and fairness of news about the Middle East.
5. The realization that the United States and Britain had a large role to play in the construction of Israel. Not necessarily to help the Jewish people, but to have a colonized territory in the region is frankly surprising. With this realization I have come to understand why many Middle Eastern arabs are frustrated with the presence of Israel. To many the country is purely the geographical remnants of a colonized society
6. I think this class made me more conscious of different biases in media and how sometimes events can be portrayed inaccurately.
7. I think I am better at finding more accurate news about the Middle East because we practiced in class, as well as studied relations between different nations in the area, so it makes it easier to find information.
8. We focused a lot on media bias throughout the semester. I appreciated that we focused on how to determine whether something is bias rather than just explaining what media bias is.
9. I think using methods learned in class I can more fairly evaluate a news source as accurate and/or fair.
10. Media news outlets can be extremely biased. Whenever i see news articles about the Middle East I try to check what news outlet it comes from and who wrote it
11. I feel confident in being able to view this conflict in a holistic point of view where I consider both sides.

The impact of both the course and the module could also be gleaned by student responses to statements 4 through 6 (see Table 5). Students who agreed or strongly agreed with those statements

were asked to explain in what way or ways they evaluated “news media stories about the Middle East” (survey statement 4) and “depictions of the Middle East in Entertainment media” (survey statement 5) differently than before taking the class, and in what way or ways they sought out “information about the Middle East” differently than before taking the class (survey statement 6).7 Some student responses referred to the factual knowledge they gained in the class as a whole. One respondent, for example, noted that “knowing more about the area helps me to analyze current events” (Table 5, example 4). Another noted that they “now realize how complicated some issues in the area can be, so I try to look up more information after I read/see something” (Table 5, example 16). Other responses, however, seemed to reference topics and concepts discussed during the information literacy module. Several respondents reported having more critical and cautious dispositions when it comes to information about the Middle East, for example. Others wrote that they felt better able to identify Middle Eastern stereotypes. This was especially pronounced in student answers to the question about their evaluation of entertainment media. One respondent, for example, wrote that they “recognize more biases in media and tv shows on the Middle East than I did before . . . ” (Table 5, example 10). When referring to practices, students mentioned several things that were discussed and/or practiced during the module—e.g. consulting multiple sources, looking for reputable or credible sources, looking for more “in depth articles,” and critically examining terminology choices and sources of information choices.

Table 5. Participants' self-reports on information literacy practices concerning the Middle East: Some responses to open-ended questions.

Elaborations on statement 4: Since taking GEO 200, I evaluate news media stories about the Middle East differently than I did before.
1. This class helped me analyze new stories and how to find reputable sources to read
2. I think about the bias more. I always knew there was bias but it just made me consider it more when I see an article.
3. I apply critical thinking skills that we learned in class and deduct from there whether or not a news source is accurate or as unbiased as it can be. I ask myself more questions, and don't take peoples word for things just because they claim to align under my way of thinking.
4. Knowing more about the area helps me analyze current events.
5. Again, I see news stories now as more surface level information rather than the whole truth. If I'm curious about why something happened as I see it on CNN I look into it more through in depth articles rather than just reading a chyron headline and moving on.
6. The news on both sides of the aisle (pro-Arab, pro-Israel/pro-United States) tends to be sensationalized. It's important to realize even trustworthy networks can sensationalize the conflict.
Elaborations on statement 5: Since taking GEO 200, I evaluate depictions of the Middle East in entertainment media differently than I did before.
7. Middle East has certain stereotypes in media as well that I can now identify
8. I think a lot of entertainment media overuses the "Muslim Terrorist" enemy troupe and it creates such a bad stereotype that all muslims in western entertainment are the enemy. I had always become normalized to it because my mid-to-late childhood was well after 9/11 when media started to obsess over using these harmful depictions.
9. It's easier to identify Middle Eastern stereotypes, which makes it easy to tell if a show/video/meme is not based on real people or the area.
10. I know recognize more biases in media and tv shows on the middle east than I did before. For example, I notice that shows in the middle east use a sepia or orange tint to show the place as dangerous.
11. This class showed me that not all of the things I have seen online are completely accurate.
Elaborations on statement 6: Since taking GEO 200, I seek out information about the Middle East differently than I did before.
12. I am more cautious of where I go to read about the Middle East and foreign affairs.
13. I like to look for credible sources on what actually happens. But even then you sorta have to take the information with a grain of salt.
14. I try to find multiple news sources on big issues if I want to get a better understanding of an issue. I used to just find one and be done with that and it would be my only way of thinking on an issue.
15. I only use credible sources such as The Washington Post or The New York Times.
16. I always have had an interest in the middle east, but now I realize how complicated some issues in the area can be, so I try to look up more information after I read/see something.
17. I find myself a lot more interested in the Middle East and I think that comes from learning that the area isn't listened to by America and just learning about the culture there also.

Finding III: Respondents' understandings of information literacy both reflect and depart from ideas discussed during the module and the class

As the above makes clear, when students claimed that their information literacy practices had improved as a result of the class, their subsequent explanations of what this looked like—in their answers to the questions that followed up survey statements 1, 2, 4, 5, and 6 —often lined up with practices and dispositions we had discussed and/or practiced during the information literacy module or the class. The same was often true of students' answers to a separate survey question that asked them what they

thought were “some of the most important things that you think people who are ‘information-literate’ do or know?” In their responses to this question students mentioned the importance of looking at more than one source of information on a particular issue, the importance of conversations with others, and the importance of having an open-mind. Some examples of responses to this question can be seen in Table 6. However, among students’ answers to all of these questions were some that suggest ways in which the module may have fallen short of its goals. For example, while the information literacy module attempted to offer students some critiques of hegemonic ways of seeing both bias and the idea that there are two discrete sides to all issues, when students mentioned these things in their survey responses, they generally did so in fairly hegemonic ways.8 For example, one respondent noted that information literate people knew “Not to fall in the trap of either sides (sic) agenda” (Table 6, example 9). In the answers to the questions that followed-up statements 4–6, a student noted that they try to determine “whether or not a news source is accurate or as unbiased (sic) as it can be” (Table 5, example 3). Another student stated that they “only use credible sources such as The Washington Post or The New York Times (sic)” (Table 5, example 15). These answers raise the question of whether my efforts to encourage the students to think differently about bias and “both-sidesism” were effective.

Table 6. Participants' understandings of information literacy.

Some answers to the question: "Without doing any research, what are some of the most important things that you think people who are 'information literate' do or know?"
1. Research multiple sources, try to have conversations with others to see different perspectives
2. Read more than one article on the topic to get different viewpoints/sides, have multiple media outlets they trust, look into the authors/reporters background to find possible biases.
3. Check sources, check you wrote the sources (sic), find other sources talking about the same topic, check to see where on the political spectrum the sources lay on, have their own opinion but don't examine sources with that opinion, open mindset.
4. Research and evaluate information correctly.
5. Look for information in the right places, and still consider all aspects of the information they are reading.
6. They know which sources lean certain directions
7. They know how to read for bias words or describing words.
8. With people that are information literate understand the skewing of data or stories from sources and are able to see through it
9. Not to fall in the trap of either sides agenda. Like I said before they don't care who they hurt or the amount of truth in it. If it is a story that can help their side, they'll run with it
10. Know how to read past conspiracy theories (there are seriously a ridiculous amount surrounding Corona Virus and many my age keep falling for them), Understand that almost all sources have bias, and realize that bias does not inherently mean that a source cannot be trusted.

A second observation that can be made from this data is that several students responded to questions about information literacy in ways that gestured vaguely towards a "perfect" mode of engagement with information. This can be observed in several of the examples presented in Table 6, for example: information-literate people "research and evaluate information correctly" (example 4, my emphasis); and they "look for information in the right places" (example 5, my emphasis). A similar, and similarly vague, emphasis on the ideal is also visible in some of the students' elaborations upon the survey statements above. Students refer to their ability to find "reputable sources" for example (Table 5, example 1), and to apply "critical thinking skills" (Table 5, example 3). These correct but pat answers may simply reflect participants' interest in getting through the survey quickly. They do, however, leave me to wonder if the students have been inadvertently left with the impression that there is one single correct way of engaging with information, or that to be an information-literate person requires that one possess a particular expert set of knowledge and skills, rather than engage in an always complex and messy process.

Discussion

"What is"

This study was useful in providing me with a deeper understanding of the relationship to information about the Middle East that my students came to class within the Fall of 2019. In particular, the analysis of the autoethnography and information literacy plan assignments illustrated to me the emotional nature of content about the Middle East for these students, as well as their prior tendency to absorb information about the Middle East in a largely passive way.

While it would be imprudent to make too many assumptions about future groups of students based on this group, the social nature of worldviews and common sense makes it likely that tweaks to the module based on these findings will improve its efficacy with the students who come through the class in coming years. While the module included some discussion of the role that emotion can play in our information choices (the fifth module statement), and while it also made space for discussing some of the geopolitical reasons behind particular representations of world events and the places involved in them (the second module statement), we did not explore at length the ways in which strong "negative" emotions like fear, anger, and disgust can be stoked and used to create the conditions necessary for particular kinds of (domestic and) geopolitical actions on the part of the U.S. (or other) state(s)—a topic much covered by geographers and others (Boler & Davis, 2021; Gregory & Pred, 2007; Mullings et al., 2010; Pain & Smith, 2008). Nor did we discuss how a passive posture towards information about other parts of the world—itself something that can be understood as the result of structural conditions— can make this work of emotional manipulation particularly easy since information consumers are unlikely to have the knowledge necessary to question what they are hearing (Herman & Chomsky, 2002).

In addition to discussing these issues with students in future iterations of the module, an applied approach that could be tried would be to explore mindfulness meditation as a way of helping students to

engage with information, and the emotions triggered by information, in a way that is less reactive and more intentional (see Berila, 2016; Pegrum & Palalas, 2021).

Another important theme that emerged from the analysis of the students' assignments, and in particular the autoethnography assignment, was the overwhelming sense of the Middle East as dangerous and alien. Multiple students reported simply not being able to understand why an attack like the one of September 11th, 2001 happened. The course as a whole is designed to explore the history of Europe and the U.S.'s involvement in the Middle East, a history that most students are unaware of when they begin the course. I plan to continue to teach this important historical content. I also plan to expand the exposure I offer students to information and representations of the Middle East emerging from the Middle East, and from people of Middle Eastern descent. As Edward Said (1978) observed, a great deal of ideological work, in particular of the racist variety, is accomplished by simply never including in one's curricula the voices of the people who are being studied.

"What works"

The survey results suggest that the information literacy module and the course were successful at improving students' information literacy—both their dispositions and (to a lesser extent) their practices when it comes to information and representations of the Middle East, and their understandings of information literacy. The majority of respon-dents who completed the survey reported that their information literacy with respect to the Middle East had improved. Moreover, they were able to list multiple things that information-literate persons know and do, and reported utilizing and possessing some of the practices and dispositions associated with information literacy when engaging with information about the Middle East. This said, student responses on the survey also suggested ways in which the module could be improved.

"Bias" and "both sides"

While some survey responses suggested that respondents were thinking about ideas like "bias" and "both sides" in non-hegemonic ways, other responses implied fairly conventional ways of understanding these things. These understandings are firmly lodged in public discourse so it is no surprise to have found them reproduced in responses to the survey, despite the attention given to these issues in the module.

In this first iteration of the module, I attempted to complicate and enlarge the idea of bias beyond its conventional usage. It may be more straightforward for students, how-ever, to simply critique the idea of bias. This is the approach taken by Catherine D'Ignazio and Lauren F. Klein in their book Data Feminism (D'Ignazio & Klein, 2020). D'Ignazio and Klein locate bias as part of a set of concepts that ultimately secure rather than challenge power because they "locate the source the problem in individuals or technical systems" rather than "structural power differentials" (D'Ignazio & Klein, 2020, p. 60). Moreover, they argue that hunting for "bias" alone can have the effect of perpetuating the exclusion of voices that have been historically marginalized. A more direct critique of bias in the module might serve to inoculate students against the idea that identifying (and avoiding) bias is an adequate or critical approach to information.

As with bias, a more head-on critique of the discourse of "both sides" might be warranted. Indeed, the history of U.S. involvement in the Middle East offers an opportunity to explore with students the sometimes very superficial nature of the differences between the two political parties in the U.S. when it comes to foreign policy (Glassman, 2005).

Perfection as the bar

Responses to the survey suggest the possibility that students might have a clearer impression of what an "ideal" information-literate person knows and does than they have of particular information-related actions an ordinary person might engage in.

Upon reflection, it is possible to see how students might have emerged from the module with this impression. While the six statements that anchored the module were meant as starting points for more complex discussions, the statements themselves may have created the impression that there is a single mold of "expert" information-literate person and, correspondingly, a single set of always-correct behaviors and understandings. The prominence of these statements during the module may have undercut students' ability to see information literacy as a process, and a messy one at that, and may have led them to see it as a kind of final (enlightened?) state. One of the dangers of this is that students will not bother to aspire to be information literate if they think only perfection "counts."

In future iterations of the module, more could be done to underscore the inherent messiness of the process of engaging with information well, and the absence of any single correct way of doing so. This might be best accomplished by giving students more opportunities to practice and receive feedback on skills like finding, reading, comparing, and critiquing different sources of information, including in small groups. This type of practice could help students to see and see validated a process that is messy and that can generate a wide range of valuable insights and questions. While incorporating more opportunities for practice and feedback might require extending the module's reach into the semester, one of the benefits of this is that students would be better able to engage with information about the Middle East critically as their knowledge about the region grows.

Knowledge production

As noted in the discussion of the design of the information literacy module above, I chose not to focus on students' roles as producers and transmitters of knowledge and information. Future iterations of this module might create more opportunities for students to reflect on and practice the responsible conduct of this work. LIS and media research have suggested that instruction that emphasizes how information users are also producers of information can improve the sophistication of students' understandings of information more generally (Hobbs & Frost, 2003; Mackey & Jacobson, 2011). Moreover, such an

emphasis has the potential to expand the Geographical tradition of helping students to become ethical and effective knowledge producers (Heyman, 2000; 2004; Longan, 2007; Pande et al., 2013) by helping them to cultivate skills that are relevant to the genres and sites in which they are already producing knowledge (e.g. through social media, across messaging apps).

Conclusion

Since I began to think about how to incorporate information literacy education into a course on the Geography of the Middle East, the problems of disinformation and misinformation have worsened, and the gravity of their potential consequences has become much clearer to many people. And yet, as the multi-directional accusations of misinformation and "fake news" should make evident, what all of us need—students and teachers alike—are not just strategies for engaging with information well but opportunities to contemplate and deepen our understanding of the relationship between power and knowledge today and in the past.

This paper has reported on one way of incorporating information literacy education into a Geography course. Far from being a distraction from the "real" work of Geography instruction, information literacy education—the purpose of which is ultimately to help students learn "how to learn" (Association of College and Research Libraries [ACRL], 2000, p.3; Mackey & Jacobson, 2011, p.70)—can ensure that students have some of the abilities and perspectives they need to capably appraise and critique the information, representations, and arguments that will come at them, and that they themselves may be inclined to create, long after their college years are over. Geographers, many of whom already teach students the fundamentals of finding and evaluating the sources, already teach students about the political-economy of culture and media, and already help students to understand what it means to participate in public discourse responsibly, seem especially well positioned to deepen students'

understanding of the politics of information today. I look forward to reading about many more efforts of this sort in the years to come.

Notes

1. Though see O'Tuathail (1998) and Somdahl-Sands (2015) for attempts within Geography to integrate some of these various elements of information literacy. O'Tuathail & McCormack report on their attempt to simultaneously teach students how to use the internet for research while also teaching them the critique of it. And Somdahl-Sands explains her process of bringing together the teaching of critical media literacy and the sharing of key concepts like Orientalism and mental maps in an assignment in which students refine their media analysis skills by blogging.

2. For an overview of the histories of and differences between them, see Mackey and Jacobson (2011). Briefly, media literacy and meta-literacy place a greater emphasis than information literacy historically did on the creation of media and information, including collaboratively and including in new media spaces.

3. LIS scholarship has made a similar move towards qualitative and critical methodologies (see Halpern et al., 2015; Magnus et al., 2018).

4. I was especially interested in whether the module improved students' information literacy, however, because content about the Middle East was taught during the module and discussions of information took place throughout the duration of the course, it did not make sense to try to separate the module from the class for analysis in any definitive way.

5. I also kept occasional research memos but these will not be discussed here due to space constraints.

6. This is not the actual course number.

7. These questions received 13, 12, and 11 responses respectively. These low numbers may indicate respondent fatigue, as these questions came fairly late in the survey. They may also indicate that respondents were unsure how to answer these questions, or that answering them required a type of reflection that they were unwilling to engage in at that moment.

8. Not always, however: one respondent wrote that information-literate people " . . . understand that almost all sources have bias, and realize that bias does not inherently mean that a source cannot be trusted" (Table 5, example 10).

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